



FINAL



DAVIS 2020-2040
**Climate
Action &
Adaptation
Plan**

April 18, 2023

2020-2040



LAND ACKNOWLEDGEMENT STATEMENT

We should take a moment to acknowledge the land on which we are gathered. For thousands of years, this land has been the home of Patwin people. Today, there are three federally recognized Patwin tribes: Cachil Dehe Band of Wintun Indians of the Colusa Indian Community, Kletsel Dehe Band of Wintun Indians, and Yocha Dehe Wintun Nation.

The Patwin people have remained committed to the stewardship of this land over many centuries.

It has been cherished and protected, as elders have instructed the young through generations. We are honored and grateful to be here today on their traditional lands.

Approved by Yocha Dehe Tribal Council (July 23, 2019)

Key Contributors

This Climate Action and Adaptation Plan (CAAP) is dedicated first and foremost to all Davis community members, with special thanks to those who participated and attended CAAP workshops, completed online surveys, visited 'pop-ups', supported working groups and equity discussions, provided comments in online forums, at Commission meetings, and via emails, responded to CAAP document's public comment period, who are members of faith communities, community-based organizations, and other groups who talked amongst themselves, and who have taken actions to live sustainably and respond to climate change in ways both small or significant. The community values you!

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See *Special Recognition to 2020-2022 City Council members*, page 129

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Letter from Mayor Will Arnold

April 18, 2023

To the Davis Community,

It is my pleasure, on behalf of the Davis City Council, staff and community members to introduce the updated **Davis 2020–2040 Climate Action and Adaptation Plan** (CAAP). It presents a vision for Davis' quality of life, environmental stewardship, climate justice and economic vitality.

This CAAP ensures that Davis' climate objectives — social equity, environmental sustainability and financial responsibility — are presented in an integrated approach with measurable, effective actions. The CAAP has been developed through a robust outreach and engagement process undertaken during the height of the COVID-19 pandemic, through virtual meetings, online surveys, pop-up meetings and webinars to incorporate and reflect the goals and interests of the community. Over 1,000 ideas were shared by a broad range of people, and eventually consolidated into 28 prioritized actions in the CAAP. These actions address *adaptation* to minimize climate risk and *mitigation* to reduce greenhouse gas emissions.

In Davis, we pride ourselves on being an inclusive and equitable community, addressing the needs of all our residents, businesses, university students and families, including underserved community members. This CAAP provides an approach to respond to climate change and identifies measures to implement our community's commitment to be carbon neutral by 2040, five years ahead of the State of California target.

Finally, I want to thank all of the amazing people who worked on this vision in Davis. The Natural Resources Commission was the lead advisory body for the CAAP, and they incorporated input from other City Commissions as well as provided an additional framework for community discussion. Other key project contributors were the members of the CAAP project management team, the internal City staff team, local and regional community partners and the external Technical Advisory Committee. Everyone provided their time and expertise to bring this project to fruition. In addition, community members shared their ideas and inspiration to realize this vision.

On behalf of the entire City Council, I want to express our gratitude and reaffirm our support as we continue to move toward a climate-ready future, together.

Will Arnold, Mayor



Letter from Natural Resources Commission

To the Davis Community,

We are the Natural Resources Commission, a group of Davis residents who volunteer our time to advise the City on managing its energy, water, waste, and transportation. We would like to introduce you to the Davis 2020–2040 Climate Action and Adaptation Plan (CAAP), which has been our primary focus for the past two years. We hope you take the time to read this important document.

"We are on a highway to climate hell with our foot on the accelerator."

**—U.N. Secretary General
António Guterres
November 7, 2022**

Climate change has gotten more extreme in the last few decades. Without transformative action to control greenhouse gas emissions, scientists expect a ten-fold increase in extremely hot days, a forty-fold increase in annual heat waves, more extreme storms and droughts and more frequent smoky days from wildfires by 2040. You can read more about climate risks in the vulnerability section of the CAAP, and learn how the City plans to address them by looking at the adaptation actions.

The CAAP also includes mitigation actions to help the City reach carbon neutrality by 2040, five years ahead of the State's goal. You'll see a list of proposed actions here that are based on an approach used in climate strategies around the world: reducing energy demand by making buildings more efficient and promoting active and public transit; powering homes and vehicles through electricity instead of petroleum-based fuel; and making sure that electricity is generated from renewable resources. The other fundamental aspect of this approach is environmental justice. It's essential that these solutions are accessible and improve quality of life for everyone.

Implementing the City of Davis CAAP will not solve climate change alone — we are just one city — but *it represents our commitment to take responsibility for our share of a global problem*. The CAAP is a planning document, not the final word on these issues, and there will be details to fill in as the future unfolds and the suggested actions are evaluated. For right now, the CAAP shows us the magnitude of the task ahead and the scope of actions we need to start on.

With continued public participation, we hope to show other cities that it's not just feasible to reduce greenhouse gas emissions—it's desirable. There are a lot of ways that Davis could change for the better while contributing to the fight against climate change, many of which are supported by actions in this CAAP. For example, homes could be so well-insulated that you'll only need to turn on air conditioning a few times a year. You could drive an electric car and cook your dinner on an efficient induction stove that will have water boiling for pasta in two minutes. Or maybe you'll stop at the store to get groceries with your e-bike, effortlessly cycling past homes with climate-resilient landscaping down streets that are pleasantly free of traffic and shaded by a thriving, faithfully nurtured tree canopy.

So, please take a moment to look over the document, visit the CAAP website, and stay involved. We all have a role in helping to make Davis the best it can be for us, and for future generations.

Sincerely,

Members of the Davis Natural Resources Commission

List of Abbreviations, Acronyms, and Definitions

AB	Assembly Bill
Actions	Specific measures or steps identified in a CAAP for jurisdictions to reduce GHG emissions or increase their resilience to climate impacts
Active Transportation	Walking, biking, or rolling as a mode of transportation
Adaptation	Actions to prepare for and protect people, assets, and ecosystems from the current and future impacts of climate change
ASAP	Action Selection and Prioritization
Ascent	Ascent Environmental
BAU Forecast	Business as usual forecast; projected future GHG emissions if a jurisdiction undertook no new actions to reduce emissions and continued its current trajectory in job and population growth
CAAP	Climate Action and Adaptation Plan
CARB	California Air Resources Board
Carbon neutrality	GHG emissions generated by an entity are balanced by an equivalent quantity of emissions sequestered, captured, or removed from the atmosphere
Carbon sequestration	Capturing and storing carbon, removing it from the atmosphere on a long-term basis. Carbon sequestration occurs naturally, in biological sequestration by trees, soils, grasslands, and oceans. Methods for geological and technological sequestration are also being developed
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CFP	Comprehensive Funding Plan
City	City of Davis
CH4	Methane
Climate equity	Ensuring that historically underserved and frontline communities are able to equitably access and benefit from climate mitigation actions, avoid negative unintended consequences (e.g., gentrification and displacement), and are protected from the disproportionate impacts of climate change
CO ₂	Carbon dioxide
CCA	Community choice aggregation; a program that allows local governments and other not-for-profit entities to act as an electric utility, procuring power from alternative sources while using transmission, distribution, and other services from the existing utility. Valley Clean Energy is the Davis CCA

Cost-effectiveness analysis	An analysis of all costs and savings associated with an action to understand its cost to impact ratio. For GHG mitigation actions, this produces a net cost per metric ton of GHG emissions reductions metric
DDSP	Downtown Davis Specific Plan
DEI	Diversity, equity, and inclusion
EIE	Environmental Insights Explorer
EIR	Environmental Impact Report
e.g.	exempli gratia (Latin), meaning “for example”
EJ	Environmental Justice
Electrification	Converting natural gas or other fossil fuel equipment to electric equivalents
EMFAC	Emissions Factor model
EV	Electric vehicle
First/last mile	The segment of a trip between the nearest transit station and the other destination (home, work) used in the CAAP to refer to internal Davis short-trip transportation needs
FTA	Federal Transit Administration
GHG emissions	Greenhouse gases released by human activity or natural processes that contribute to warming of the Earth’s atmosphere by trapping heat, resulting in significant shifts to our climate
GHG inventory	A quantification of the GHG emissions produced by a jurisdiction or entity during a specific year, categorized by sector and emissions source, based on guidance outlined in an inventory protocol
Global warming	The long-term heating of the Earth since the pre-Industrial period due to human activities, primarily the combustion of fossil fuels
GWP	Global warming potential
i.e.	id est (Latin), meaning “that is” or “in other words”
IPCC	Intergovernmental Panel on Climate Change
Low-income	Households earning less than 80% of the area median income
Microgrid	Network of electricity users (often small) with a local source of supply that is usually attached to a centralized grid but is able to function independently
Micromobility	Transportation using lightweight vehicles such as bicycles or scooters, especially electric

Mitigation	Actions to reduce GHG emissions or to reduce climate risks
MMBtu	Metric Million British Thermal Unit
MOU	Memorandum of Understanding
MTCO ₂ e	Metric tons of carbon dioxide equivalent
MWh	Megawatt hour
LID	Low impact development
N ₂ O	Nitrous oxide
NPDES	National Pollutant Discharge Elimination System
NRC	Natural Resources Commission
NEVI	National Electric Vehicle Infrastructure Formula
PG&E	Pacific Gas & Electric
RPS	Renewable Portfolio Standard
SACOG	Sacramento Area Council of Governments
SB	Senate Bill
TAC	Technical Advisory Committee
TDM	Transportation Demand Management
UC Davis	University of California, Davis
UFMP	Urban Forest Management Plan
UWMP	Urban Water Management Plan
VCE	Valley Clean Energy
VMT	Vehicle miles traveled
Vulnerable populations	Populations who may be disproportionately burdened by government policy or external shocks and stressors
WWTP	Wastewater Treatment Plant
Zero net energy	A highly efficient building whose annual energy use is equal to or exceeded by renewable energy generated onsite

Climate Action in Davis: Overview and Context

OVERVIEW

The City of Davis 2020–2040 Climate Action and Adaptation Plan (CAAP) is the result of the City’s and community’s vision to attain 2040 carbon neutrality by building transformative networks and policies. The CAAP showcases characteristics Davis is known for—insight, drive, and capacity, a proactive, engaged community, regional collaboration, and a commitment to leading with environmental justice.

The CAAP is a living document that shares how the City will address climate change and collaborate with residents and businesses. The plan and the proposed actions will be regularly reviewed through community engagement, progress monitoring and an online dashboard, and exploration of emerging opportunities. CAAP updates are planned in 2025 and every five years thereafter (2030, 2035, 2040) and greenhouse gas (GHG) inventories will be conducted biannually.

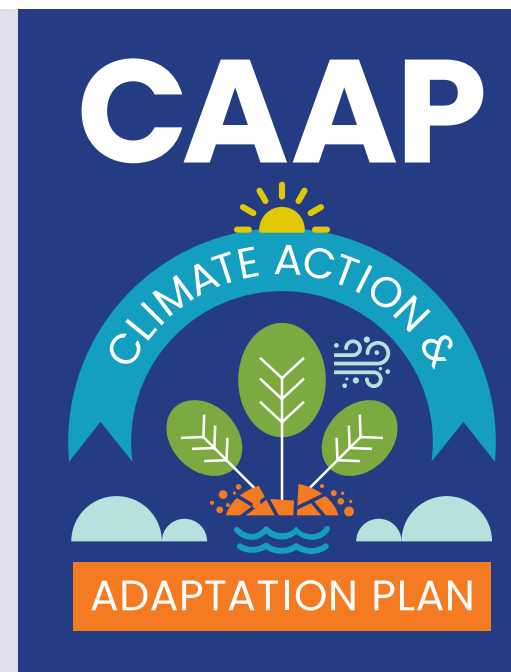
CAAP HISTORY

The first City of Davis CAAP was adopted in 2010. Since then, climate conditions have continued to decline and urgent, decisive action is crucial. Due to GHG emissions heating the atmosphere, scientists expect increasing trends toward more extreme weather, including longer, more frequent and intense heat waves, more severe wildfire seasons, extended droughts, increased flooding, rising sea levels, and changes to winter conditions such as more intense storm events and less snowpack.

All of these changes impact public health and safety, air quality, local jobs, the economy, natural environment, urban forest, and quality of life. Of special note, these climate change impacts drastically affect vulnerable populations and community members, including communities of color, indigenous people, low-income residents, youth, seniors, people with disabilities, unhoused people, and the health impaired. Addressing environmental justice through diversity, equity, and inclusion (DEI) is a fundamental aspect of Davis’ climate action and adaptation planning efforts.

WORKING TOGETHER

Although Davis alone cannot solve the impending catastrophic climate-related changes to the Earth’s system, it is imperative that we, as dedicated community members and the local government, commit to taking responsibility for a share of the problem. As stated in the March 2019 City Council Climate Emergency Resolution, we all face an existential climate emergency. We must act locally and advocate broadly to address climate change.



This 2020–2040 CAAP process, started in mid-2019, has been developed in response to these imperatives. It has included extensive community input during the COVID-19 pandemic, including virtual workshops, online surveys and community forums, small group meetings with targeted community members, tabling at community events, monthly Commission meetings/staff reports, and several presentations to the City Council.

In addition to municipal efforts, the entire Davis community—residents and businesses—will be essential partners in implementing CAAP actions to reach carbon neutrality and address climate risk. We all have a role to play, whether it seems small and incremental or large and significant. For example, every electric replacement for a natural gas appliance sends a strong signal. Every time a Davis resident chooses to walk, bike, carpool, or take public transit reduces emissions and local pollution. Many climate-friendly actions are available to everyone in the community, including eating local, plant-based foods, using less water, creating less waste, meeting with neighbors to create a resilient community, or planting trees and beneficial, native, and drought-tolerant landscapes.

The City will develop education and outreach materials to help engage the community and help people make a difference. Collaborative partnerships and engagement across the region will also support CAAP actions.

IMPLEMENTATION

CAAP implementation is intended to provide achievable, measurable GHG emission reductions and responses to climate risk that align with the Davis General Plan, the Downtown Davis Specific Plan, and other City goals and priorities, including energy efficiency, transportation and land use, waste, stormwater, water management, facilities, open space, parks and urban forestry policies. The CAAP also brings the City into compliance with California legislation enacted since 2010 to reduce GHG emissions, address climate risk, and incorporate environmental justice. The CAAP establishes an interim 2030 carbon reduction target and sets the community on a trajectory toward its 2040 carbon neutrality goal.

The current GHG emissions analysis on CAAP actions related to target attainment do not project that the CAAP will meet the minimum interim 2030 carbon reduction target. However, the City will continue to assess at regular intervals between now and 2030, which may include considering changes to proposed actions or additional actions to fill the gap. While it may not be possible to provide certainty about goal attainment at this time, the CAAP structure is in place to evaluate and monitor progress, update actions and respond to community input.

The actions identified in the current CAAP may not be perfect or comprehensive; this is a starting point. Although it may be difficult to imagine a carbon neutral Davis in 2040, this CAAP is founded on the premise that it is achievable with strong leadership and a community engaged around a common vision. The 2040 carbon neutrality goal will need further study and deeper commitments; these actions represent the continuation of Davis' long history of sustainability and a pathway to a better, more environmentally responsible future. These actions also represent an approach that is within the current community understanding and capacity to embrace and adopt. We anticipate that new technology, funding and partnership opportunities may emerge from regional, state and federal organizations to help Davis accomplish these goals.

This CAAP document provides a framework for further developing and elevating these efforts, incorporating innovative and creative approaches for implementing sustainable GHG reductions along with diverse co-benefits, attracting new investment to provide opportunities for current and future residents, and celebrating a culture of respect, diversity, equity, inclusivity.



Executive Summary

Executive Summary

This City of Davis (City) 2020–2040 Climate Action and Adaptation Plan (CAAP) is part of Davis’ continuing efforts to embrace innovative and creative efforts to support sustainability and community quality of life.

Davis has historically made long-term commitments and implemented successful programs in biking and alternative transportation; renewable energy and energy efficiency; sustainable land use planning; urban forestry; green management of public facilities, parks and open spaces; waste reduction; water and stormwater management; and resource conservation. The City has demonstrated advocacy and resilient leadership on reducing climate risk and greenhouse gas emissions, addressing environmental justice, and enhancing quality of life in our community.

The CAAP provides a framework for further developing and elevating these efforts, incorporating innovative and creative approaches for sustainability implementation and diverse co-benefits, attracting new investment to provide opportunities for current and future residents, and celebrating a culture of respect, diversity, equity, inclusivity, and sustainability.

The CAAP fulfills the Davis City Council objective to establish a roadmap of carbon reduction policies to achieve the Davis carbon neutrality goal by 2040. This goal stems from the City Council resolution declaring a climate emergency in 2019 in response to current and expected future climate impacts, including increases in extreme heat, drought, tree mortality, wildfire and flooding (*“Resolution Declaring a Climate Emergency and Proposing Mobilization Efforts to Restore a Safe Climate” 2019*).

The CAAP describes achievable, measurable greenhouse gas (GHG) emissions reduction and climate change adaptation actions that align with the City’s goals and priorities. When implemented, these actions will reduce GHG emissions by 37% below 2016 levels by 2030 and set the community on a trajectory toward its 2040 carbon neutrality goal. The CAAP actions will prepare the community for climate change impacts, improve public safety, address environmental justice and enhance the quality of life for residents.

The CAAP also makes the City consistent and/or compliant with California legislation to reduce GHG emissions, address climate adaptation and incorporate environmental justice enacted since 2010 including Senate Bills 379 (2015) and 1000 (2018); Executive Order B-55-18; California Air Resources Board 2017 Scoping Plan; and Office of Planning and Research General Plan Guidelines. The CAAP demonstrates ongoing compliance with 2006 AB 32 (California Global Warming Solutions Act) and SB 375 (Sustainable Communities Act, updated 2018). The CAAP includes new emission reduction targets for 2030 that align with Senate Bill 32 as well as emission reduction targets through 2040 to align with Executive Order B-55-18.

Development of the CAAP roadmap of actions was initially guided by background research and technical information. The project management team subsequently developed a climate vulnerability assessment, review of the 2010 CAAP actions progress and status, and GHG emissions inventory, all of which can be found on the City of Davis website.

RELATIONSHIP TO OTHER CITY PLANS

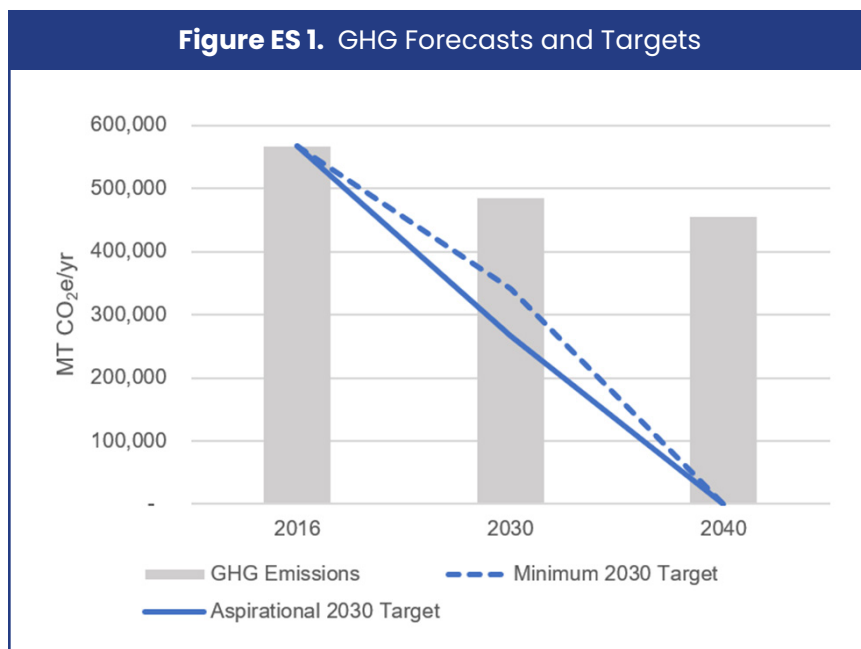
The recommendations and commitments defined in the CAAP align with, and support, many of the City's goals, policies, programs and recommendations outlined in other plans, including the General Plan, Downtown Davis Specific Plan (DDSP, in progress) and other requirements and approaches pertaining to transportation, energy efficiency, waste, stormwater, water management and urban forestry, among other areas. This CAAP builds on the goals established in the City's first CAAP, adopted in 2010. The City's General Plan update is envisioned to be completed prior to 2025, and the DDSP and its related environmental review are on track to be adopted in early 2023. **Chapter 1: Introduction** includes a description of state regulation and the relationship between the CAAP and other city and regional plans.

Regular updates are envisioned for the CAAP, with the first update in two years (2025 CAAP), followed by updates every five years (2030, 2035, 2040).

GHG INVENTORY, FORECASTS AND REDUCTION TARGETS

In 2020, in advance of initiating this CAAP, the City completed a regionally-integrated GHG inventory with partner agencies Yolo County and the Cities of Winters and Woodland, using 2016 as the baseline year for data collection. The CAAP development process included an update to this 2016 GHG emission inventory that incorporated a different on-road transportation emissions calculation methodology to better align with follow-on climate action planning analysis. In 2016, the City of Davis generated 567,000 metric tons of carbon dioxide equivalents (MTCO₂e), with most of these emissions generated from on-road transportation (74%). The remaining emissions came from natural gas and electricity use (15%), off-road equipment (4%), wastewater treatment (3%), solid waste disposal (3%), and water supply (<1%). Davis' 2016 base year inventory was used to develop 2030 and 2040 "business-as-usual" forecasts to align with the City's GHG reduction target years.

The 2030 and 2040 forecasts reflect how emissions would change over time in the absence of any further local climate action. The City defined two 2030 GHG targets that are consistent with the state's 2030 target and climate action planning guidance to local governments. The minimum target is to achieve GHG emission reductions of **40% below 2016 levels** by 2030, while the aspirational target is defined as **5.2 MT CO₂e/capita/yr** (or 53% below 2016 levels). The aspirational target represents a 57% emissions intensity reduction from 2016 levels of 12.0 MT CO₂e/capita. The City's 2040 carbon neutrality goal is five years ahead of the state's most recent target set in Executive Order B-55-18, which called for statewide carbon neutrality by 2045 and is aligned with the IPCC 2018 report that presents multiple pathways to keep global warming levels below a 1.5° Celsius threshold. **Figure ES 1** illustrates the City's GHG forecasts and targets.



CLIMATE IMPACTS

The Climate Change Vulnerability Assessment conducted as part of the CAAP examined how climate change hazards will affect City of Davis assets (infrastructure and natural resources), residents, and businesses. Like much of California, the City is already experiencing impacts from extreme heat events, flooding and extreme precipitation, drought, and poor air quality caused by wildfire smoke and the vulnerability assessment identified how these impacts are likely to change through mid-century and end-of-century timeframes.

The vulnerability assessment and GHG emission inventory and forecasts are summarized in **Chapter 3: City of Davis and Climate Change** with further details in Appendices C and D, respectively.

OVERVIEW OF COMMUNITY ENGAGEMENT PROCESS

The results of the GHG inventory update and target setting process and the climate vulnerability assessment formed the basis of robust community and stakeholder engagement, described in **Chapter 2: Plan Development and Community Engagement**, which included consultation with three main groups:

1.

The **internal City team** included representatives from each City department and relevant staff liaisons to City Commissions. The City Council was considered part of this team, with the Natural Resources Commission (NRC) as lead CAAP advisory body to the Council.

2.

The **Technical Advisory Committee (TAC)** included local and university representatives providing technical expertise in climate action planning, community engagement, transportation, energy, and other sectors. TAC roles included providing feedback/insight on CAAP project milestones, insight on technical topics within the Davis context and input on high-level strategies.

3.

The **Community** was a primary contributor and focus of the Davis CAAP engagement approach and will be integral to successful plan implementation. Since the CAAP development occurred during “in-person meeting” limitations imposed by the COVID-19 pandemic, every effort was made to engage community members remotely and to meet in person when possible. Community engagement included seven workshops and pop-up meetings and two online surveys, community forums, small group meetings with targeted community members, and tabling at community events between April and November 2021 with a focus on gaining ideas and feedback on climate actions. A dedicated page on the City’s website provided information and links to all CAAP actions and meetings.



As the City gathered information from community members on potential actions toward carbon neutrality and climate adaptation, the City shared 'in progress' CAAP products with the community and gathered input to support action development. Draft actions were presented to the community, not as a final, comprehensive plan, but instead as incremental, iterative information as it was being developed. Based on community ideas and input, 95 proposed CAAP actions were evaluated through a methodical process leveraging a climate action planning tool, Action Selection and Prioritization (ASAP) analysis. In addition to addressing two primary goals—carbon reduction and decreasing climate risk—the ASAP analysis factored in implementation feasibility and measurements of key co-benefits associated with each action.

Action evaluation resulted in 28 proposed prioritized CAAP actions, which were presented to City Council in December 2021. At that time, City Council requested further analysis of the draft actions for cost effectiveness and GHG reduction potential. The results were presented to, and approved by, City Council in May 2022. The approved list of actions formed the basis of the draft and final CAAP document and as the 'project description' for completion of required environmental review.

The Administrative Draft CAAP, consisting of community-driven actions, consolidated all the previous work into a single document released for public comment. More than 400 comments were received during the two-month comment period. Some comments addressed a single action, and some were multi-page, multi-issue recommendations. Comments came from community members, City Commissions, and other stakeholders. Community input has been considered and incorporated, where appropriate, as much as possible in order to be responsive to community interests and direction.

CLIMATE ACTION DEVELOPMENT

Actions to support GHG emissions reduction and climate adaptation were developed based on the results of the GHG emissions inventory, climate vulnerability assessment and extensive stakeholder and community input. **Chapter 4: Climate Actions** summarizes the priority actions which reflect a balance of GHG and climate risk reduction potential, co-benefits, and implementation feasibility. Along with the 28 prioritized actions, additional action ideas from stakeholders are also preserved in the CAAP document to potentially serve as a starting point for subsequent phases of implementation when the initial set of priorities have been completed or are underway. Each action achieves a plan goal, organized by sector, as shown in the following list.

CAAP GOALS BY SECTOR

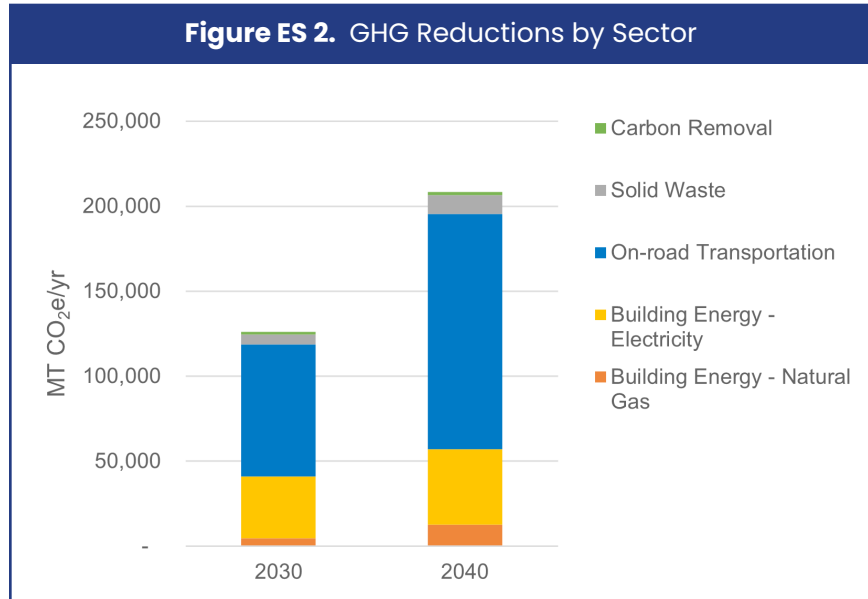
Building Energy and Design	<ul style="list-style-type: none">• Transition to high-efficiency, zero-carbon homes and buildings• Expand local renewable energy development and storage
Transportation and Land Use	<ul style="list-style-type: none">• Adopt zero-emission vehicles and equipment• Increase opportunities for active mobility• Strengthen transit service within Davis and between regional neighbors• Reduce single-occupant vehicle use• Expand opportunities for local housing development to balance local employment opportunities
Water Conservation and Waste Reduction	<ul style="list-style-type: none">• Conserve water in buildings and landscapes• Reduce waste generation and increase diversion away from landfills
Climate Adaptation	<ul style="list-style-type: none">• Create a cooler city with more urban forest and green space for people and habitat• Protect public health, safety, and infrastructure against damage and disruption from flooding• Prepare and respond to climate hazards to ensure that the City is equipped to address current and future challenges
Carbon Removal	<ul style="list-style-type: none">• Demonstrate climate leadership through innovation, education, and investment

Table ES 1 summarizes each of the 28 prioritized actions within these goal areas and sectors. The actions are described both in this document and in Appendix A: Implementation Roadmaps. This document provides preliminary implementation information for each action, but further development will need to be completed by the lead City agency, along with key regional and community partners. Additionally, each action will have concerted educational and outreach components, require further community engagement and ‘buy-in’, and will address diversity, equity, and inclusion (DEI) issues and opportunities.

Table ES 1. CAAP Goals and Priority Actions	
GOAL	ACTIONS
Building Energy and Design (BE Actions)	
Transition to high-efficiency, zero-carbon homes and buildings	BE.1 Building electrification when permit is needed (Voluntary) BE.2 Building electrification for existing buildings (Voluntary) BE.3 Energy efficiency and ventilation in rental properties BE.4 All-electric new construction BE.5 Community solar energy BE.6 Carbon mitigation fund BE.7 Renewable energy in City facilities
Expand local renewable energy development and storage	BE.8 Create community microgrids and resiliency hubs
Transportation and Land Use (TR Actions)	
Adopt zero-emission vehicles and equipment	TR.1 Electric Vehicle Charging Plan TR.2 Decarbonize municipal fleet
Increase opportunities for active mobility	TR.3 “First mile/Last mile” transportation TR.4 Electric micromobility vehicles TR.5 Pedestrian and bicycle safety
Strengthen transit service within Davis and between regional neighbors	TR.6 Expand public transit TR.7 Strengthen regional transit
Reduce single-occupant vehicle use	TR.8 Downtown parking improvements TR.9 Transportation Demand Management (TDM) program TR.10 Low Emissions Vehicle Program
Expand opportunities for local housing development to balance local employment opportunities	TR.11 Develop sustainable housing
Water Conservation and Waste Reduction (WW Actions)	
Conserve water in buildings and landscapes	WW.1 Climate-ready private landscapes
Reduce waste generation and increase diversion away from landfills	<i>No actions prioritized at this time</i>
Climate Adaptation (AD Actions)	
Create a cooler city with more urban forest and green space for people and habitat	AD.1 Cool surfaces AD.2 Urban forest
Protect public health, safety, and infrastructure against damage and disruption from flooding	AD.3 Green stormwater infrastructure AD.4 Flood resilience of critical infrastructure
Prepare and respond to climate hazards to ensure that the City is equipped to address current and future challenges	AD.5 Funding and staffing for existing efforts AD.6 Public resources during extreme weather events
Carbon Removal (CR Actions)	
Demonstrate climate leadership through innovation, education, and investment	CR.1 Carbon sequestration and removal CR.2 Carbon farm plans

TARGET ACHIEVEMENT

Implementation of all priority actions is estimated to reduce community-wide emissions by 126,200 MT CO₂e/yr in 2030 and by 208,450 MT CO₂e/yr in 2040. **Figure ES 2** shows the estimated CAAP action GHG reductions in 2030 and 2040 organized into emissions categories that approximately align with the GHG inventory. The greatest reductions in both years are attributed to on-road transportation (blue) which is largely associated with the estimated adoption of electric vehicle (EV) and other zero-emission vehicle technology. The second greatest source of reductions is from building energy electricity (light orange), which reflects Davis' participation in Valley Clean Energy and the expectations for its zero-carbon energy mix by 2030. The third greatest source of reductions is from solid waste (gray) actions followed by building energy natural gas (dark orange) actions and local carbon removal opportunities (green).



The 2030 GHG reductions would result in emissions that are 37% below 2016 levels with an emissions intensity of 7.0 MT CO₂e/capita/yr. This current estimate falls short of the City's minimum 2030 GHG target (i.e., 40% below 2016 levels), and would not achieve the aspirational goal to achieve an emissions intensity level of 5.2 MT CO₂e/capita/yr. The minimum 2030 target achievement gap is estimated to be approximately 17,500 MT CO₂e/yr; multiple factors will influence the City's ability to achieve its 2030 targets. The state may implement new or more aggressive GHG reduction programs to achieve the SB 32 GHG target (i.e., 40% below 1990 levels by 2030). New GHG-reducing technology may be developed, or uptake of current technology might exceed the estimates included in the CAAP analysis, such as EV adoption rates. CAAP action implementation could occur at a higher rate than initially assumed in the GHG reduction estimates, or the City could develop additional GHG reduction actions focused on the 2030 target year. The CAAP development process prompted communitywide discussion about the best approach to climate action, including a discussion about community values as it relates to new mandatory policies versus incentivized voluntary approaches. As a result of this community debate, City Council opted to remove mandatory implementation approaches in this version of the CAAP in favor of incentives and education to promote voluntary implementation of actions. City Council also stated its expectation that community discussions about implementation approaches should continue as part of the CAAP monitoring and updating process based on the community's progress toward its GHG targets.

The CAAP priority actions start the City on a realistic trajectory toward the 2040 carbon neutrality target. However, the estimated implementation of this current set of actions would not achieve the City's target. Predicting the future through 2040 is not possible with accuracy, and there is likely a role for new technology to be developed and deployed, enhanced state and federal programs to be implemented in pursuit of GHG targets at both levels of government, greater progress on implementing the current suite of CAAP actions, and new or enhanced local climate actions to increase participation within the community. The City will also pursue carbon dioxide removal (CDR) strategies to address any remaining emissions in 2040, including natural sequestration in forests and agricultural lands and industrial CDR at the local and regional level in collaboration with other area governments. The City plans to update the GHG inventory every two years and update the CAAP every five years beginning in 2025.

IMPLEMENTATION

Implementation roadmaps were developed for the prioritized actions and offer potential pathways to robust execution of each CAAP action. Each roadmap, presented in Appendix A, includes information on next steps, related CAAP actions, the priority level of the action, and outlines potential completion timelines, milestones, and performance tracking metrics. **Chapter 5: Implementation and Monitoring Framework** summarizes potential funding and financing sources for climate action projects and programs within broad categories including grants from local, state, and federal agencies; revenue-generating tools; fiscal policies; and private market financing strategies (e.g., debt instruments) to provide direction for implementation. The CAAP concludes with recommendations for CAAP monitoring and updates – a top-down approach through annual tracking of primary emissions activity data (e.g., energy consumption) and regular GHG inventory development (every 2 years), and a bottom-up approach through performance monitoring of each action (every 1-2 years). Both approaches are important to enable the City to course correct should GHG target progress not be as expected.

The City recognizes the significance of providing an internal organizational structure to elevate and implement the identified CAAP actions. A multi-faceted, multi-disciplinary approach by municipal and community organizations, and individuals will be required to attain interim GHG reduction targets by 2030 and community carbon neutrality by 2040. The City Manager is completing plans to house sustainability leadership functions in the City Manager's Office to facilitate interdepartmental direction and coordination to meet the City's CAAP goals. Once climate action and adaptation measures are adopted, the City team will work closely with regional partners and jurisdictions on implementation and monitoring. Additionally, the City will collaborate with community-based organizations and other City partners to implement community outreach, education and awareness of climate actions.

COLLABORATION AND PARTNERSHIPS

Regional cooperation, collaboration, and partnerships are crucial for real and measurable responses to climate change. The City is actively engaging in many collaborative efforts, and will continue to prioritize and leverage the benefits of working together, such as with other Sacramento-area government agencies, non-profits, and community-based organizations.

Discussions of CAAP action implementation indicate partnerships in many places, such as the City and County of Sacramento, Valley Clean Energy, Yolo-Solano Air Quality Management District, Unitrans and Yolo County Transportation District, etc. The City also works closely with non-profits and community-based organizations, with active memoranda of understanding (MOUs), and ongoing grant implementation work with Tree Davis, Cool Davis and others.

The City has a well-established partnership with the University of California, Davis (UC Davis) in many areas of operations, research, and implementation. The recent award-winning 'Healthy Davis Together' work on addressing the COVID-19 pandemic is widely acknowledged as ground-breaking. Efforts between the City and campus on achieving climate change goals are also noteworthy and are continuing to be developed and expanded.

Potential partnerships are not limited to those identified here. As actions are further developed, collaboration opportunities will be considered and prioritized, including cooperatively seeding funding, developing agreements or MOUs, or other approaches.

CHAPTER 1.



Introduction

Climate Action and Adaptation Plan (CAAP) Purpose

The City of Davis (City) 2020–2040 Climate Action and Adaptation Plan (CAAP) illuminates the City’s commitment to reduce greenhouse gas (GHG) emissions and protect public safety consistent with state goals and guidance concerning climate change. The CAAP identifies GHG mitigation and climate adaptation strategies that align with the City’s goals and priorities.

The CAAP builds on the City’s history of commitment to climate change action and adaptation. In 2008, the Davis City Council adopted GHG emission reduction targets, with minimum targets consistent with then-current guidelines from the State of California and desired targets for deeper reduction. These more ambitious targets included a goal of carbon neutrality in community and City operations by 2050. In 2010, the City of Davis adopted a CAAP outlining strategies by which to achieve these targets (“Davis Climate Action and Adaptation Plan” 2010). In 2019, the City Council adopted a resolution declaring a climate emergency in response to future and current climate impacts, including increases in extreme heat, drought, tree mortality, wildfire and flooding (“Resolution Declaring a Climate Emergency and Proposing Mobilization Efforts to Restore a Safe Climate” 2019). The 2019 resolution accelerated the previous 2050 carbon neutrality goal to a 2040 target year.

As part of this CAAP development, Implementation Roadmaps (Appendix A) were developed to detail steps for robust execution of each CAAP action including milestones, timelines, and performance tracking metrics. Appendix A is included at the end of this document. The following additional appendices are included as a separate document. To support implementation of CAAP actions, a section on funding and financing tools is provided (Appendix B), including specific local, state, and federal grants, bonds and loans and existing consumer incentive programs. A Climate Change Vulnerability Assessment (Appendix C) was conducted to identify climate hazards that may affect residents, assets, and businesses, and to recognize the populations and critical infrastructure that are vulnerable to those hazards. Additionally, a GHG emissions inventory (Section 4.2 and Appendix D) was conducted to identify and categorize sources of GHG emissions from community activities. Together, the vulnerability assessment and GHG emissions inventory informed the development of actions to best advance the City’s GHG emission reduction and climate adaptation goals.

Building on these and other City climate commitments, the CAAP provides updated strategies to address climate risk consistent with state recommendations and regulatory requirements, including 14 CCR § 15183.5 (2010) and Government Code § 65302 (2022).

CAAP Relationship to Other City and Regional Plans/Programs and State Regulation

CITY PLANS

The CAAP recommendations and commitments support many of the City's goals, policies and programs as outlined in other plans adopted by the City, including the General Plan, Specific Plans and other requirements and approaches pertaining to transportation, energy efficiency, waste, stormwater, water management and urban forestry, among other areas. Additionally, this CAAP aligns with the overarching goal in the City's first CAAP, adopted in 2010, to reduce GHG emissions across different sectors. While the 2020–2040 CAAP represents a separate plan with new targets and updated GHG emissions analysis, the development process of the 2020–2040 CAAP took into consideration climate actions undertaken since 2010 and incorporated these actions into the new plan, where applicable.

The City's General Plan was initially adopted in 2001 and updated through 2016, with another update to be completed before 2025 (City of Davis 2007). These areas of alignment, as of December 2022, are summarized below and in [Table 1](#).

The **2013 General Plan Transportation Element** established the vision that Davis residents would be able to travel safely and conveniently “in an environmentally and economically sustainable manner” (City of Davis 2013). The Transportation Element outlines several policies in service of this vision that are closely aligned with the goals established by the City in the CAAP. The Transportation Element sets objectives related to GHG emission reduction, including goals to reduce carbon emissions from the transportation sector by increasing the share of trips conducted by bicycle, strengthening coordination among regional transit agencies, adjusting parking management and incentivizing electric vehicle (EV) use. These objectives are closely aligned with goals established in the CAAP around reducing single-occupant fossil fuel vehicle use and boosting active mobility, transit service and EV use. Overall, many CAAP actions strongly amplify and support the goals and policies of the General Plan Transportation Element.

The **2021–2029 Housing Element Update to the General Plan** was adopted by the City Council on August 31, 2021 but is not currently certified as of December 2022. The plan describes a number of goals, policies and corresponding action items that are closely aligned with actions recommended under the CAAP (City of

Davis 2021). The Housing Element addresses the need for affordable housing and recommends evaluating avenues to increase density in Davis and siting multi-family complexes to be transit accessible, objectives that are supported by goals established in the CAAP around local housing development. The Housing Element also encourages incentives for building retrofits and addresses solar installation requirements which are supported by goals in the CAAP concerning building decarbonization. Finally, the Housing Element touches on the need for shade trees and energy-efficient landscaping, an objective that is carried forward by CAAP actions in the goal area of creating a cooler city with more urban forest and green space for people and habitat.

As of December 2022, the Draft Environmental Impact Report (DEIR) for the Draft **Downtown Davis Specific Plan (DDSP) and Form Based Code** has completed the 60-day public review period. Many of the DDSP goals and identified actions align with goals and actions in this CAAP. The proposed project will guide long-term development in Downtown Davis. The Administrative Draft DDSP sets objectives for the downtown area, including developing a framework for carbon neutrality, equitable access, water efficiency, waste reduction, and resilience by 2040; creating a compact, mixed-

use community designed to support active modes of transportation and sustainability; providing a variety of housing options at all levels of affordability near jobs, facilities, services, and destinations where most daily needs can be met without a car; creating green, active, and inclusive public spaces to support the health of the public and the environment; and creating a sense of place that balances new development with historic character.

The CAAP aligns with the tree planting and preservation goals of the **2002 Community Forest Management Plan** (City of Davis 2002). An update to the Urban Forest Management Plan is anticipated for City Council approval by March 2023. Additionally, a **Parks Management Maintenance Plan** is envisioned but plan development has not begun as of December 2022. The **Open Space 2030 Strategic Plan** (City of Davis 2018) supports the City's land conservation vision and sustained efforts to protect, maintain and enhance farmlands and habitat areas surrounding the community. The major goals of the program include 1) securing long-term protection of open space lands around Davis; 2) providing and improving long-term management and monitoring of City-owned open spaces; 3) promoting and supporting the enjoyment of public open space lands; 4) engaging citizens in planning and caring for open space areas; and 5) nurturing productive partnerships with other organizations to achieve the above goals.

The City's **2020 Urban Water Management Plan** (UWMP) references the 2010 CAAP objective to reduce water use by 10% below 2010 levels, a goal that the City achieved in 2019 and 2020 (Brown and Caldwell 2021). The UWMP also notes the importance of water conservation to reduce energy use and increase resilience to future climate conditions, which the UWMP reports are predicted to be increasingly variable in Davis. These goals are supported by the CAAP which outlines incentives to support low-water landscaping.

The CAAP identifies the importance of **stormwater management** through green stormwater infrastructure. While green infrastructure is not explicitly addressed in a specific City plan, the City's National Pollutant Discharge Elimination System (NPDES) permit, required for the operations of the municipal

stormwater system, requires properties meeting specific criteria to install stormwater treatment and attenuation facilities, also known as low impact development (LID) in the City. These facilities are typically designed to capture and retain a portion of storm flows, and enable them to filter through a landscape, be used as an alternative water supply, or infiltrate into the ground. For those properties that do not fall into the LID requirements, the City will provide outreach and information to encourage the installation of stormwater treatment facilities to further expand the use of green stormwater infrastructure. The City will also undertake improvements to natural water infiltration in public infrastructure.

The **2018 Yolo County Multi-Jurisdictional Hazard Mitigation Plan** outlines a number of hazard mitigation projects, many already underway, that align with recommended actions of the CAAP (Yolo County 2018). Multiple hazard mitigation projects – including several in Davis – address flood risk, corresponding to the CAAP goal of protecting public health against flood risk. Many other projects and programs are closely aligned with CAAP goals concerning single-occupant fossil fuel vehicle use, building electrification, renewable energy use, water resilience, low-water landscapes, and shelter planning for hazard events.

In 2018, City of Davis was a lead agency in developing the locally governed community choice energy utility, Valley Clean Energy Alliance (VCE), with a mission to provide clean electricity, product choice, and greenhouse gas emission reductions at competitive prices. VCE, a not-for-profit public agency, is the official electricity provider for residential and commercial customers in the cities of Davis, Winters and Woodland, and unincorporated Yolo County. VCE keeps local program control and revenues, creates jobs, builds local clean energy installations, reinvests dollars to boost the local economy and furthers a clean energy future.

In 2020, the Yolo County Board of Supervisors voted to create a new County Climate Action Plan (CAP) (Yolo County Board of Supervisors 2021). The actions recommended in this CAAP are supportive of the forthcoming County CAP, and these two efforts aim to achieve regional collaboration.

These and other regional planning efforts highlight the synergies between the objectives established in the CAAP and existing adopted goals to protect public safety and address risk. Finally, the CAAP aligns with the intention set out in the City Council’s 2019 resolution declaring a climate emergency, which affirmed the City’s commitment to climate action and environmental justice.

Table 1. Alignment between Existing City Plans/Programs and CAAP Goals

CAAP GOAL	2013 General Plan Transportation Element	2013-2021 Housing Element Update to the General Plan	2002 Community Forest Management Plan	2018 Open Space 2030 Strategic Plan	2020 Urban Water Management Plan	Residential Energy Efficiency Reach Code	2018 Yolo County Multi-Jurisdictional Hazard Mitigation Plan	Davis Downtown Specific Plan (in progress)
Transition to high-efficiency, zero-carbon homes and buildings		•				•	•	•
Expand local renewable energy development and storage		•				•	•	
Adopt zero-emission vehicles and equipment	•					•	•	
Increase opportunities for active mobility	•							•
Strengthen transit service within Davis and between regional neighbors	•							•
Reduce single-occupant vehicle use	•						•	•
Expand opportunities for local housing development to balance local employment opportunities		•						•
Conserve water in our buildings and landscapes				•	•		•	•
Create a cooler city with more urban forest and green space for people and habitat		•	•	•				
Protect public health and safety from extreme heat and wildfire smoke							•	
Protect public health, safety, and infrastructure against damage and disruption from flooding					•		•	
Prepare and respond to climate hazards to ensure that the City is equipped to address current and future challenges							•	
Demonstrate climate leadership through innovation, education, and investment						•		•
Reduce waste generation and increase diversion away from landfills**								•

**As of December 2022, plans are well underway to implement City of Davis programs to address implementation of Senate Bill 1383, California’s Short-Lived Climate Pollutant Reduction Strategy, related to organic waste recycling and surplus food recovery.

CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

California Environmental Quality Act (CEQA) Section 15183.5 offers local governments an opportunity to streamline subsequent CEQA review processes by creating a GHG emissions reduction plan which may be used for later CEQA review of plans and projects consistent with the GHG reduction strategies in this plan (*Tiering and Streamlining the Analysis of Greenhouse Gas Emissions* 2010). In compliance with Section 15183.5, the CAAP addresses the six necessary Plan Elements as defined in California law:

- Quantify greenhouse gas emissions, both existing and projected over a specified time period, resulting from activities within a defined geographic area.
- Establish a level, based on substantial evidence, below which the contribution to greenhouse gas emissions from activities covered by the plan would not be cumulatively considerable.
- Identify and analyze the greenhouse gas emissions resulting from specific actions or categories of actions anticipated within the geographic area.
- Specify measures or a group of measures, including performance standards, that substantial evidence demonstrates, if implemented on a project-by-project basis, would collectively achieve the specified emissions level.
- Establish a mechanism to monitor the plan's progress toward achieving the level and to require amendment if the plan is not achieving specified levels.
- Be adopted in a public process following environmental review.

SENATE BILL 379 AND CALIFORNIA GOVERNMENT CODE 65302

California Senate Bill 379 (2015) amended Government Code Section 65302 to require cities to adopt comprehensive, long-term general plans that address environmental risks (*General Plan 2022*). The CAAP addresses the following areas in compliance with Section 65302:

- **Vulnerability Assessment [Government Code Section 65302(g)(4)(A)]:**
Create a vulnerability assessment that identifies both the risks posed by climate change, including flood and wildfire, and the geographic areas at risk.
- **Goals, Policies and Objectives [Government Code Section 65302(g)(4)(B)]:**
Create adaptation and resilience goals, policies, and objectives based on this vulnerability assessment.
- **Climate Change – Feasible Mitigation [Government Code Section 65302(g)[4](C)]:**
Create a set of feasible implementation measures designed to carry out these goals, policies and objectives.

CHAPTER 2.



Plan Development and Community Engagement

Community Engagement Summary

Community engagement and environmental justice were integral components of developing the CAAP to address climate vulnerability and attain carbon neutrality by 2040. As stated in the March 2019 *Resolution of the Council Declaring a Climate Emergency and Proposing Mobilization Efforts to Restore a Safe Climate*:

“the City of Davis affirms the need for the understanding, participation and support of the entire Davis community...in response to the climate emergency; the City therefore commits to providing outreach, information and education for Davis residents and City staff on the urgency of climate responses, reduction of greenhouse gas emissions, the policies and strategies to advance sustainability and resilience”; and

“the City of Davis recognizes community environmental justice and commits to keeping the considerations of disadvantaged communities central to the...planning processes, and to invite and encourage these communities to directly advocate for their specific needs and equity in the environmental justice process.”

The CAAP project engagement framework, guiding the CAAP update, incorporated three main components of input and expertise in developing actions for community carbon neutrality by 2040: 1) internal City team, 2) external Technical Advisory Committee (TAC), and 3) the significant role of community engagement. This section primarily addresses the input and results from the community engagement.

1.

The **internal City team** included the CAAP project management team (Project Director and Project Manager), an interdepartmental City staff team with representatives from each City department and relevant staff liaisons to City Commissions. The City Council was considered part of this team, with the Natural Resources Commission (NRC) as lead CAAP advisory body to the Council. All City Commissions were invited to appoint a CAAP NRC liaison to receive monthly CAAP project updates and participate in NRC discussions. The NRC has included a CAAP update on the regular agenda or had a Special CAAP Meeting 24 times between January 2021 and December 2022.

2.

The **Technical Advisory Committee (TAC)** included local and university experts representing areas of expertise and knowledge related to climate action planning, community engagement, transportation, energy and other sectors, with the goal of providing technical assistance to the City team. The list of TAC members and their area of research/expertise, the proposed meetings and topics, and other information have been included on the City’s CAAP webpage since the TAC was formed in February 2021. TAC roles included providing feedback/insight on CAAP project milestones, expertise on technical topics within the Davis context, input on high-level strategies and how to implement deep carbon reduction actions. The TAC did not have decision-making responsibilities so Brown Act requirements regarding TAC meetings did not apply. The CAAP project engagement framework was specifically established to provide ample opportunity for these other significant stakeholders to fully participate and provide expertise. The TAC met seven times between February 2021 and December 2022.

3.

The **Community** was a primary contributor and focus of the Davis CAAP engagement approach and will be integral to successful plan implementation once the CAAP is adopted. Since the CAAP development occurred during “in-person meeting” limitations imposed by the COVID-19 pandemic, every effort was made to engage community members remotely and to meet in-person when possible. Workshops, pop-up meetings, online surveys and a community forum website conducted between April and November 2021 are described in more detail in the following sections. The ad hoc “Equity and Inclusion Workgroup” met twice early in the process, and individuals also provided insight to the project management team throughout action development. A dedicated page on the City’s website provided information and links to all CAAP actions and meetings. To implement effective outreach, the project management team used resources of the City’s communications team, press releases, lawn signs, social media and internal and external stakeholder and working groups, including the Healthy Davis Together network, the City’s Greener Davis monthly newsletter, UC Davis partnerships and support from community-based organizations such as Cool Davis.

Figure 1. City of Davis CAAP Engagement Framework



WORKSHOPS

2.1.1.1 Workshop #1—April 22, 2021

The first workshop was designed as an introductory CAAP conversation to help the community understand why Davis is undertaking this plan, learn more about actions that can be taken to reduce community carbon footprint and prepare for extreme events, provide input, and share ideas to shape climate actions and learn about additional opportunities for participation. The two-hour workshop conducted via Zoom meeting on Earth Day 2021 included an additional hour for open discussion. Overall, there were 106 people in attendance.

The workshop presented information on Davis' GHG emissions inventory and forecasts and an overview of the completed Vulnerability Assessment to understand Davis' climate threats. This was interspersed with opportunities for clarifying questions and discussion about the primary CAAP benefits of GHG reduction and addressing climate risks. Two breakout sessions included a small group discussion with a facilitator, notetaker and 8-12 community members participating. The project management team used the information gathered at the workshop to identify key concerns, action ideas and extra or "co-benefits" of interest to community members. The top three co-benefits were:

- air quality and public health,
- environmental stewardship, and
- racial equity and social justice.

Potential feasibility issues for CAAP implementation were identified as:

- City authority to implement action,
- public support, and
- additional capital required to implement action.

2.1.1.2 Workshop #1A— May 27, 2021

Based on input from the ad hoc Equity and Inclusion Working Group formed specifically to provide input on addressing the needs of vulnerable populations, an additional introductory workshop specifically addressing Community Resilience and Equity was added to the schedule, with a date to coincide with World Day for Cultural Diversity, recognized in Davis through a City Council proclamation. The meeting goals were to listen to "lived life experience" of community members impacted by climate change, learn from each other about these impacts, and begin to discuss how climate action implementation can address equity and inclusion in the Davis context in an implementable, measurable, and enforceable "roadmap" to community carbon neutrality by 2040. The Zoom workshop included 65 participants.

Two panel discussions were presented at the workshop. The first panel was moderated by Davis Mayor Gloria Partida, with the purpose of sharing personal experiences related to youth, agricultural workers, renter/affordable housing, and indigenous perspectives. Three community members included an elementary school student, a small farm owner and a Davis mother, educator, youth, and community organizer. The second panel, moderated by Jonathan London, Faculty Director, UC Davis Center for Regional Change, targeted providing a vision for how to incorporate community resilience and equity in the CAAP. Three panelists represented advocacy specific to youth/college age, families, mental health, immigrants, gender, race, Spanish-speaking and other equity issues, and included a UC Davis undergraduate Sunrise Movement member, co-founder of ApoYolo, and a representative of Mothers Out Front and Maestra of traditional Aztec dance group Calpulli Tlayotl.

Interspersed throughout the workshop, community participants were asked to respond to four polling questions related to community and regional efforts, public health and the environment, infrastructure and buildings and transportation. A summary of the key takeaway from the workshop was made by one of the panelists, "resource extraction processes that are most responsible for climate crisis are not created by marginalized communities, but marginalized communities inherently suffer the most."

There was basic agreement that a significant class divide exists in Davis and must be addressed when developing CAAP actions and implementation. Specific suggestions included the need to re-center programming and policy advocacy towards achieving equity. For example, universal design can be used as a model for resilience strategies related to access, affordability, focus on underserved communities, reaching people where they are and opening leadership and program design opportunities. In response to both the *Climate Emergency Resolution* and this workshop's input, during the action evaluation and prioritization process, Racial Equity and Social Justice was weighted at double the value of other co-benefits and feasibility criteria to ensure that equity is centered within the CAAP.

2.1.1.3 Workshops #2A and B; #3A and B—July 14, 16, 28 and 30, 2021

Four Zoom workshops in July 2021 focused on identifying potential actions using community discussion and Mural, an online interactive collaboration tool. Participants recorded ideas directly into the virtual forum using prompts for approaches to GHG reduction and addressing climate risk. Verbal comments and responses in the "Chat" feature were also added by facilitators for those uncomfortable with, or unable to use, the technology. Additionally, the Mural boards were available for more comments and review for a month following the workshops.

The topic of the first two workshops, "Mobility and Public Spaces," included actions related to reducing use of all cars; increasing opportunities and incentives for using electric vehicles, transit, and active transportation—buses, trains, biking, walking, and rolling; design of streets and sidewalks; and plants, urban forest, parks, open space, and habitat. The second set of workshops focused on "Buildings, Waste and Water" and included actions related to increasing energy efficiency, green infrastructure; renewable energy and battery storage, electrifying buildings (to reduce natural gas use); waste reduction, reuse, recycling, and composting; and water conservation and other issues.

2.1.1.4 Workshop #4—November 10, 2021

The November workshop received community responses to the draft prioritized actions and clarified any community questions about actions. With all the proposed actions presented, the discussion included identifying actions with community support and/or least preferred actions and additional actions that should be elevated to priority status. The entire workshop was conducted with the whole group of participants, rather than in breakout groups, so all could participate fully and hear community discussion.

"POP-UP" MEETINGS AND SMALL GROUP DISCUSSIONS

Specific interest groups were prioritized for engagement through pop-up meetings and discussions to meet key community groups "where they are." These included five events at Davis Farmers Market, presentations to community partners such as the Cool Davis Coalition, Davis Electric Vehicle Association and Davis Chamber of Commerce, talking with seniors at Rancho Yolo, meeting with college students at UC Davis, among other meetings. Results of these conversations were incorporated into the action development and prioritization process.

ONLINE SURVEYS

Two online surveys, available during May 2021 and July–August 2021, reflected information and sought input that was similar to workshop content. The first online survey was available in English and Spanish, had 238 responses, provided significant background and introductory information, and identified outreach gaps, such as low response by college students and renters, which was then addressed more fully in subsequent outreach to target participation by these groups. An example survey question asked about important co-benefits beyond carbon reduction and minimizing climate risk. Community members identified improving air quality and environmental stewardship as key values. Other values ranked highly were parks, open space and habitat, water conservation, waste reduction and public health improvements.

The second survey, with 112 responses, addressed community preferences for the draft prioritized actions. There was strong support for increasing affordable housing and addressing the relationship between land use and transportation, providing free transit with increased routes/ frequency and a regional express service, incentivizing rental energy efficiency and air filtration, expanding the urban forest and increasing shade to reduce urban heat island impacts, investing in community solar energy and food recovery and distribution.

OTHER COMMUNITY OUTREACH AND COMMUNITY FORUM

Additional information was provided through other public outreach, including the City's CAAP website, social media, press release channels and monthly progress staff reports to all City Commissions. Monthly public meetings were provided through a regular CAAP item on each NRC agenda since February 2021, allowing for incremental and regular CAAP community engagement. Also, a dedicated CAAP email linked on the website allowed access to the project management team. An online community forum, open from August 2021 to February 2022, gained further input by identifying all prioritized actions with an opportunity to comment and see posts from other community members. Through these avenues, the project management team was able to be responsive to community suggestions, information requests and adjust products and schedules in response to public input, all indicative of the importance of the community-based approach in developing the CAAP update.

COST-EFFECTIVENESS ANALYSIS

The 28 proposed prioritized CAAP actions were presented to City Council in December 2021. At that time, City Council requested further analysis on each of these actions for cost effectiveness analysis and GHG reduction potential. The results were presented to, and approved, by City Council in May 2022.

The cost-effectiveness analysis evaluated the cost per metric ton of GHG emission reductions resulting from each action, following the methodology used by CARB in their Scoping Plan. The cost-effectiveness analysis was a decision support tool that assessed the relative impacts of the prioritized actions.

The cost-effectiveness analysis included all costs and savings associated with each action, regardless of who pays or benefits (e.g., public agencies, businesses, consumers, and other stakeholders). Specific costs analyzed include upfront or capital expenditures, and operations and maintenance costs. Savings included in the analysis are energy savings in the target year (2030 or 2040), and savings incurred by avoiding all non-energy business-as-usual costs in the target year, such as maintenance costs. All costs and savings were annualized to the target year (e.g., 2030) to illustrate the estimated net costs per metric ton of GHG emission reductions in the target year. The analysis did not consider cumulative costs, or the climate and health benefits associated with GHG reduction measures. It highlighted the correlation between higher costs associated with implementing actions and higher GHG emission reductions.

Action Selection, Evaluation, and Prioritization Process Summary

THE ROLE OF ACTION PRIORITIZATION

Action prioritization is a crucial step in creating a CAAP because it leads to a more implementable and impactful plan. In an ideal world, cities would be able to pursue all actions necessary to achieve carbon neutrality and climate resilience simultaneously, but cities have limited resources and competing needs. When City and community priorities are factored into action selection, the City is more likely to meet its objectives around GHG emissions reduction and climate adaptation goals. Since implementation of actions can result in co-benefits that may not be accounted for in a typical GHG emissions reduction or climate risk analysis, it is useful to assess the additional or indirect impact an action may have. In conducting a CAAP action assessment, establishing evaluation criteria can help select actions that align with City priorities. Additional details on the action selection, evaluation and prioritization process are in Appendix E.

The City of Davis received more than 900 comments during its public outreach process, including many CAAP action ideas. The community comments were consolidated into 95 potential actions that were evaluated using the Action Selection and Prioritization (ASAP) Tool (a freely available tool created by the C40 Cities Climate Leadership Group for city climate action planning). Many of the suggested action ideas relating to outreach, education, and advocacy were not included in the ASAP evaluation process because, while the efforts might enhance or supplement an action, they would not directly result in significant GHG emissions or climate risk reductions. However, those ideas relevant to specific CAAP actions are incorporated into Appendix A: Implementation Roadmaps, as part of the Outreach and Education Opportunities or in other sections of the Roadmaps.

Ideas provided during the community outreach process are considered potential engagement ideas that the City can use to support CAAP implementation. Some of the outreach and education opportunities to be explored included:

- Create a placemaking committee to address local ways to reduce GHG emissions and illustrate these approaches in unique and innovative ways in Davis
- Create an equity committee to address actionable ways to enhance climate justice in Davis
- Promote more community art events to educate on climate issues
- Utilize student community service requirements from elementary through high school and through partnerships with relevant UC Davis programs
- Work with students, teachers, Parent-Teacher Associations, City staff, local businesses, and others to provide classroom workshops for students on local sustainability actions
- Provide information about local healthy food resources
- Create a 'Sustainability Center' to highlight existing and emerging sustainable technology, provide outreach and educational opportunities, include assistance on goal implementation and economic development, and track/communicate progress
- Encourage regular neighborhood and community gatherings to increase social resilience and promote sharing of sustainable ideas and practices

ASSESSING CAAP ACTION IMPACT: THE ASAP TOOL

The ASAP tool is a decision-making framework designed to help cities weigh the competing benefits and challenges associated with different action options and was used to evaluate and prioritize Davis' potential CAAP actions. Within ASAP, actions are assessed for their primary climate benefits (i.e., GHG emissions and climate risk reduction), co-benefits (e.g., public health, environmental stewardship), and implementation feasibility (e.g., authority level, costs). The outputs of each evaluation are used to compare actions holistically. The ASAP evaluation process is valuable because it offers comparative insights among possible action options and provides a transparent method to identify a sub-set of priorities that will best achieve a community's desired outcomes.

Importantly, the ASAP tool allows users to customize evaluation criteria and tailor the prioritization process to community values. After conducting community outreach and assessing local government considerations, the project team selected three co-benefit and three feasibility evaluation criteria to reflect community priorities. The ASAP tool was then used to evaluate each action's performance on these criteria as well as the actions' GHG and climate risk reduction potential.

EVALUATION CRITERIA: PRIMARY BENEFITS, CO-BENEFITS & FEASIBILITY

The ASAP tool assigns each potential action a score that can be used to compare the primary climate benefit(s) of an action to other potential actions, as well as to allow the primary benefits to be considered in relation to the co-benefits preferred by the community and the City's feasibility considerations.

2.2.1.1 Primary Climate Benefits

The primary benefits of the CAAP are GHG emissions reduction and climate risk reduction. The ASAP tool was used to estimate each action's GHG reduction potential relative to the other actions evaluated. The resulting GHG Reduction Score was a measure of the *potential* for an action to reduce GHG emissions (but not the actions' specific GHG reduction estimates, which were developed in greater detail later in the CAAP development process). Risk reduction scores were also developed to rate each actions' ability to reduce climate risk based on the likelihood of occurrence and severity of impact related to the City's climate hazards (extreme heat, drought, wildfires/air quality and flooding).



Example of on-line "mural board" with community comments from CAAP Workshop 3A, July 28, 2021

2.2.1.2 Co-benefit Criteria

Informed by community engagement feedback, the City selected co-benefit criteria that reflect community values. Co-benefits are benefits generated by actions beyond the primary benefits of GHG emissions reduction and climate risk reduction. **Table 2** summarizes the co-benefit criteria the City selected as being the most important secondary factors to consider in the CAAP process (Air Quality & Public Health, Environmental Stewardship, Equity & Inclusion).

EVALUATION CRITERIA	DEFINITION
Air Quality and Public Health	Improve public health through reduced incidents of diseases and/or death attributed to improved air quality (indoor and outdoor), water quality, or increased physical activity.
Environmental Stewardship	Promote natural resource, environment, and/or greenspace conservation, creation, or regeneration.
Equity and Inclusion	Address an existing inequity in the community, such as disproportionate poor air quality, access to transit, energy burden, flood risk, etc.

Each potential CAAP action was rated on a qualitative ranking scale based on the degree to which implementation of the action would positively or negatively impact the co-benefit. Unless the action language specifically stated that it addresses vulnerable populations, actions were rated for their *potential* impact on Equity & Inclusion. **Table 3** outlines the definitions and scoring rubric.

RATING	SCORE	AIR QUALITY & PUBLIC HEALTH AND ENVIRONMENTAL STEWARDSHIP CO-BENEFIT IMPACT	EQUITY & INCLUSION CO-BENEFIT IMPACT
Very Positive	2	The action has a positive impact across the community	The action has a positive impact on and specifically targets vulnerable groups
Somewhat Positive	1	The action has a positive impact across a small portion of the community or a slightly positive impact across the entire community	The action has indirect positive impact on vulnerable groups
Neutral	0	The action has no impact, the impact is unknown, or the positive and negative impacts may negate each other	The action has no impact, the impact is unknown, or the positive and negative impacts may negate each other
Somewhat Negative	-1	The action has a negative impact across a small portion of the community or a slightly negative impact across the entire community	The action has a negative impact on vulnerable groups
Very Negative	-2	The action has a negative impact across the community	The action has a large and disproportionate negative impact on vulnerable groups compared to non-vulnerable groups

2.2.1.3 Feasibility Criteria

Feasibility criteria suggest how easy or difficult it will be to implement a particular CAAP action. Assessing action feasibility provides important context for decision-makers as they contemplate things like optimal launch timing, the need to pursue funding, and gauging staff capacity. These feasibility criteria will influence the likelihood of successful implementation. **Table 4** summarizes the scoring rubric used to rate the three feasibility criteria selected by the City (City Authority, Capital Cost, Public Support).

Table 4. Feasibility Criteria Scoring Rubric			
EVALUATION CRITERIA	DEFINITION	RATING GUIDE	SCORE
City Authority¹	Does the City have the legal authority to implement this action, or would it need to be implemented by another entity, such as the national government, a utility or agency outside of the city, or the private sector?	Yes, under existing policy	2
		Yes, but would require new policy	1
		No, joint authority	-1
		No, outside City authority	-2
Additional Capital Required to Implement	Beyond any funding that is currently secured or identified, how much additional capital would be required to implement the action (capital expenditure)?	No cost: \$0	2
		Very low cost: \$0-59k	1
		Some cost: \$60k-499k	0
		Large cost: \$500k-999k	-1
		Very large cost: >\$1mil	-2
Public Support	Is the behavior or technology change encouraged by this action favored or disfavored based on public opinion?	Majority positive	2
		Minor positive	1
		Neutral/mixed	0
		Minor negative	-1
		Majority negative	-2

¹No zero rating was defined for this evaluation criterion

Following the initial action evaluation process, the project management team compared the ASAP results and developed a short-list of draft priorities that reflected a balance of GHG and climate risk reduction potential, co-benefits, and implementation feasibility, with actions selected for each of the primary GHG emissions sources and climate hazards in the community. Additional internal and external stakeholder review of the draft priority list resulted in the final set of prioritized CAAP actions presented in Chapter 4. Additional CAAP action ideas generated through the CAAP engagement process are also presented in Chapter 4 and can serve as a starting point for subsequent phases of action implementation when the initial set of priorities have been completed or are underway.

Administrative Draft and Final Draft CAAP

The Administrative Draft CAAP was released for a two-month public review period from August 8 to October 10, 2022. The document included 28 community-driven prioritized actions that had been reviewed and approved by City Council in May 2022 for 1) further development into the Administrative Draft CAAP document; and 2) as the 'project description' for completion of required environmental review. Following this public review period, the project management team considered and responded to community comments and incorporated appropriate changes to the document in order to be responsive to community interests and direction.

The Administrative Draft CAAP consolidated previous background information, analysis, action descriptions, and implementation approach into a single unified CAAP document, along with a set of appendices providing additional technical and implementation information. Intended to generate public review and comment, the Administrative Draft CAAP purposefully did not include all of the layout, color, photos or graphic elements that are now included in the Final CAAP. The Draft was posted on the City's website, promoted on social media, and announced in press releases throughout the review period. The City received more than 400 discrete responses to the CAAP document from the online comment portal or through email.

The most significant change to the proposed CAAP actions was incorporated soon after the close of the public review period, before further development of the Final CAAP. More than half of the comments received were related to the draft building energy action, "electrification at point of sale." Subsequently, this action was modified based on community input. On October 14, 2022, the City released a statement that the action was being changed. The main modifications were to encourage voluntary electrification of buildings; utilize extensive education and outreach materials to help property owners make informed decisions; remove the point of sale requirement; and remove the 2025 timeline for developing a point of sale ordinance. Although the changes to this action could impact attainment of the 2040 carbon neutrality target, the City decided it was most important to listen to community concerns, and to address further efforts toward phased building electrification at a later time when there is stronger community support and more decisive statewide actions on this approach.

Other responses to community comments and edits are incorporated into a Final Draft CAAP, presented to City Council for review and direction on December 6, 2022. At that time, City Council directed staff to change Building Energy action BE.1, Building electrification when permit is needed (Voluntary) to reflect a voluntary approach for compliance for at least three years, supported by education and outreach, rather than development of an ordinance for building electrification. The result of this change was that the CAAP analysis of prioritized actions does not result in attainment of minimum interim GHG reduction target of 40% below 2016 levels. However, the City will continue to assess at regular intervals between now and 2030, which may include considering changes to proposed actions or additional actions to fill the gap. While it may not be possible to provide certainty about goal attainment at this time, the CAAP structure is in place to evaluate and monitor progress, update actions and respond to community input.

CHAPTER 3.



City of Davis and Climate Change

3.1 Climate Change Vulnerability Assessment Summary

The Climate Change Vulnerability Assessment (Appendix C), conducted as part of the CAAP in accordance with California Government Code Section 65302, examined how climate change hazards will affect City of Davis assets (infrastructure and natural resources), residents, and businesses. Like much of California, the City is already experiencing impacts from extreme heat events, flooding and extreme precipitation, drought and poor air quality caused by wildfire smoke and the vulnerability assessment identified how these impacts are likely to change through mid-century and end-of-century timeframes. The projected changes expected for the main climate hazards affecting Davis include:



Extreme Heat: An increase in the number of extreme heat days (daily maximum temperature above 103.9°F) experienced annually is projected from 5 days in 2005 to 22–28 days by mid-century and 30–50 days by end-of-century. The frequency of annual heat waves is also expected to increase, from 0.2 days per year in 1976–2005 to 2.9–3.9 per year by mid-century and 4.3 to 8.4 per year by end-of-century. Extreme heat may have serious direct health related impacts, degrade air quality, and increase gradual wear and tear on infrastructure such as energy grid, building mechanical systems, roadway pavement, etc., resulting in increased maintenance costs.



Wildfire and Air Quality: Since 1950, the area burned by wildfires in California each year has increased and of the 20 largest fires in California’s history, eight have occurred since 2017. Wildfire frequency and intensity may increase as spring and summer temperatures increase and snowmelt occurs sooner. Additionally, wildfires in other areas of the state will result in periods of poor air quality in Davis. As wildfire risk continues to increase, these impacts may become more frequent and more severe annual events. Effects of exposure to wildfire smoke and particulate matter range from eye irritation to more serious health outcomes including heart failure, reduced lung function or death.



Precipitation: More intense precipitation events, delivered in a shorter wet season, are projected to increase annual precipitation from 19.7 inches to 20.6–20.8 inches by mid-century and 20.3–22.7 inches by end-of-century. Severe storms could likely increase the frequency of flooding within, as well as expand the extent of the Federal Emergency Management Agency (FEMA) flood hazard zones. Flooding could impact structures and property, including critical City facilities, local roads, and emergency services.



Drought: Changes in precipitation patterns could lead to more frequent prolonged droughts and as a result, the City’s surface water supply allocation may be reduced substantially. Drought impacts may also include diminished groundwater supplies in the region (which provides a proportion of Davis supply), invasive species issues, potential water quality issues and impacts to the regional agricultural economy and those that depend on it.

The assessment analyzed the vulnerability of assets and populations to the climate stressors affecting Davis. Vulnerability of an asset to a given climate hazard is a function of exposure (whether the asset is in an area that will be impacted), and its sensitivity (degree to which an asset may be affected if exposed). The assessment did not cover regional vulnerabilities, although regional impacts are noted where appropriate and regional collaboration is an important part of the adaptation plan. Additionally, UC Davis assets are not specifically assessed as the university is not located within the City limits.

The assessment found that populations identified by the Sacramento Area Council of Governments' (SACOG) Environmental Justice (EJ) communities index, low-income communities and those with health issues are vulnerable to all climate hazards expected to impact Davis. These communities, in addition to outdoor workers, children and the elderly, are likely to be particularly impacted by extreme heat and poor air quality associated with wildfires due to reduced access to adequate air conditioning or air filtration equipment.

The assessment identified a number of potential infrastructure impacts from extreme heat. Extreme heat events or planned safety power shutoffs could impact emergency response infrastructure if backup power is not available. Extreme heat and poor air quality events may increase air conditioner and air purifier use and increase energy demands across the PG&E service area, which could result in brownouts if energy demand exceeds supply. Additionally, extreme heat is likely to cause impacts to energy infrastructure and electric vehicle (EV) charging/gas stations due to high sensitivity of electronic components under exposure to extreme heat. Parks and open spaces are mostly likely to be impacted by extreme heat and drought, with the greatest impacts being felt in non-natural landscapes like parks, greenbelts, and agriculture without adequate irrigation; additionally, water restrictions may be in place during a drought.

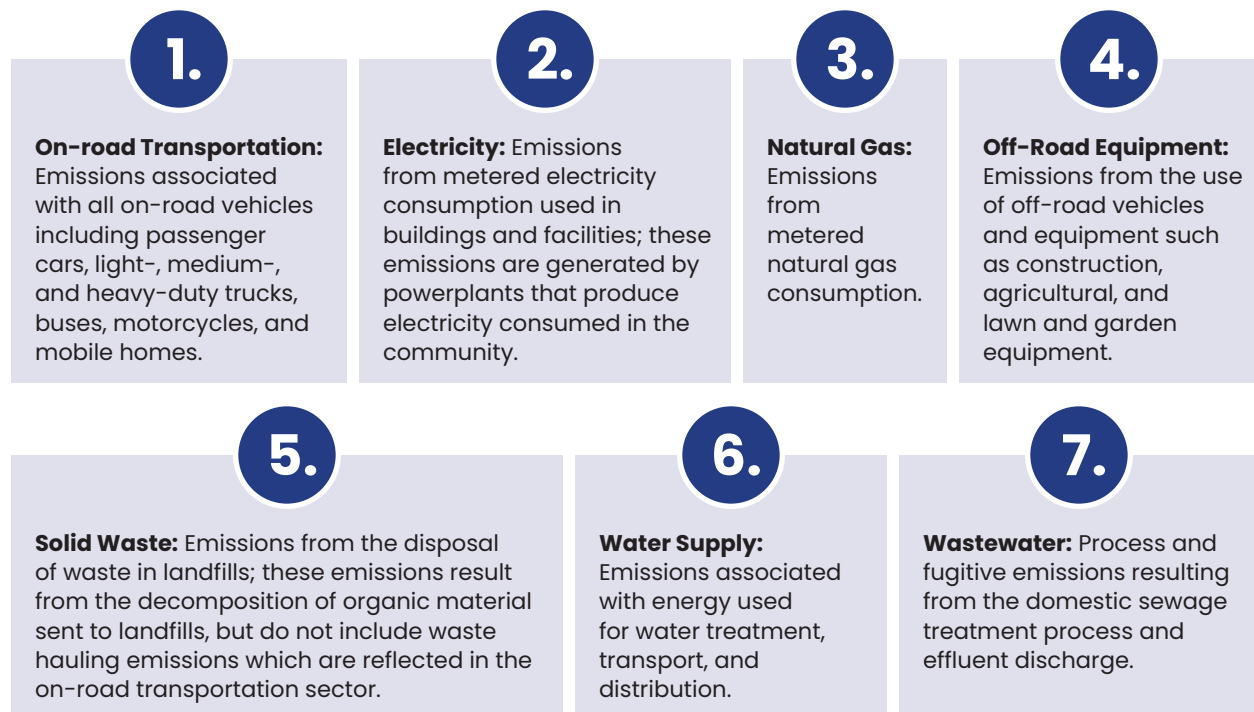
Some critical infrastructure is located within the 100-year floodplain and is vulnerable to flooding, including the Sutter Davis Hospital, potable water wells, all five of the City's stormwater pump stations, approximately one mile of Highway 113 and more than 13 miles of City streets. Additionally, flooding is likely to impact community assets such as the Davis Arts Center, two churches and two assisted living/retirement facilities. The extent of the 100-year flood plain may increase (and flood depth experienced within it) as climate change causes more intense precipitation events, increasing the vulnerability of these assets. Impacts to these assets could impede emergency response and result in major service disruption, water quality issues and flooding.

The results of the assessment informed the development of targeted adaptation strategies, presented in Section 4.2, to address these vulnerabilities.

GHG Emissions Inventory and Forecasts

BASELINE INVENTORY

A GHG inventory describes GHG emissions occurring because of community activities, like building energy use, transportation, and waste disposal. Establishing a “base year” inventory helps cities establish a benchmark against which to measure GHG reduction progress. Davis’ baseline inventory is organized into categories, or sectors, based on the source of emissions:



Davis has completed three GHG Inventories in the last two decades: inventory years 2006, 2010, and 2016. This CAAP is based on data from the 2016 GHG emissions inventory which included the Cities of Davis, Winters and Woodland and unincorporated Yolo County. This inventory, with a regional combined total as well as separate data for each jurisdiction, was prepared to promote consistency across jurisdictions and support a regional approach to climate action planning. Additionally, the inventory followed ICLEI’s *U.S. Community Protocol for Accounting and Reporting of Greenhouse Gas Emissions*. This reporting standard accounts for three of the seven Kyoto Protocol GHGs: carbon dioxide (CO₂), methane (CH₄) and nitrous oxide (N₂O). GHG quantities are reported as metric tons of CO₂ equivalents (MTCO₂e) — a universal unit of measurement that accounts for the global warming potential (GWP) when measuring and comparing GHG emissions from different gases. Individual GHGs are converted into CO₂e by multiplying them by their GWP factors. As part of this regional process, the City of Davis GHG inventory was developed using activity data provided by the City, The Climate Registry’s default emission factors and GWP factors from the Intergovernmental Panel on Climate Change’s (IPCC’s) Fifth Assessment Report.

As part of the CAAP update process, Davis' 2016 GHG inventory was revised and updated in 2020 using a different on-road transportation emissions calculation methodology that better aligns with follow-on climate action planning analysis. Vehicle miles traveled (VMT) estimates were developed using SACOG's SACSIM19 travel demand model and an origin-destination trip methodology that accounts for VMT associated with trips that have at least one trip end in the City of Davis (see Appendix D for details on the VMT and Origin-Destination Analysis memos). On-road vehicle GHG emission factors were obtained from the California Air Resources Board (CARB) Emissions Factor (EMFAC) model for Yolo County and combined with the VMT estimates to calculate the revised on-road transportation emissions, which were incorporated into the original 2016 GHG inventory to develop the final GHG inventory analyzed in the CAAP.

In 2016, the City of Davis generated 567,000 MTCO₂e. As shown in **Figure 2**, most of these emissions were generated from on-road transportation (74%). Combined with off-road equipment (4%), all transportation-related emissions represent 79% of the total. The remaining emissions came from natural gas and electricity use (15%), wastewater treatment (3%), solid waste disposal (3%), and water supply (<1%).

Figure 2. Davis 2016 GHG Inventory

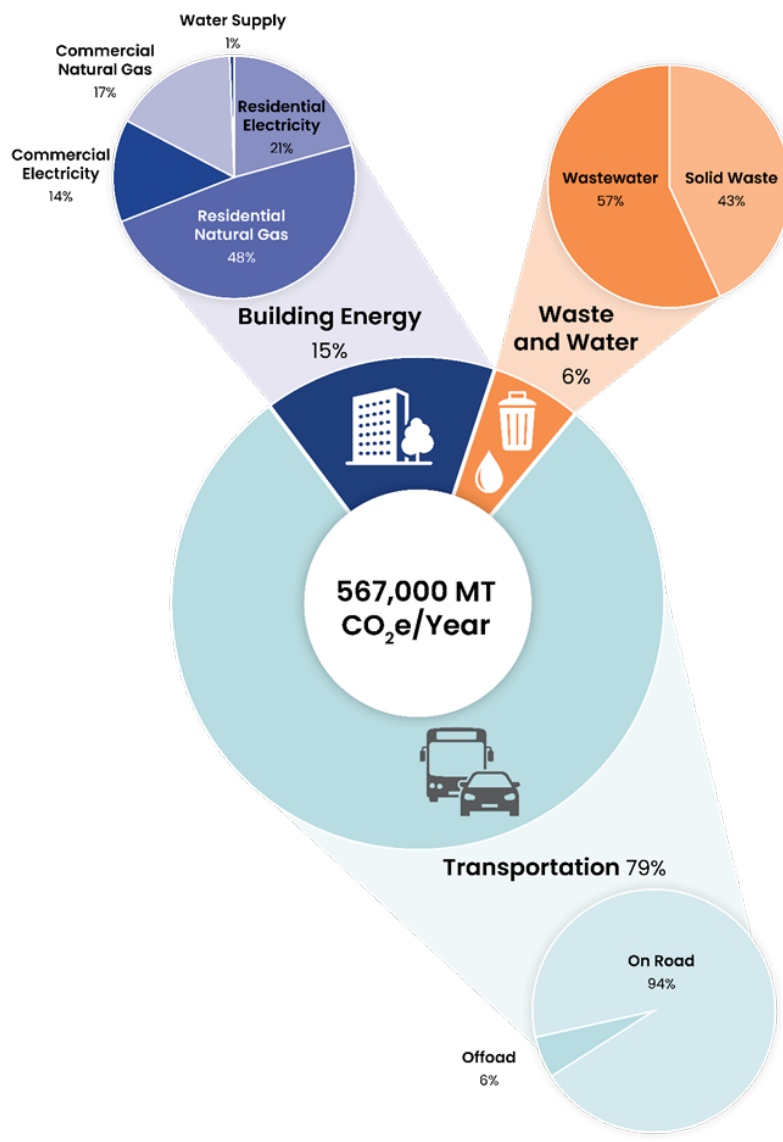


Table 5 shows the total MT CO₂e/yr by emissions sector for the 2016 inventory, and as described earlier, except for the revised on-road transportation emissions, the 2016 inventory was developed by a different team and through a separate process than the CAAP update. Appendix D provides additional details about the 2016 GHG inventory.

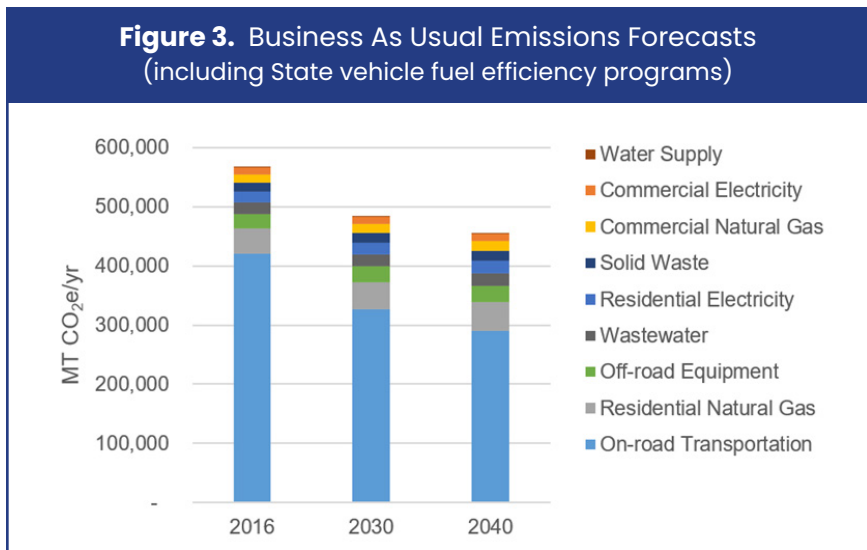
Table 5. Davis 2016 Activity Data and Emissions		
EMISSIONS SECTOR	EMISSIONS (MT CO ₂ e)	COMMUNITY-WIDE TOTAL
Residential Electricity	18,005	3%
Residential Natural Gas	42,003	7%
Commercial Electricity	11,891	2%
Commercial Natural Gas	14,505	3%
On-Road Transportation	421,357	74%
Off-Road Equipment	24,825	4%
Solid Waste	14,609	3%
Water Supply	518	<1%
Wastewater	19,286	3%
TOTAL	567,000	100%

GHG FORECASTS

Emissions forecasts can help cities understand how emissions may change over time in relation to GHG reduction targets. They also provide insight on the scale and source of reductions necessary to achieve GHG targets. Emissions forecasts can reflect implementation of applicable federal, State, and local actions as well as anticipated growth in the City’s population, employment, vehicle travel and other factors.

Davis’ 2016 baseline inventory was used to develop 2030 and 2040 “business-as-usual” (BAU) forecasts to align with the City’s GHG reduction target years. These forecasts reflect how emissions would change over time in the absence of any further local climate action. For GHG reduction planning purposes, the forecasts incorporate the GHG reductions expected to occur in the on-road transportation sector from the state implementing its own vehicle fuel efficiency programs. However, other impactful statewide actions, such as the Renewables Portfolio Standard (RPS) to increase carbon-free electricity sources and Senate Bill 1383 to divert organic waste away from landfills, are not included in the GHG emissions forecasts due to their overlap with CAAP actions presented in Chapter 4. Emissions for each source were forecast using different growth indicators and regional or state forecasting/planning data, such as local and regional population and employment growth and future vehicle travel demand (see Appendix D).

Compared to 2016 levels, the forecasts estimate that emissions will decrease 15% by 2030 and 20% by 2040 (see **Figure 3**). The estimated reductions occur in the on-road transportation sector. Even though vehicle travel is projected to increase from 2016 to 2040, transportation emissions factors are projected to decrease over time due to implementation of the state’s vehicle fuel efficiency standards as mentioned earlier.



GHG Reduction Targets

GHG targets help set a community's course for climate action. In California, many communities develop plans to be consistent with the state's adopted GHG targets, including Senate Bill 32 that sets a near-term emissions target of 40% below 1990 levels by 2030. The state also has two unofficial long-term GHG targets established through Executive Orders. The first was established by former Governor Schwarzenegger in Executive Order S-3-05 and set an emissions target for 80% below 1990 levels by 2050. The second was established by former Governor Brown in Executive Order B-55-18 calling for an accelerated and more ambitious target to reach statewide carbon neutrality by 2045. The CAAP update was developed to analyze target achievement pathways for local 2030 and 2040 GHG targets as defined in the following sections. The CAAP update process established both a minimum GHG reduction target based on SB 32, as well as an aspirational target in line with per capita efficiency targets established in the 2017 Scoping Plan.

2030 INTERIM TARGETS

For purposes of the CAAP analysis, the City of Davis has established a minimum 2030 GHG target and an aspirational 2030 GHG target. Both targets were selected in a manner consistent with CEQA Guidelines Section 15183.5(b)(1)(B) to demonstrate the community's fair share contribution toward statewide GHG reduction targets and support future project CEQA streamlining as described in Section 2.2.2.

3.3.1.1 Minimum 2030 GHG Target

At a minimum, Davis will attempt to reduce its GHG emissions **40% below 2016 levels by 2030**. This target mimics the State's GHG target set in SB 32 to achieve GHG reductions of 40% below 1990 levels by 2030. As with most local governments, the City of Davis does not have a 1990 GHG inventory. However, in 2016, California's GHG emissions returned to 1990 levels, which the CAAP analysis uses as a proxy for when local governments statewide also returned to their 1990 GHG emissions levels. Achieving this minimum target will require the city to reduce GHG emissions by 143,692 MT CO₂e/yr below the 2030 forecast levels.

3.3.1.2 Aspirational 2030 GHG Target

Following guidance to local governments provided in *California's 2017 Climate Change Scoping Plan* (2017 Scoping Plan), which was available at the time of CAAP development, and the Office of Planning and Research (OPR) General Plan Guidelines, the City defined an aspirational 2030 GHG target that is also consistent with the state's 2030 target (OPR 2017; CARB 2017). The updated 2022 Scoping Plan, available at time of CAAP adoption, will be used for subsequent CAAP updates.

The 2017 Scoping Plan recommends "local governments evaluate and adopt robust and quantitative locally-appropriate goals that align with the statewide per capita targets" and that "emissions inventories and reduction goals should be expressed in mass emissions, per capita emissions, and service population emissions." Further, the 2017 Scoping Plan says that local governments should develop a communitywide GHG emissions target consistent with the accepted protocols as outlined in OPR's General Plan Guidelines, which also recommend choosing multiple target years and analyzing both mass emissions and emissions intensity to support a fuller understanding on the issue.

From a statewide perspective, the 2017 Scoping Plan identified a 2030 emissions intensity target of 6.0 tons per capita per year, which is based on the full statewide GHG inventory, the SB 32 GHG reduction target for 2030, and statewide population forecasts developed by the California Department of Finance. Following the 2017 Scoping Plan guidance to local governments, the City derived its own locally-appropriate per capita GHG target. This target-setting process compared the GHG emissions evaluated

in the community GHG inventory and those included in the statewide inventories. Davis does not include all statewide emissions sources in its local GHG inventory, so the CAAP's actions are only designed to address a sub-set of statewide emissions. Therefore, Davis' local GHG emissions intensity target is lower than the overall statewide per capita target to reflect the emissions sources over which the City can exert influence (see Appendix F for GHG Target Options Memo).

Davis' 2030 GHG target is **5.2 MT CO₂e/capita/yr**. This represents a 57% emissions intensity reduction from 2016 levels of 12.0 MT CO₂e/capita. This is also equal to an absolute GHG target of 266,883 MT₂e/yr in 2030 based on the population forecasts used in the GHG emissions forecasts, and would require reductions of 217,008 MT CO₂e/yr.

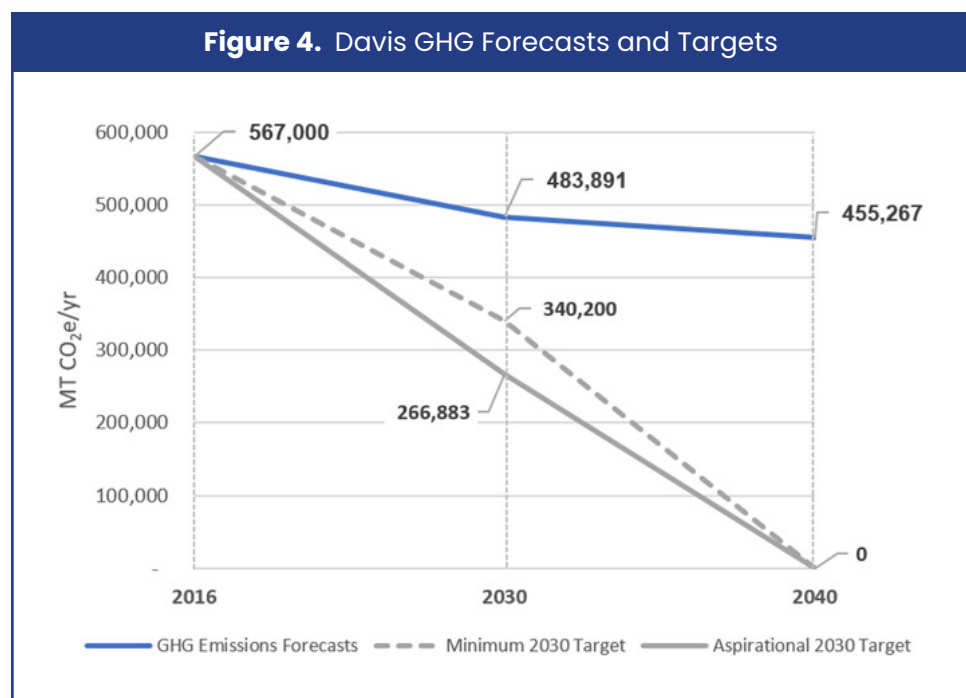
2040 CARBON NEUTRALITY TARGET

In March of 2019 the City Council approved the "Resolution Declaring a Climate Emergency and Proposing Mobilization Efforts to Restore a Safe Climate" which accelerated the City's carbon neutrality goal from 2050 to 2040 while committing to significant action to implementing carbon reduction actions by 2030. The City's 2040 carbon neutrality goal is five years ahead of the State of California's target set in Executive Order B-55-18, which called for statewide carbon neutrality by 2045 and is aligned with the IPCC 2018 report that presents multiple pathways to keep global warming levels below a 1.5° Celsius threshold.

To help understand when and/or how the City can demonstrate achievement of its carbon neutrality goal, the CAAP update developed the following carbon neutrality definition (Appendix F for further information on defining carbon neutrality):

Carbon neutrality is a zero balance in the City's emissions, demonstrated through ambitious local CAAP actions that reduce GHG emissions to the extent feasible and combined with implementation of local/regional carbon removal opportunities to remove any remaining emissions estimated to occur in the 2040 target year. These carbon removal opportunities can include agricultural practices, urban forest and open space sequestration, and other carbon removal methods as available and practical. As necessary, the City will monitor carbon markets and industrial carbon removal as secondary options for remaining emissions, including state-wide and out-of-state options.

Figure 4 illustrates the GHG forecasts and targets. The gap between the forecast line and the target lines represents the amount of GHG reductions needed to achieve the 2030 and 2040 targets. The GHG emissions forecast line represents a BAU scenario, in which no further GHG reduction actions are undertaken by the City of Davis or the State of California beyond the State's vehicle fuel efficiency standards.



CHAPTER 4.



Climate Actions

Addressing Equity and Inclusion in Action Implementation

The City is committed to equity in implementing the CAAP actions. As stated in the City's adopted climate emergency resolution, "remediation of [climate] impacts requires the active consultation and protection of vulnerable and historically exploited populations." In pursuing the goal of carbon neutrality by 2040, the City will continue to address these issues, incorporate honest and open-minded engagement, and adopt approaches that support low-income and vulnerable populations.

A key factor in review and analysis of action priorities was to consider co-benefits, including Equity and Inclusion. For the purpose of action evaluation, the Equity and Inclusion co-benefit was defined as issues that "address an existing inequity in the community, such as disproportionate poor air quality, lack of access to transit, energy burden, flood risk, etc." The proposed actions were ranked on a five-point qualitative ranking scale based on the degree to which implementation of the action will positively or negatively impact this co-benefit. Consideration of Equity and Inclusion through an environmental justice lens was supported through community input during an early CAAP workshop dedicated to understanding lived experiences and action recommendations, as well as through additional interviews and outreach to vulnerable and marginalized groups during the action development and prioritization process.

Actions were rated for their potential impact on Equity and Inclusion in the absence of any additional equity-enhancing measures unless the action language specifically addresses vulnerable populations. The criterion of Equity and Inclusion was given a weight of 2, essentially doubling its relative importance compared to the other co-benefit criteria. This approach was taken to elevate the importance of Equity and Inclusion in the action

prioritization process and better reflect the City's values.

As actions are further developed for implementation, a deeper DEI analysis of equity considerations will be incorporated and will include definitions and solutions that are explicit, community-informed, and actionable. For example, each action should identify **who** is impacted or exposed, **what** funding will be secured and distributed to ensure equity, and **how** outreach can focus on under-resourced communities to ensure knowledge of available programs/actions/incentives. What existing conditions might disproportionately affect them? Are there ways to bring in resources beyond what the City and partners can offer? Should the timeline or implementation steps be adjusted to enhance equity? Additionally, performance tracking metrics will be developed to address equity-specific goals, such as number of affordable homes upgraded, number of low-income households benefited and by how much, amount of grant funding used, and other equity-focused metrics.

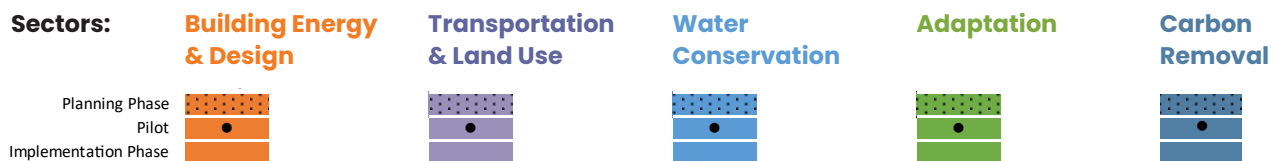
However, CAAP implementation may result in cumulative equity impacts beyond the individual CAAP action considerations. It is important to acknowledge the challenges in ensuring a fully developed equity lens during action implementation. Davis' marginalized communities bear little responsibility for the climate crisis, but it is they who will suffer the deepest burdens and consequences from the impacts of climate change. If we strive to address the needs of the vulnerable through the CAAP prioritized mitigation and adaptation actions, we take strides in addressing the needs of all.

4.2 Action Timeframes

Figure 5 summarizes timeframes for action planning, potential pilot projects (if any), and the time for full action completion. For example, Action TR.2, Decarbonize municipal fleet was started in September 2022 with a consultant contract to develop the Fleet Transition Plan. There is no pilot project, as it is a City-only action that will be implemented over time as internal combustion engine fleet vehicles are replaced and municipal charging infrastructure is developed. However, even with an aggressive timeline, full fleet electrification will likely take ten years. Other action timelines and implementation milestones may be unknown or unclear, but best assumptions available at this time are provided where possible.

The City does not have the capacity to initiate all actions simultaneously, nor is every action equally urgent, and some actions have multiple components. Accomplishments will vary by action; some will result in physical improvements, such as number of houses retrofitted, and others will result in studies or ordinances. The relative timeframes may not be exact but provide benchmarks to assess progress.

Figure 5. Action Implementation Timeframes



Prioritized Action Organization and Details

This section presents the full list of actions considered during CAAP development, including the 28 prioritized actions. In this section, actions are organized into overarching CAAP goals as shown in **Table 6**. Each section presents a description of the overarching goal, followed by details for the corresponding prioritized actions, including a summary graphic and action descriptions. The included equity considerations are a start to identifying potential equity issues that could arise from action implementation and solutions the City can pursue to mitigate the potential issues. Action details will be further developed and discussed with the community as the actions are planned.

The graphic for each action identifies the lead City department and potential key partners who will further develop the action. Time frames with assumptions for planning over the next four years and implementation efforts between CAAP adoption to 2030 and beyond are provided but may be impacted by grant funding availability or other issues. Other summary information of relative factors is provided in the graphic. Potential staff support required is provided using information developed in the Implementation Roadmaps for each action. Municipal capital cost is provided using information developed during the ASAP process. Note that this information relates only to City costs, not to other social costs that may be incurred. These other costs were analyzed in the cost effectiveness study, but are not presented here. The GHG reduction potential qualitatively with three dots. Actions with one dot contribute less than 5% of total GHG reductions, actions with two dots contribute 5%-10% of total GHG reductions, actions with three dots contribute more than 15% of total GHG reductions, and actions with zero dots could not be evaluated due a lack of information or because the actions do not result in GHG reductions (e.g., adaptation actions). Finally, the climate hazards and co-benefits are illustrated with icons representing these elements. The implementation roadmaps provide progress metrics to track implementation, which will be further refined as the action planning takes shape.

Further details about prioritized action implementation can be found in Appendix A: Implementation Roadmaps, including a list of related CAAP actions, action priority level, potential completion timelines, milestones, performance tracking metrics, funding opportunities and additional equity considerations.

ACTION TOP BAR DATA

Lead City Department:

CD	Community Development
CMO	City Manager's Office
PCS	Parks and Community Services
PWET	Public Works Engineering and Transportation
PWUO	Public Works, Utilities and Operations
SSH	Social Services and Housing Department

Key Partners:

Amtrak	Amtrak (Capital Corridor train and bus system)
CalTrans	California Department of Transportation
Community	Community members and partners
DJUSD	Davis Joint Unified School District
Contractors	Local contractors and businesses
SACOG	Sacramento Area Council of Governments
SacRT	Sacramento Regional Transit
SMAQMD	Sacramento Metropolitan Air Quality Management District
Unitrans	Davis Bus System funded jointly by Associated Students of UC Davis and City of Davis
VCE	Valley Clean Energy
YCFWCWCD	Yolo County Flood Control & Water Conservation District
YCRCD	Yolo County Resource Conservation District
YCTD	Yolo County Transportation District
YSAQMD	Yolo Solano Air Quality Management District

Climate Hazards:



Air Quality



Extreme Heat



Drought



Flood

Co-benefits:



Air Quality & Public Health (AQPH)



Biodiversity/Natural Habitat (B/N)



Cost of Living Reduction (COL)



Energy Resilience (ER)



Environmental Stewardship (ES)



Equity & Inclusion (E&I)



Facilitates Regional Collaboration (FRC)



Food Access/Security & Local/Fresh Agriculture (FAS)



Job Creation & Economic Output (JC)



Public Safety (PS)



Quick Wins/Fast Starts (Q/F)



Waste Reduction (WR)



Water Conservation/Quality (WC)

Negative Co-benefits:



Cost of Living Increase (CLI)

Table 6. CAAP Goals and Action Summary

GOAL	ACTIONS
Building Energy and Design (BE Actions)	
Transition to high-efficiency, zero-carbon homes and buildings	BE.1 Building electrification when permit is needed (Voluntary) BE.2 Building electrification for existing buildings (Voluntary) BE.3 Energy efficiency and ventilation in rental properties BE.4 All-electric new construction BE.5 Community solar energy BE.6 Carbon mitigation fund BE.7 Renewable energy in City facilities
Expand local renewable energy development and storage	BE.8 Create community microgrids and resiliency hubs
Transportation and Land Use (TR Actions)	
Adopt zero-emission vehicles and equipment	TR.1 Electric Vehicle Charging Plan TR.2 Decarbonize municipal fleet
Increase opportunities for active mobility	TR.3 "First mile/Last mile" transportation TR.4 Electric micromobility vehicles TR.5 Pedestrian and bicycle safety
Strengthen transit service within Davis and between regional neighbors	TR.6 Expand public transit TR.7 Strengthen regional transit
Reduce single-occupant vehicle use	TR.8 Downtown parking improvements TR.9 Transportation Demand Management (TDM) program TR.10 Low Emissions Vehicle Program
Expand opportunities for local housing development to balance local employment opportunities	TR.11 Develop sustainable housing
Water Conservation and Waste Reduction (WW Actions)	
Conserve water in buildings and landscapes	WW.1 Climate-ready private landscapes
Reduce waste generation and increase diversion away from landfills	<i>No actions prioritized at this time</i>
Climate Adaptation (AD Actions)	
Create a cooler city with more urban forest and green space for people and habitat	AD.1 Cool surfaces AD.2 Urban forest
Protect public health, safety, and infrastructure against damage and disruption from flooding	AD.3 Green stormwater infrastructure AD.4 Flood resilience of critical infrastructure
Prepare and respond to climate hazards to ensure that the City is equipped to address current and future challenges	AD.5 Funding and staffing for existing efforts AD.6 Public resources during extreme weather events
Carbon Removal (CR Actions)	
Demonstrate climate leadership through innovation, education, and investment	CR.1 Carbon sequestration and removal CR.2 Carbon farm plans

Building Energy and Design Actions

GOAL:

TRANSITION TO HIGH-EFFICIENCY, ZERO-CARBON HOMES AND BUILDINGS

This goal seeks to lower GHG emissions by accelerating the transition from fossil fuel-powered equipment and electricity generation to electric equipment and renewable power sources. The related actions approach this goal through several means, including incentivizing highly efficient and electric new construction and retrofits to existing residential buildings (owner-occupied and leased), commercial buildings and municipal buildings, as well as offering specific programs for low-income residents. Concepts that directly promote electrification may be included in these actions, such as the creation of home- and neighborhood-based integrated electric systems with backup power including microgrids and vehicle-to-grid power management.

Inefficient buildings and systems lead to additional GHG emissions and increase utility costs for residents and businesses. Building energy efficiency can be increased through building envelope improvements with high-quality insulation or triple-paned windows, replacing older equipment like HVAC units and water heaters with newer, high-efficiency equipment, or installing LED lighting, among other strategies. Additionally, some electric appliances are more efficient than their natural gas counterparts, leading to improvements in energy intensity.

Valley Clean Energy (VCE) is the local governed not-for profit electricity provider for the region, which includes Davis, Woodland, Winters and unincorporated Yolo County. To ensure adequate grid capacity for regional transportation and building electrification, VCE has begun to phase in electricity capacity and plan for the load to increase incrementally in response to the projected demand. The physical equipment necessary to deliver electricity to customers is the responsibility of PG&E which has previously committed to planning for load growth.

VCE programs that could help in grid resiliency include:

- **Load shifting** – increasing awareness of Time of Use Rates
- **Demand response** – responding to grid stress (VCE's Ohm Connect program)
- **Real Time Pricing Rates** – proving rates based on the wholesale energy market (VCE's Ag FIT program)
- **Vehicle to Grid** – two way charging capabilities (potential future VCE program for 2023)
- **Microgrids** – evaluating locations for protection during grid disruptions (schools, community centers, emergency services, etc.)
- **Battery backup** – potential future VCE program to provide incentives for residential customers to use battery during peak times
- **Energy efficiency** – educating customers on the value of insulation, ducting, and efficient home technologies (as well as rebates that are available)

Electrification reduces GHG emissions by replacing natural gas appliances with electric appliances if the supplied electricity is carbon-free. Thus, this is a significant goal to meet the City's carbon neutrality target, even though building energy is currently only 15% of Davis' total emissions. Unlike the transportation sector where vehicle manufacturers have set aggressive targets to increase electric vehicle sales, there is no industry-wide commitment to decarbonizing existing buildings, which places

most of the responsibility for action at the community level. Further, residents and building owners typically replace building appliances and equipment when they stop working. This means there is limited opportunity to make the switch to electric options, especially if the City wants to meet its 2030 GHG reduction target. Therefore, it is essential to encourage equipment owners to select electric options at the time of replacement. Building Energy actions primarily emphasize voluntary compliance, through education and outreach about the importance of building electrification. Because of forthcoming federal and state rebate programs such as those funded by the Investment Recovery Act (IRA), these actions should be considered a high priority.

Building Energy actions may result in costs to property owners and/or the community. For example, costs for existing buildings could include outlet and panel upgrades, electric service upgrades, and labor. The City and partners will develop approaches and guidance to help address these issues and explain costs and co-benefits (especially operational cost savings). Outreach material will include availability of funding and rebates to support the replacement of appliances and to show financial savings over time.

The City has chosen to start with community education and outreach to support voluntary electrification. The City will monitor and evaluate the effectiveness of this voluntary approach in achieving its emission reduction goals between CAAP adoption and the next projected State building code update, when mandatory decarbonization is likely to be implemented statewide. State of California updates the Building Code every three years and the latest code update, at time of CAAP publication in December 2022, will take effect on January 1, 2023. The City will continue to monitor proposed changes in the next update, projected to take effect in January 2026, and will inform community members about new requirements as appropriate.

Energy efficiency actions (including electrification) have equity benefits from reducing indoor air pollution and utility bills. Further analysis of equity will be part of action development, but some considerations for building energy actions are provided here:

Equity Issues:

- Cost of electrification may disproportionately burden low-income and vulnerable households.
- For those unable to afford electrification and for occupants in existing buildings with natural gas equipment, natural gas costs may rise as other customers electrify and utilities raise rates to cover the cost of infrastructure with a decreasing customer base.
- For rental properties, including multi- and single-family rentals, landlords may pass the cost of electrification on to renters.
- Electrification and/or code updates may impact the price and availability of affordable housing should the cost of electrification upgrades be reflected in rent and housing prices.
- Some community members may face additional challenges in understanding and responding to this action due to language barriers or lack of access to technology and resources.
- The cost of electric vehicle charging infrastructure required for new construction or upgrades may disproportionately burden low-income and vulnerable households.
- Programs to increase the availability of community solar energy programs and solar battery storage may not be fully accessible for low-income and vulnerable households.
- Electrification and efficiency financing and incentive programs may not adequately subsidize costly improvements for low-income and vulnerable households.
- For transitioning to 100% renewable energy for community members, the VCE UltraGreen option costs more than the basic electricity rate, which may pose a barrier to enrollment for low-income households.

Equity Solutions:

- Implementation of all programs should prioritize Environmental Justice communities as identified in the Vulnerability Assessment. Any pilot programs should focus on low-income and vulnerable communities.
- Financing and incentive programs should make specific provisions for low-income and vulnerable households.
- The City should explore options to offer financial support (such as partial or full subsidies, incentives, decreased permit fees, or other actions) for all Davis residents, especially low-income and vulnerable households to offset the household costs of electrification, such as the costs of new appliances.
- Where electric panel upgrades or new service is required to electrify, the City should provide resources for planning and financial support where feasible, and to help avoid potential future impacts of natural gas utility price increases.
- Communications regarding these actions should accommodate community members' language and access needs.
- The incentive options should specifically address the potential for pass-through costs to tenants.
- Provide incentives to low-income neighborhoods to retrofit natural gas equipment with electric options to reduce emissions and avoid any rising natural gas costs associated with a decreasing customer base.
- During the reach code development process, the City should explore options to offer financial support (such as partial or full subsidies) to increase the availability of affordable housing for low-income and vulnerable populations, and any pilot programs should focus on those communities.

Action BE.1.

Building electrification when permit is needed (Voluntary)

Lead City Department	Key Partners	Time Frame Planning: 0-4 years	Time Frame Implementation: 16 years	Staff Support Required	Municipal Capital Cost	GHG Reduction	Climate Hazards Addressed	Co-Benefits
CD: Building CMO: Sustainability	Community Contractors							

GHG Reduction Potential: **2030:** 1,700 MT CO₂e/yr **2040:** 4,300 MT CO₂e/yr

Address a robust voluntary approach for existing building electrification, to include City-provided educational and outreach materials for three years following CAAP adoption. During this time, provide on-going and follow up monitoring and assessment of voluntary electric equipment replacement to determine whether or not 2030 GHG emissions reduction targets are being met through voluntary action. Include specific provisions for low-income and vulnerable populations. Address financing/incentive options for all residents.

ACTION DESCRIPTION

Many residential buildings in Davis have natural gas space heating, water heating, and cooking equipment. Combusting natural gas in these systems generates GHG emissions and local air pollutants (including harmful indoor air pollution), but many residents and businesses may find it financially infeasible to replace existing natural gas equipment with electric options before their end of useful life.

Under this action, the City will develop educational and outreach materials to encourage electrification and advance planning for potential equipment failure. This can also include information on financing and incentive options to increase adoption of permitted electric options for building systems to replace natural gas equipment and appliances when a permit is needed or at the time of building remodel.

If the decision is made to develop an ordinance at a later time, the GHG reduction potential for this action increases significantly. By 2030, 17,900 MT CO₂e/yr; and by 2040 33,050 MT CO₂e/yr reduction can be realized. At that time, other financial incentives can be discussed, such as reduced permit fees, and streamlining the permit process for electrification to incentivize this action.

The City will include specific provisions for low-income and vulnerable populations to facilitate equipment transitions. The City will monitor and evaluate the effectiveness of a voluntary program approach in achieving its emission reduction goals between CAAP adoption and the projected State building code update on January 1, 2026, when mandatory decarbonization is likely to be implemented statewide. This mandatory approach could include new requirements to electrify (or otherwise decarbonize) building equipment and systems that require permits at the time of equipment replacement or during major remodel, while again including specific provisions for low-income and vulnerable populations to assist in compliance.

More information on this action can be found in Appendix A: Implementation Roadmaps.

Action BE.2.

Building electrification for existing buildings (Voluntary)

Lead City Department	Key Partners	Time Frame Planning: 0-4 years	Time Frame Implementation: 16 years	Staff Support Required	Municipal Capital Cost	GHG Reduction	Climate Hazards Addressed	Co-Benefits
CD: Building CMO: Sustainability	Community Contractors						 	

GHG Reduction Potential: **2030:** 550 MT CO₂e/yr **2040:** 1,250 MT CO₂e/yr

Provide education and outreach to assist property owners in making informed decisions for building energy/efficiency upgrades (including information about replacement with electric or other non-fossil fuel equipment replacement) for residential and commercial properties, including any existing or anticipated incentive and financing programs. Develop a Home Energy Score (HES) program. Include specific provisions for low-income and vulnerable populations.

ACTION DESCRIPTION

This action works in concert with Action BE.1, Building Electrification when permit is needed (Voluntary). This action provides education and outreach to help property owners with informed decisions for voluntary building electrification. This proposed action was changed by the City prior to CAAP adoption, due to significant community concern about the electrification at point-of-sale timeframe, costs, and uncertainty for Davis property owners. This action now addresses voluntary electrification in existing buildings only, with no proposed ordinance for point of sale, focusing on extensive education and outreach. These changes will give staff time to research and implement incentives and financing mechanisms in support of voluntary electrification for the community.

To implement this action, the City will begin by implementing a “Building Energy Score” program to provide information about the existing building energy efficiency ‘baseline’. Similar programs have been developed in the Bay Area and elsewhere and will be used as models for a Davis pilot program. This program can be paired with providing outreach and information about City or other sources of financing, funding resources, incentive and other assistance for property owners to voluntarily improve their energy efficiency and/or opt for electrification to replace natural gas equipment.

Electric equipment options can increase property values, decrease operational costs and help ensure that occupants are afforded a healthy, safe and efficient building environment. In implementing this action, the City will include specific provisions for low-income and vulnerable populations.

The City will monitor and evaluate the effectiveness of this voluntary program approach in achieving its emission reduction goals.

More information on this action can be found in Appendix A: Implementation Roadmaps.

Action BE.3.

Energy efficiency and ventilation in rental properties

Lead City Department	Key Partners	Time Frame Planning: 0-4 years	Time Frame Implementation: 16 years	Staff Support Required	Municipal Capital Cost	GHG Reduction	Climate Hazards Addressed	Co-Benefits
CD: Building CMO: SSH & Sustainability	Rental property owners							

GHG Reduction Potential: **2030:** 850 MT CO₂e/yr **2040:** 2,250 MT CO₂e/yr

Develop financing and/or incentivized options for rental property owners to make energy efficiency and cooling/ventilation upgrades. Develop policies, and/or modify the rental license program, to require minimum energy efficiency and cooling/ventilation requirements, with a priority on residential rental properties.

ACTION DESCRIPTION

Some properties in Davis lack proper cooling and ventilation, which will pose a greater health and occupant comfort problem as temperatures rise and wildfire frequency increases. However, increasing access to these necessities can also increase energy consumption and therefore utility costs.

Space and water heating systems in residential buildings are often natural gas equipment; many buildings also have natural gas ranges for cooking. This action addresses energy efficiency improvements and provision of cooling/ventilation systems for rental homes. Improved cooling/ventilation will help address the effects of extreme heat and wildfire smoke, while energy efficiency improvements will reduce GHG emissions. Improved, energy efficient kitchen ventilation will decrease potential health issues.

To implement this action, the City will design financing and incentive options for rental property owners to make these improvements. As with other electrification actions, the City will monitor and evaluate the effectiveness of a voluntary program approach in achieving its emission reduction goals. To encourage implementation, the City will re-evaluate the option of modifying its rental license program to include minimum energy efficiency and cooling/ventilation requirements.

More information on this action can be found in Appendix A: Implementation Roadmaps.

Action BE.4.

All-electric new construction

Lead City Department	Key Partners	Time Frame Planning: 0-4 years	Time Frame Implementation: 16 years	Staff Support Required	Municipal Capital Cost	GHG Reduction	Climate Hazards Addressed	Co-Benefits
CD: Building CMO: Sustainability	Developers							

GHG Reduction Potential: **2030:** 1,650 MT CO₂e/yr **2040:** 4,950 MT CO₂e/yr

Continue to update the City’s residential and non-residential reach codes to require all-electric new construction and increase electric vehicle charging infrastructure requirements; adopt a requirement that all new municipal building construction must be all-electric.

ACTION DESCRIPTION

This action seeks to eliminate installation of natural gas appliances/equipment in new construction, including in new municipal buildings. All-electric (or otherwise decarbonized) new construction avoids “emissions lock-in,” when installation of new natural gas equipment commits the community to future GHG emissions for the lifetime of the installed equipment, and future-proofs new buildings against retrofit costs.

Under this action, the City will continue to update its residential and non-residential reach codes to require all-electric new construction. Staff will also develop a requirement that all new municipal building construction will be all-electric.

The current 2019 Davis Residential Reach Code incentivizes all electric new developments by requiring a 10% energy efficiency reach code for approval of mixed fuel developments, but no reach over state code requirements for all-electric. Most new development projects since 2019 have been all-electric (e.g., Chiles Ranch and Bretton Woods). This action will also increase the availability of EV charging infrastructure, which is often one barrier to broader EV adoption. In addition to electrification, upcoming City of Davis building actions and residential and non-residential reach codes will incorporate other upgrades to City codes to decrease GHG emissions, such as actions to address carbon reduction in concrete, water conservation actions, and other approaches.

More information on this action can be found in Appendix A: Implementation Roadmaps.

Action BE.5.

Community solar energy

Lead City Department	Key Partners	Time Frame Planning: 0-4 years	Time Frame Implementation: 16 years	Staff Support Required	Municipal Capital Cost	GHG Reduction	Climate Hazards Addressed	Co-Benefits
CMO: Sustainability	VCE							

GHG Reduction Potential: 2030: 35,300 MT CO₂e/yr 2040: 43,350 MT CO₂e/yr

Partner with Valley Clean Energy (VCE) to increase capacity in support of citywide building and transportation electrification, investments in community solar energy, and provide solar battery storage. Encourage all subscribers to enroll in the UltraGreen option. Develop financing/incentive options to support building and transportation energy electrification and energy efficiency improvements.

ACTION DESCRIPTION

VCE, the regional Consumer Choice Energy provider, offers a 100% renewable and carbon-free service option called UltraGreen. VCE also offers a variety of community programs to improve energy efficiency and EV access for customers.

This action has three components:







1. Partner with Valley Clean Energy to invest in community solar energy and provide solar battery storage. To implement this, the City may consider integration with Action BE.8, Create community microgrids and resiliency hubs. Solar installations may be developed as solar farms or related to specific community areas, such as affordable or senior housing, with a focus on local community energy projects. An assessment of community needs and potential locations and costs must first be addressed, including the impacts to low-income communities and other vulnerable populations.
2. Encourage all subscribers to enroll in the UltraGreen option. At the time of CAAP adoption, a pilot project of automatic transition to UltraGreen for all Davis customers is being evaluated, which will include developing an outreach strategy to notify customers of the benefits, environmental impacts, and costs of the transition to UltraGreen, and to provide funding to pay for the differential in cost for a pre-determined timeframe, such as three years.
3. Develop financing/incentive options to support building energy efficiency improvements and electrification. Develop additional information for implementation of financing and incentives for community properties.

To implement this action, the City will engage with VCE to expand system capacity in preparation for citywide building and transportation electrification. The City will also partner with VCE to explore opportunities for community solar energy and solar battery storage and develop approaches to encourage greater UltraGreen enrollment by Davis VCE subscribers as an early action item; over time, VCE is expected to shift to a 100% carbon-free portfolio for all customers. Additionally, the City will partner with VCE to offer financing and incentive options for building energy efficiency improvements and electrification to help support the voluntary implementation phases for actions BE.1 to BE.3.

More information on this action can be found in Appendix A: Implementation Roadmaps.

Action BE.6.

Carbon mitigation fund

Lead City Department	Key Partners	Time Frame Planning: 0-4 years	Time Frame Implementation: 16 years	Staff Support Required	Municipal Capital Cost	GHG Reduction	Climate Hazards Addressed	Co-Benefits
CMO: Sustainability	Regional agency collaboration							 

GHG Reduction Potential: N/A, but provides funding for CAAP implementation

Establish a carbon mitigation fund to collect voluntary and/or mandatory payments to mitigate local emissions activities, with collected funds used to support a range of local, climate-change-related projects.

ACTION DESCRIPTION

The City proposes developing a carbon mitigation fund to offer financial support to projects that reduce carbon emissions. The purpose of the carbon mitigation fund is to collect and award funding for carbon removal or carbon reduction activities locally.

The City will evaluate a variety of options for program design, including working with regional partners, identifying funding sources (e.g., voluntary or mandatory payments, initial grant funding, recurring allocation from the City budget, developer impact or other local fees, cost savings from energy efficiency and GHG emissions reduction applied to “business as usual” budgets or other approaches) and defining the types of carbon reduction or removal projects that would be eligible to receive funding such as energy efficiency, transportation programs, incentives or other projects (see Appendix B).








Equity issues specific to a carbon mitigation fund include concerns that funding may not be equally accessible by all communities. If funds are generated through a mandatory payment scheme, this could disproportionately affect low-income communities if the payment structure is not carefully defined.

Project evaluation and eligibility criteria should prioritize projects that offer co-benefits to Environmental Justice communities as defined in the Vulnerability Assessment; this could include replacing natural gas equipment with electric options, providing free transit passes and/or micromobility options, installing cooling/ventilation equipment, etc.

More information on this action can be found in Appendix A: Implementation Roadmaps.

Action BE.7.

Renewable energy in City facilities

Lead City Department	Key Partners	Time Frame Planning: 0-4 years	Time Frame Implementation: 16 years	Staff Support Required	Municipal Capital Cost	GHG Reduction	Climate Hazards Addressed	Co-Benefits
PWUO	VCE				  			  

GHG Reduction Potential: **2030:** 750 MT CO₂e/yr **2040:** 950 MT CO₂e/yr

Switch from fossil gas to electricity, renewable hydrogen, or other non-fossil renewables in all existing City facilities, and include a provision that the City shall upgrade to UltraGreen (100% renewable energy) with Valley Clean Energy for all municipal accounts.

ACTION DESCRIPTION

As the first step of implementation, the City will upgrade all municipal electricity accounts from VCE's Standard Green to the UltraGreen, a 100% renewable and carbon-free service option

Under this action, the City will develop a plan to transition municipal buildings and facilities from fossil gas to electricity, renewable hydrogen, or other non-fossil renewables. Beginning with a comprehensive audit of municipal buildings will help to understand current equipment condition and lifespan to establish a phasing schedule for retrofits that can then be integrated into capital budget planning. This audit should consider opportunities for energy efficiency improvements and on-site renewable energy generation to facilitate building decarbonization. This audit should also define City facilities to include only City-owned, or also properties leased, managed, and/or used by other entities.

In addition to its benefits for GHG reduction, cost savings, facilities improvements, and public health, a key objective for this action is for the City to serve as a model for Davis citizens and demonstrate that the City is willing to take the measures requested of its citizens.

GOAL:

EXPAND LOCAL RENEWABLE ENERGY DEVELOPMENT AND STORAGE

This goal seeks to expand renewable energy development and use within Davis. The actions in this goal area address municipal and private energy use by incentivizing local installation of solar and other renewable energy systems and by collaborating with VCE, the Community Choice Energy provider for Davis.

Specific equity considerations for this building energy goal include:

Equity Issues:


- Microgrids tend to be developed in wealthier communities, further increasing climate resiliency disparities. Wealthier communities are likely to have more resources and leverage to access programs and expenditures by utilities and governments to create microgrids.

Equity Solutions:

- Program evaluation and eligibility criteria should prioritize projects that serve Environmental Justice communities as defined in the Vulnerability Assessment.
- Since microgrids are intended to improve grid reliability and avoid undesirable outcomes, consider developing and applying a set of EJ-neutral, risk-based decision criteria. Risks to consider could include the quality and age of local grid facilities, the ability of residents to adapt to loss of power, and special facilities that would be affected by power failures (e.g., nursing homes).
- Communications regarding this action should accommodate community members' language and access needs.
- Ensure vulnerability communities are made aware of any public community microgrids or battery co-ops that can be accessed during power outages.

Action BE.8.

Create community microgrids and resiliency hubs

Lead City Department	Key Partners	Time Frame Planning: 0-4 years	Time Frame Implementation: 16 years	Staff Support Required	Municipal Capital Cost	GHG Reduction	Climate Hazards Addressed	Co-Benefits
PWUO CMO: Sustainability, PCS	VCE						 	 

Address and incentivize the creation of community microgrids, community battery “co-ops”, and the networking of local energy sources. Create and/or support resiliency hubs that remain in operation during a power grid outage.

ACTION DESCRIPTION

Community microgrids, community battery “co-ops,” and the networking of local energy sources support energy resilience by creating alternate localized energy infrastructure. In the event of power grid outages (which may increase in frequency due to extreme heat, wildfire, or public safety power shutoff events) these localized resiliency hubs could remain in operation. Additionally, if stocked with supplies, these resiliency hubs could act as weather relief centers for low-income and vulnerable community members during extreme weather events.

The Urban Sustainability Directors Network defines resilience hubs as community-serving facilities augmented to support residents and coordinate resource distribution and services before, during, or after a natural hazard event. Resilience hubs generally offer more functions beyond weather relief (e.g., cooling centers). Microgrids and resilience hubs can be developed independently of one another, with differing resilience outcomes. Microgrids provide better resiliency in the power system, supporting grid reliability, extreme heat resilience, and public safety objectives. Resilience hubs, which can be developed with or without microgrids, support broader community resilience. This action directs the City to incentivize establishment of these programs to boost energy and community resilience. The City will consider a variety of incentive mechanisms and potential resiliency hub programs. The City may consider undertaking a study on microgrid development as a possible preliminary step.

Due to a lack of current information for data analysis, the potential for GHG reduction for this action is not available. As the action is further developed, more data may become available.

More information on this action can be found in Appendix A: Implementation Roadmaps.

Transportation and Land Use Actions

GOAL:

ADOPT ZERO EMISSIONS VEHICLES AND EQUIPMENT TO REDUCE FOSSIL FUEL USE

Actions in this goal area aim to reduce fossil fuel use by promoting zero emissions vehicles and equipment for public and private users. Individual actions propose various means to incentivize electric vehicles and equipment, including financial incentives, preferential electric vehicle charging rates, and trade-in credits for gas equipment.

Transportation and land use actions have equity benefits by improving air quality, addressing public health, and delivering other co-benefits. Further analysis of equity will be part of action development, but some considerations for transportation actions are provided here:

Equity Issues:

- If infrastructure improvements such as electric vehicle charging infrastructure and shared electric micromobility storage corrals are not prioritized with equity in mind, low-income and vulnerable communities may be last to receive these amenities.
- Low-income and vulnerable communities may be less able to access certain financing and incentive programs, such as a rebate program that requires upfront payment.
- Some community members may face additional challenges in understanding and responding to this action due to language barriers or lack of access to technology and resources.

Equity Solutions:

- Updates to physical infrastructure should prioritize service to Environmental Justice communities as defined in the Vulnerability Assessment. Evaluation criteria, plan updates and other implementation actions should specifically address equity considerations.
- Consider prioritizing charging infrastructure at multi-family buildings in addition to public charging stations to help solve renter access to EV charging to create a more equitable long-term solution.
- Communications regarding this action should accommodate community members' language and access needs.

Action TR.1.

Electric Vehicle Charging Plan

Lead City Department	Key Partners	Time Frame Planning: 0-4 years	Time Frame Implementation: 16 years	Staff Support Required	Municipal Capital Cost	GHG Reduction	Climate Hazards Addressed	Co-Benefits
CMO: Sustainability PWET	VCE				\$ \$\$			

GHG Reduction Potential: **2030:** 55,500 MT CO₂e/yr **2040:** 117,250 MT CO₂e/yr

Update and implement the Davis Electric Vehicle Charging Plan (2017) to determine public and private charging infrastructure needs, time frame, and implementation approach to enable all vehicles to go electric. Identify and implement the first five-year plan including specific locations and feasibility, costs, potential grant funding and partners, electric vehicle adoption needs and opportunities. Include provisions for low-income and vulnerable community members.

ACTION DESCRIPTION

The limited availability of public and private charging infrastructure is a barrier to broader adoption of personal electric vehicles. Strategically installing EV charging stations around the City can enhance charging convenience, attract more business, and encourage residents to transition to EVs. As at-home charging can be an issue for renters, public charging is a necessity to reach EV adoption goals.

To undertake this action, the City will update and implement the original Davis Electric Vehicle Charging Plan (2017). Plan components to be updated include public and private charging infrastructure needs, time frame and implementation approach.

More information on this action can be found in Appendix A: Implementation Roadmaps.

Action TR.2.

Decarbonize municipal fleet

Lead City Department	Key Partners	Time Frame Planning: 0-4 years	Time Frame Implementation: 16 years	Staff Support Required	Municipal Capital Cost	GHG Reduction	Climate Hazards Addressed	Co-Benefits
PWET PWUO Fleet CMO: Sustainability					\$ \$			

GHG Reduction Potential: **2030:** 550 MT CO₂e/yr **2040:** 1,100 MT CO₂e/yr

Develop an aggressive plan to transition the municipal vehicle fleet to alternative fuels (e.g., electric, battery electric vehicle, hydrogen).

ACTION DESCRIPTION

The City owns and operates a fleet of vehicles used to provide services to residents and businesses, such as safety vehicles and equipment, park maintenance vehicles and general-purpose staff vehicles. The fleet includes a mix of vehicle types and fuel use, including gasoline and diesel vehicles.

To implement this action, the City is currently in contract to complete a plan to transition the municipal vehicle fleet from primarily fossil fuel-powered vehicles to alternative fuel-powered vehicles. This plan will include exploration of various alternative vehicle types and technologies, including battery electric vehicles and fuel cell electric vehicles (powered by hydrogen), with the goal to find zero emissions vehicle options for the full fleet.

Based on technology availability, implementation will likely be phased with a focus on passenger and light-duty vehicles first, followed by medium- and heavy-duty vehicles and equipment. The City will also consider if special allowances or delayed implementation phasing should apply to specific vehicle types, such as public safety/emergency vehicles or vehicle types that do not have low-emission alternatives available.

More information on this action can be found in Appendix A: Implementation Roadmaps.

GOAL:

INCREASE OPPORTUNITIES FOR ACTIVE MOBILITY IN THE COMMUNITY

The objective of this goal is to transition residents away from single-passenger vehicles and towards transit and active transportation. Actions in this goal area concern micromobility and micro-transit vehicles and infrastructure, including bikes, scooters, and vans, that can provide “first mile/last mile” transportation solutions and offer alternatives to fossil fuel-based transportation.

Transportation and land use actions have equity benefits by improving air quality, addressing public health, and providing other co-benefits. Further analysis of equity considerations will be part of action development, but some considerations for transportation actions are provided here:

Equity Issues:

- Improvements to physical infrastructure may fail to fairly address the needs of Environmental Justice communities as defined in the Vulnerability Assessment.
- Low-income and vulnerable communities may be less able to access certain financing and incentive programs, such as a rebate program that requires upfront payment.
- Some community members may face additional challenges in understanding and responding to this action due to language barriers or lack of access to technology and resources.

Equity Solutions:

- Infrastructure improvements should be piloted in Environmental Justice communities as defined in the Vulnerability Assessment.
- Evaluation criteria for potential financing and incentive programs should specifically address equity considerations.
- Communications regarding this action should accommodate community members’ language and access needs.

Action TR.3.

“First/last mile” transportation

Lead City Department	Key Partners	Time Frame Planning: 0-4 years	Time Frame Implementation: 16 years	Staff Support Required	Municipal Capital Cost	GHG Reduction	Climate Hazards Addressed	Co-Benefits
PWET	Unitrans YCTD SACOG DJUSD				\$ \$ \$			

Address “first mile/last mile” and short-trip transportation needs by continuing to prioritize, fund, and implement on-going programs/partnerships and develop new programs/partnerships to provide alternative transportation options within Davis. Include specific provisions for low-income or vulnerable populations. Include specific action recommendations, pilot programs, or other ways to implement actions.

ACTION DESCRIPTION

Public transit ridership is low where users face limited options for the segment of their trip from their home, work or other destination to the nearest transit station, which is often referred to as “first mile/last mile” challenges. Removing “first mile/last mile” barriers as well as those for other short trips is a strategy to increase public transit use and reduce total VMT from private vehicles. Public transit riders can use micromobility devices such as bikes, e-bikes and scooters to overcome some “first mile/last mile” barriers.

Under this action, the City will evaluate options to address “first mile/last mile” and short trip challenges that might currently push travelers toward single occupant vehicles or ride hailing services like Lyft or Uber. A comprehensive strategy could include developing a shared electric micromobility program and charging plan (e.g., a communitywide program for renting e-bikes or scooters), considering a pedi-cab service program, or providing additional resources for the Safe Routes to School program.

Due to a lack of current information for data analysis, the potential for GHG reduction for this action is not available. As the action is further developed, more data may become available.

More information on this action can be found in Appendix A: Implementation Roadmaps.

Action TR.4.

Electric micromobility vehicles

Lead City Department	Key Partners	Time Frame Planning: 0-4 years	Time Frame Implementation: 16 years	Staff Support Required	Municipal Capital Cost	GHG Reduction	Climate Hazards Addressed	Co-Benefits
PWET	YCTD SACOG				\$ \$			

GHG Reduction Potential: **2030:** 200 MT CO₂e/yr **2040:** 150 MT CO₂e/yr

Develop financing/incentives for purchasing, using, and maintaining electric micromobility vehicles for personal use (such as bicycles, scooters, trailers). Include specific provisions for low-income and vulnerable populations.

ACTION DESCRIPTION




Shifting single-occupancy internal combustion engine vehicle trips to alternate modes of transportation reduces on-road vehicle travel emissions. Personal use of electric micromobility vehicles such as bicycles and scooters are one means to achieve this mode shift. Compared to pedal options, electric micromobility options are useful for longer trips, for those with physical limitations, or to improve rider comfort during hot days. These options can better relieve traffic congestion and address the first/last mile problem of accessing other forms of transit.

Under this action, the City will develop financing and incentives for individual purchase, use and maintenance of electric micromobility vehicles. This action will include specific provisions for low-income and vulnerable populations.

More information on this action can be found in Appendix A: Implementation Roadmaps.

Action TR.5.

Pedestrian and bicycle safety

Lead City Department	Key Partners	Time Frame Planning: 0-4 years	Time Frame Implementation: 16 years	Staff Support Required	Municipal Capital Cost	GHG Reduction	Climate Hazards Addressed	Co-Benefits
PWET PWUO	DJUSD				\$ \$ \$			

Encourage active transportation with infrastructure improvements. Implement roadway and bikeway infrastructure improvements in existing right-of-way, such as “road diets,” narrower pedestrian crossing distances, green stormwater infrastructure, etc., to meet Green Streets standards and increase safety for pedestrians and bicycles.

ACTION DESCRIPTION

Making travel routes and intersections safe, accessible, and convenient for pedestrians and cyclists is one way to reduce VMT from fossil fuel-powered vehicles. A “road diet” typically involves reducing the number of travel lanes and travel widths for on-road vehicles (e.g., cars, trucks) to provide more space for bike lanes, wider sidewalks, pedestrian crossing islands and other safety features. “Road diets” improve safety for vehicles, pedestrians, and bicycles, including by narrowing pedestrian crossing distances.

Also related to public space and public rights-of-way, “Green Streets” concepts incorporate technology and design elements to better manage stormwater and urban runoff by slowing the movement of stormwater to discharge points, allowing greater infiltration, and acting as an initial filter. Most flooding in Davis is the result of sheet flow on impervious surfaces and the installation of green streets strategies would improve perviousness. Green Streets also include increased tree planting to provide shade coverage for pedestrians and bicyclists.

For this action, the City will evaluate a range of roadway infrastructure improvements, including intersection safety and design, “road diets” and green stormwater infrastructure. The City will implement selected projects to improve stormwater management and pedestrian and cyclist safety, with the goal of increasing active transportation and decreasing flooding from sheet flow.

Due to a lack of current information for data analysis, the potential for GHG reduction for this action is not available. As the action is further developed, more data may become available.

More information on this action can be found in Appendix A: Implementation Roadmaps.

GOAL: STRENGTHEN TRANSIT SERVICE WITHIN DAVIS AND AMONG REGIONAL NEIGHBORS

This goal seeks to expand transit service and access in Davis through different means, including subsidizing transit costs and improving transit interconnections.

Transportation actions have equity benefits by improving air quality, addressing public health, and delivering other co-benefits. Further analysis of equity considerations will be part of action development, but some considerations for transportation actions are provided here:

Equity Issues:

- Changes to public service routes may deprioritize low-income communities.
- Improvements to physical infrastructure may fail to fairly address the needs of Environmental Justice communities as defined in the Vulnerability Assessment.
- Transit schedules may not address the needs of people working off-peak hours.
- Some community members may face additional challenges in understanding and responding to this action due to language barriers or lack of access to technology and resources.

Equity Solutions:

- Route expansion efforts should seek to increase service to Environmental Justice communities as defined in the Vulnerability Assessment.
- Infrastructure improvements, such as additional routes and stops, and improved connections and service, should be piloted in Environmental Justice communities as defined in the Vulnerability Assessment.
- When considering transit schedule improvements, assess the need for transit schedules to accommodate second- and third-shift workers.
- Communications regarding this action should accommodate community members' language and access needs.

Action TR.6.

Expand public transit

Lead City Department	Key Partners	Time Frame Planning: 0-4 years	Time Frame Implementation: 16 years	Staff Support Required	Municipal Capital Cost	GHG Reduction	Climate Hazards Addressed	Co-Benefits
PWET CMO: Sustainability	Unitrans YCTD SacRT Amtrak							

GHG Reduction Potential: **2030:** 2,050 MT CO₂e/yr **2040:** 2,000 MT CO₂e/yr

Subsidize public transit so it is free for all to use. Promote expansion of public transit routes and increased operation frequency within Davis to support day-to-day travel needs.

ACTION DESCRIPTION

The cost of public transit may serve as a barrier to full ridership, particularly in low-income communities. Additionally, infrequent service of existing routes and inadequate geographical coverage by routes (increasing the distance of “first mile/last mile” travel required) serve to make public transit less useful, decreasing ridership.

Under the recommendations of this action, the City will work with transit partners and local planning/funding agencies such as SACOG to implement a one-year pilot for free transit. Following analysis of the effectiveness of this pilot project, the City will collaborate regionally to identify options to subsidize public transit so that it is available at no cost to anyone. Pursuing this strategy will require discussions and collaboration with transit service providers in the community to determine full costs of action implementation, and/or identify alternative creative solutions that could achieve the same goal of removing cost as a barrier to transit ridership. The City will also work with its transit service providers and neighboring local governments to expand public transit routes and increase operation frequency within Davis and the surrounding region.

More information on this action can be found in Appendix A: Implementation Roadmaps.

Action TR.7.

Strengthen regional transit

Lead City Department	Key Partners	Time Frame Planning: 0-4 years	Time Frame Implementation: 16 years	Staff Support Required	Municipal Capital Cost	GHG Reduction	Climate Hazards Addressed	Co-Benefits
PWET CMO: Sustainability	Unitrans YCTD SacRT Amtrak							

GHG Reduction Potential: **2030:** 1,800 MT CO₂e/yr **2040:** 1,700 MT CO₂e/yr

Coordinate with regional transit agencies and cities to promote cohesive transit interconnections, including express buses to Woodland, West Sacramento, Sacramento, etc.

ACTION DESCRIPTION

Regional transit agencies share a common goal and improved coordination among agencies can increase the number of feasible destinations and frequency of service available for transit passengers. Several transit agencies serve common travel destinations for Davis residents and visitors.

For this action, the City will coordinate with its regional transit agency partners to improve transit interconnections so that public transit is a viable, time-effective option for more riders to more destinations. This coordination should include improvements for express bus options to Woodland, West Sacramento, Sacramento and other high-priority travel destinations for Davis residents and employees, as identified in the travel analysis supporting the 2016 GHG inventory revisions and the City's other transportation analyses. The CAAP origin-destination analysis identified the amount of in-commuting and out-commuting as an important challenge when addressing the City's on-road transportation emissions. Improving the convenience and reliability of regional transit is one potential strategy to reduce some of the private vehicle use in trips that start or end outside of the City.

More information on this action can be found in Appendix A: Implementation Roadmaps.

GOAL: REDUCE SINGLE OCCUPANT VEHICLE USE

Actions in this goal area aim to reduce single occupant vehicle use by implementing parking pricing, considering a Transportation Demand Management (TDM) program, creating a low emissions vehicle program, encouraging carpooling, and adjusting parking space availability for residential buildings.

Transportation actions have equity benefits by improving air quality, addressing public health, and providing other co-benefits. Further analysis of equity considerations will be part of action development, but some considerations for transportation actions are provided here:

Equity Issues:

- Paid parking poses a greater cost burden for low-income communities.
- Parking meters that only accept credit card or app payments exclude those who only have access to cash.
- Low-income people may not have the at-home resources to telecommute.
- Low-income neighborhoods may have a greater share of residents whose jobs cannot be performed remotely.
- Financial disincentive programs place a higher cost burden on low-income and vulnerable communities.
- Paid parking risks being ineffective at changing the behavior of wealthy drivers, while posing a disproportionate burden on lower-income drivers, especially if alternative modes of transportation are not equally accessible and convenient
- Some community members may face additional challenges in understanding and responding to this action due to language barriers or lack of access to technology and resources.

Equity Solutions:

- Program and pilot project design, implementation and evaluation should consider the needs of Environmental Justice communities as defined in the Vulnerability Assessment.
- Pilot project implementation should consider the need for meters that accept multiple payment methods, including cash.
- Increase access to high-quality internet connectivity for low-income households and areas of the City where broadband internet is not easily accessible.
- Program design and implementation should consider the needs of Environmental Justice communities as defined in the Vulnerability Assessment.
- Communications regarding this action should accommodate community members' language and access needs.

Action TR.8.

Downtown parking improvements

Lead City Department	Key Partners	Time Frame Planning: 0-4 years	Time Frame Implementation: 16 years	Staff Support Required	Municipal Capital Cost	GHG Reduction	Climate Hazards Addressed	Co-Benefits
PWET	Downtown Businesses							

GHG Reduction Potential: **2030:** 14,850 MT CO₂e/yr **2040:** 13,200 MT CO₂e/yr

Revisit most recent parking pricing study (*Downtown Paid Parking, City Council March 5, 2019*) and implement pilot projects to test their effectiveness. Reduce or eliminate minimum parking standards in new developments.

ACTION DESCRIPTION

The Downtown Paid Parking study explored the potential for converting some free public parking to paid parking. Only a limited version of this proposal was adopted in 2019.

Under this action, the City will implement pilot projects as discussed in the 2019 study, and will evaluate the effectiveness of these pilots before expanding a paid parking program. The City will also explore the feasibility of allocating parking income to GHG reduction program implementation and/or dedicating the revenue stream to a carbon mitigation fund as described in Action BE.6.

It should be noted that studies and research support the attribution of GHG reductions to parking pricing, there is insufficient data to fully analyze the GHG reduction potential of actions to improve transit and micromobility, which are influenced by multiple factors such as land use design, destination density, etc. Additional study may be needed for these actions to evaluate GHG reductions prior to implementation. For that reason, this action is not one of the higher priorities.

More information on this action can be found in Appendix A: Implementation Roadmaps.

Action TR.9.

Transportation Demand Management (TDM) program

Lead City Department	Key Partners	Time Frame Planning: 0-4 years	Time Frame Implementation: 16 years	Staff Support Required	Municipal Capital Cost	GHG Reduction	Climate Hazards Addressed	Co-Benefits
PWET CMO: Sustainability	YCTD SACOG UCD Employers							

GHG Reduction Potential: **2030:** 2,850 MT CO₂e/yr **2040:** 2,700 MT CO₂e/yr

Address recommendations for developing, funding, and staffing a coordinated Transportation Demand Management (TDM) program to encourage and/or require “all people, all trips” to implement TDM strategies, such as remote work opportunities, community education and outreach, micromobility, vanpool, rideshare, subsidized transit, employee parking cash-out, etc.

ACTION DESCRIPTION

Transportation Demand Management is a strategy by which driving can be disincentivized by promoting using alternative travel modes (public transit, active transport), increasing the number of passengers in vehicles (carpooling) and eliminating trips altogether (working remotely). As many employees have already shifted to working remotely, TDM strategies are becoming more popular and easier to implement.

To implement this action, the City will develop, fund and staff a TDM program designed for “all people, all trips” with the goal of achieving broad participation in the TDM programs, including voluntary participation from residents. Requirements that might be developed as part of this program will focus on employer implementation of TDM strategies, such as providing remote work opportunities, community education and outreach, micromobility options, vanpool or rideshare incentives, subsidized transit passes and employee parking cash-out. In addition, the City will explore options to collaborate with large employers such as UC Davis and the City of Davis, which offers an up-to-50% remote work policy for those employees whose positions can be performed remotely.

More information on this action can be found in Appendix A: Implementation Roadmaps.

Action TR.10.

Low Emissions Vehicle Program

Lead City Department	Key Partners	Time Frame Planning: 0-4 years	Time Frame Implementation: 16 years	Staff Support Required	Municipal Capital Cost	GHG Reduction	Climate Hazards Addressed	Co-Benefits
PWET	CARB SACOG	Not known	Not known		\$			   

Research, develop, and establish a low-emissions vehicle program that disincentivizes travel by internal combustion engine (ICE) vehicles.

ACTION DESCRIPTION

Internal combustion engine vehicles contribute significantly to Davis’ GHG inventory. There are multiple pathways available to mitigate this emissions source, including land use and planning strategies that decrease the need and/or distance of vehicle travel, alternative fuel vehicle options like EVs, active transportation and micromobility infrastructure improvements like bike paths and e-scooter rentals, and

Under this action, the City will design and implement a citywide program to disincentivize travel by internal combustion vehicles. The City can look to other climate leaders for program design ideas, including phasing by vehicle types or geographic areas of the community in which the program is implemented, drawing inspiration from other cities zero emissions delivery vehicle zones or broader low emissions zones.

Due to a lack of current information for data analysis, the potential for GHG reduction for this action is not available. As the action is further developed, more data may be available.

More information on this action can be found in Appendix A: Implementation Roadmaps.

GOAL:

EXPAND OPPORTUNITIES FOR LOCAL HOUSING DEVELOPMENT TO BALANCE LOCAL EMPLOYMENT OPPORTUNITIES

Actions in this section would increase housing availability in Davis, with a focus on high-density, mixed-use, transit-oriented, multifamily development. These actions incentivize housing construction and address up-zoning and mixed-use developments in commercial corridors.

Transportation actions benefit equity by improving air quality, addressing public health, and providing other co-benefits. Further analysis of equity considerations will be part of action development, but some considerations for transportation actions are provided here:

Equity Issues:

- New construction may fail to create affordable housing.
- Some community members may face additional challenges in understanding and responding to this action due to language barriers or lack of access to technology and resources.

Equity Solutions:

- Program design and implementation should make explicit provisions to ensure that affordable housing stock is created and preserved.
- Infrastructure investment should be prioritized in Environmental Justice communities as defined in the Vulnerability Assessment.
- Communications regarding this action should accommodate community members' language and access needs.

Action TR.11.

Develop sustainable housing

Lead City Department	Key Partners	Time Frame Planning: 0-4 years	Time Frame Implementation: 16 years	Staff Support Required	Municipal Capital Cost	GHG Reduction	Climate Hazards Addressed	Co-Benefits
CD: Planning	Housing advocates Developers Property owners				\$ \$			

Increase housing opportunities to support the jobs/housing balance and decrease vehicle miles traveled. Develop incentive options to increase housing construction in the city, including high-density, mixed-use (especially office space and food service), transit-oriented, and affordable options.

ACTION DESCRIPTION

Residential units in dense developments use less energy per square foot than do single-family homes. Incorporating mixed uses (including office space and food service) in housing developments allows residents pedestrian access to local businesses and employment opportunities, further supporting the goal of limiting vehicle travel and potentially benefiting low-income populations who cannot afford personal vehicles. Transit-oriented development, which maximizes residential, business and leisure space within walking distance of public transit, reduces passenger vehicle use and promotes active mobility. Typical transit-oriented development incentives seek to boost development within a quarter- or half-mile radius of transit stops. Locating this development in infill areas preserves undeveloped spaces and reduces the financial investment, energy, and materials required to construct and maintain new infrastructure.

To further progress this action, the City will consider developing and implementing an incentive program to encourage density and promote new construction. A variety of options can be considered for this action, including providing density bonuses to new development projects, as well as subsidies, fast track processing, tax abatements, fee waivers, reductions and deferrals.

Due to a lack of current information for data analysis, the potential for GHG reduction for this action is not available. As the action is further developed, more data may be available.

More information on this action can be found in Appendix A: Implementation Roadmaps.

Water Conservation and Waste Reduction Actions

GOAL:

CONSERVE WATER IN OUR BUILDINGS AND LANDSCAPES

Actions in this goal area seek to reduce water use in buildings and landscapes. These actions address climate-ready private landscapes, public lawns, water pricing, greywater reuse and pool water consumption.

Water conservation and waste reduction actions have equity benefits and co-benefits. Further analysis of equity considerations will be part of action development, but some considerations for these actions are provided here:

Equity Issues:

- Programs such as rebates that require upfront investment are less accessible to low-income populations, for whom the cost of landscaping poses a greater burden.
- Renters may not have the right to alter property landscaping or appliances under the terms of their lease agreement.
- Some community members may face additional challenges in understanding and responding to this action due to language barriers or lack of access to technology and resources.
- Landlords may pass on the costs of landscape and watering infrastructure alterations to renters in the form of higher rents. However, this may be partially offset by lower water bills.

Equity Solutions:

- Program design and implementation should expressly consider accessibility by renters and low-income and vulnerable populations, including Environmental Justice communities as defined in the Vulnerability Assessment.
- Communications regarding this action should accommodate community members' language and access needs

Action WW.1.

Climate-ready private landscapes

Lead City Department	Key Partners	Time Frame Planning: 0-4 years	Time Frame Implementation: 16 years	Staff Support Required	Municipal Capital Cost	GHG Reduction	Climate Hazards Addressed	Co-Benefits
PWUO PCS	Tree Davis UC Davis Community members				\$ \$		 	

GHG Reduction Potential: **2030:** 50 MT CO₂e/yr **2040:** 0 MT CO₂e/yr
 (2040 reduction is less than 50 CO₂e/yr and rounded down to 0 for CAAP purposes)

Develop financing/incentive options with specific provisions for low-income and vulnerable populations that promote climate-ready private landscapes, such as installing drought tolerant, native, climate-ready plants and/or xeriscaping; programs that support turf removal; installing rainwater capture and harvesting equipment; and the use of green stormwater measures to enhance natural water infiltration.

ACTION DESCRIPTION

An objective of this action is to provide guidance and incentives for Davis residents, property owners and landlords to make informed climate-ready landscape decisions as part of the city’s landscaping ethos. Private landscapes represent a large component of Davis’s environment. The City is already pursuing climate-ready landscape concepts and plant choices in parks, streetscapes, master tree lists and the upcoming Urban Forestry Management Plan. Unlike the water conservation actions robustly pursued by City policies and programs, private landscapes are not addressed by any other City policies. This CAAP action provides the opportunity for education and outreach about climate-ready landscapes to the Davis community.

California experiences periods of prolonged drought, which is expected to increase in frequency and duration due to climate change. In response, lawn irrigation restrictions are a common tactic that cities implement during droughts to conserve water for more urgent uses, but irrigation demand tends to rebound once those temporary restrictions are lifted.

Street and residential trees can shade buildings and reduces heat gain during the summer, reducing cooling/air conditioning needs. Rain capture can also provide deep winter watering that will support trees in the summer and encourage downward root growth.

To reduce outdoor water demand more permanently, many cities offer rebates and incentive programs that encourage property owners to implement climate-friendly landscape designs that can significantly reduce water use from irrigation. These designs can include drought-tolerant and native plants, low-water xeriscaping elements (like succulents and cacti), turf removal and rainwater capturing or harvesting. The strategies can also include green stormwater elements to improve water infiltration back into the ground.

To implement this action, the City will pursue the development of financing and incentive options (local via State programs) to encourage private property owners to install climate-resilient landscaping. The eventual financing and incentive program will make specific provisions for low-income and vulnerable populations as feasible based on fund type and source.

More information on this action can be found in Appendix A: Implementation Roadmaps.



GOAL: REDUCE WASTE GENERATION AND INCREASE DIVERSION AWAY FROM LANDFILLS

The City of Davis is currently implementing actions in response to Senate Bill 1383 and other waste and organics related legislation. Although waste reduction is an important component of climate action, no actions were prioritized as part of the CAAP process, largely because this work is being done through other programs and as required by State law. Additionally, waste-related actions primarily address GHG emissions that are not currently represented in the City's inventory, such as reducing upstream emissions associated with manufacturing goods consumed by residents and businesses, and many of these actions are already required by State law. Although these actions are critical to addressing emissions globally, they are not reflected in current community-based emissions inventorying standards. Future changes to emissions reporting practices could change the prioritization of these actions.

Climate Adaptation Actions

GOAL:

CREATE A COOLER CITY WITH MORE URBAN FOREST AND GREEN SPACE FOR PEOPLE AND HABITAT

Actions in this area aim to adapt the City of Davis to rising temperatures resulting from climate change and to reduce the urban heat island effect by creating a cooler city through trees, parks, cool surfaces, green roofs and community gardens in public and private space.

Climate adaptation actions have equity benefits and co-benefits, including public health, air quality, and climate risk reduction. Further analysis of equity considerations will be part of action development, but some considerations for these actions are provided here:

Equity Issues:

- If actions increase construction costs and thereby housing costs, the burden will be greatest for low-income populations.
- Some community members may face additional challenges in understanding and responding to this action due to language barriers or lack of access to technology and resources.
- Without attention to equitable distribution of tree planting, tree installation may systematically occur in higher-income neighborhoods.

Equity Solutions:

- Communications regarding this action should accommodate community members' language and access needs.
- Program design and implementation should consider costs for renters, low-income, and vulnerable populations
- Program design and implementation should prioritize tree installation and replacement in Environmental Justice communities as defined in the Vulnerability Assessment.
- Ensure that tree planting occurs in areas frequented by renters, low-income residents, and unhoused people.

Action AD.1.

Cool surfaces

Lead City Department	Key Partners	Time Frame Planning: 0-4 years	Time Frame Implementation: 16 years	Staff Support Required	Municipal Capital Cost	GHG Reduction	Climate Hazards Addressed	Co-Benefits
PWET PWUO CD	SMAQMD (research)				\$			

GHG Reduction Potential: **2030:** 50 MT CO₂e/yr **2040:** 150 MT CO₂e/yr

Develop ordinance(s) to require the use of cool surfaces, reflective materials, coatings, and other emerging technology to reduce the heat island effect. Include building (roof, walls, windows, paint etc.) and transportation (road/bike path surfaces, shade, etc.) measures.

ACTION DESCRIPTION

Cool surfaces (such as cool roofs and cool walls) are designed to absorb less heat than standard surfaces, resulting in cooler building interiors during the summer and reducing energy demand and associated GHG emissions from air conditioner use. In addition, by reducing heat transfer from buildings to the air, use of cool building technology can curtail the urban heat island effect. The City currently has a cool roof ordinance that states that, re-roof projects are required to comply with cool roof requirements when more than 50% of a roof is replaced, as per the provisions of the 2013 California Energy Code.

To undertake this action, the City will start with pilot projects to understand local experience and develop data. Alternative materials and surfaces may have higher upfront costs. It is important to evaluate user experiences feedback based on pilot implementation. Long-term costs, wear, and glare are uncertain for ground application of cool surfaces (parking lots, roads, walk and bikeways) and thus should be piloted and deployed based on experience, lesson learned from other cities, and data since

Following analysis of pilot project data, the City will develop one or more ordinances that require the use of cool building and roadway technology such as cool surfaces, reflective materials, and coatings. Cool roofs and other cool building surface implementation can begin earlier as these materials are well known and supported by data and research for their reduction of building heat load. The ordinance(s) could require a percentage of total hardscape and roof area to have a minimum albedo rating.

Note that shading, especially with trees or solar, should be considered as an alternative, including for smaller paved areas where cool surfaces may not be cost-effective.

More information on this action can be found in Appendix A: Implementation Roadmaps.

Action AD.2.

Urban forest

Lead City Department	Key Partners	Time Frame Planning: 0-4 years	Time Frame Implementation: 16 years	Staff Support Required	Municipal Capital Cost	GHG Reduction	Climate Hazards Addressed	Co-Benefits
PWUO	Tree Davis							

GHG Reduction Potential: **2030:** 150 MT CO₂e/yr **2040:** 500 MT CO₂e/yr

Expand urban forest in parks, greenbelts, and open space with climate-ready species that provide shade. Develop a tree-replacement plan for all City trees, based on assessment of age, and vigor. Provide educational materials to community members to encourage planting and care of climate-ready private trees and landscapes.

ACTION DESCRIPTION

The City has completed the Open Space Strategic Plan (2018) and is currently completing the Urban Forestry Management Plan update and planning documents for Parks and Community Services related to trees, parks and open space. This action supports those efforts.

Trees reduce greenhouse gas emissions by sequestering carbon in addition to the multiple co-benefits offered by a robust urban forest. Trees shade buildings, helping to regulate building temperature and reducing the need for air conditioning. Trees in parks and greenbelts enhance recreation spaces and provide wildlife habitat. Trees also help to manage stormwater runoff flows, improve property values, and have been shown to reduce stress and improve moods.

To operationalize this action, the City will continue to work with its partners, such as Tree Davis, to expand the urban forest in parks, greenbelts, and open space. Tree species selection will prioritize climate resilience and shade provision. In addition, the City will develop a citywide tree-replacement plan for street trees that are removed for safety concerns or other reasons.

More information on this action can be found in Appendix A: Implementation Roadmaps.



GOAL: PROTECT PUBLIC HEALTH AND SAFETY FROM EXTREME HEAT AND WILDFIRE SMOKE

Actions in this area seek to address negative health outcomes due to climate hazards including extreme heat and wildfire smoke by encouraging policies and programs for air filtration and air conditioning. Although air quality and protection from wildfire smoke is reduction is an ever-increasing concern and an important component of climate adaptation, no actions were prioritized as part of this CAAP development process but should be considered for the CAAP update in 2025.

GOAL: PROTECT PUBLIC HEALTH, SAFETY, AND INFRASTRUCTURE AGAINST DAMAGE AND DISRUPTION FROM FLOODING

Actions in this area seek to protect public health and safety, as well as infrastructure, from the impacts of flooding.

Some equity considerations within this goal area are as follows:

Equity Issues:

- Improvements to public infrastructure may fail to fairly address the needs of Environmental Justice communities as defined in the Vulnerability Assessment.
- Implementation of many City programs and plans (Action AD.5) involve changes to physical infrastructure, which may inadequately prioritize the needs of Environmental Justice communities as defined in the Vulnerability Assessment.
- Without attention to equitable protection, infrastructure improvements may systematically occur in higher-income neighborhoods.
- Some community members may face additional challenges in understanding and responding to this action due to language barriers or lack of access to technology and resources.

Equity Solutions:

- Green infrastructure installation and flood infrastructure improvements should be piloted in Environmental Justice communities as defined in the Vulnerability Assessment.
- Prioritize infrastructure based on physical risk (probability), consequences of events, and abilities of the affected populations to adapt to the events.
- Communications regarding this action should accommodate community members' language and access needs.

Action AD.3.

Green stormwater infrastructure

Lead City Department	Key Partners	Time Frame Planning: 0-4 years	Time Frame Implementation: 16 years	Staff Support Required	Municipal Capital Cost	GHG Reduction	Climate Hazards Addressed	Co-Benefits
PWUO CD CMO: Sustainability	UC Davis (research)				\$			 

Develop policies to increase the use of green stormwater infrastructure and enhance natural water infiltration in public infrastructure.

ACTION DESCRIPTION

Excessive urban runoff pollutes water supplies, causes erosion, and heightens flood risk. Captured urban runoff is costly to treat. Green stormwater infrastructure, which is designed to allow rainwater to infiltrate where it falls, offers an opportunity to mitigate flood risk and improve water quality. Green infrastructure includes both landscape design elements such as landscaped swales to capture runoff and allow infiltration, and technological elements such as porous surfaces for streets, sidewalks and parking lots.

For this action, the City will develop policies to expand the use of green stormwater infrastructure. In addition to compliance with the City’s National Pollutant Discharge Elimination System permit, which requires qualifying properties to install stormwater treatment and attenuation facilities to capture and filter storm flows, the City will provide outreach and information to non-qualifying properties to encourage the installation of green stormwater features. Finally, the City will undertake improvements to natural water infiltration in public infrastructure.

Because this is primarily an adaptation action with limited GHG reduction potential and lack of data for analysis, no GHG reduction metrics are provided.

More information on this action can be found in Appendix A: Implementation Roadmaps.

Action AD.4.

Flood resilience of critical infrastructure

Lead City Department	Key Partners	Time Frame Planning: 0-4 years	Time Frame Implementation: 16 years	Staff Support Required	Municipal Capital Cost	GHG Reduction	Climate Hazards Addressed	Co-Benefits
PWUO CMO: Sustainability	Caltrans YCFCWCD				\$ \$ \$			

Relocate/elevate or otherwise address flooding issues and concerns for critical public infrastructure in projected flood areas.

ACTION DESCRIPTION

The Vulnerability Assessment identified that critical infrastructure lies within the 100-year floodplain and is vulnerable to flooding, including Sutter Davis Hospital, potable water wells, all five of the City’s stormwater pump stations, approximately one mile of Highway 113 and more than 13 miles of City streets. Additionally, flooding is likely to impact multiple community assets, such as the Davis Arts Center, two churches and two assisted living/retirement facilities.

Climate change effects on precipitation intensities are uncertain, but storm intensities will likely increase, leading to increased flood risk and frequency as well. Though flooding in Davis has largely consisted of localized shallow flooding, it could potentially worsen, and the City should act with deliberate speed on understanding the risks and preparing plans. Additional hydrologic and hydraulic analysis of watersheds and drainages that flow through Davis, accounting for future projected changes in precipitation, would be required to conduct a more detailed evaluation of future flooding vulnerabilities. To address equity, project locations should be prioritized in EJ communities and ranked according to vulnerability, risk, consequences.

To implement this action, the City will design facility upgrades, relocate, or elevate city-owned critical infrastructure out of likely flood areas. The City will promote flood resilience of other critical infrastructure as well, such as by coordinating with Sutter Davis Hospital, Yolo County, Caltrans and others. Different infrastructure elements will require different approaches depending on the type of asset, the other stakeholders involved, and local geography.

Due to a lack of information for data analysis, the potential for GHG reduction for this action is not available. As the action is further developed, more data may become available.

More information on this action can be found in Appendix A: Implementation Roadmaps.

GOAL:

PREPARE AND RESPOND TO CLIMATE HAZARDS TO ENSURE THAT THE CITY IS EQUIPPED TO ADDRESS CURRENT AND FUTURE CHALLENGES

The actions in this goal area address climate vulnerabilities through water management and conservation, urban forestry, and other public services and resources.

Some equity considerations within this goal area are as follows:

Equity Issues:

- Implementation of many City programs and plans involve changes to physical infrastructure, which may inadequately prioritize the needs of Environmental Justice communities as defined in the Vulnerability Assessment.
- Low-income and vulnerable populations may face financial, technological and logistical barriers that limit their ability to access these resources.
- Some community members may face additional challenges in understanding and responding to this action due to language barriers or lack of access to technology and resources.

Equity Solutions:

- Flood infrastructure improvements should be piloted in Environmental Justice communities as defined in the Vulnerability Assessment.
- Communications regarding this action should accommodate community members' language and access needs.

Action AD.5.

Funding and staffing for existing efforts

Lead City Department	Key Partners	Time Frame Planning: 0-4 years	Time Frame Implementation: 16 years	Staff Support Required	Municipal Capital Cost	GHG Reduction	Climate Hazards Addressed	Co-Benefits
PWUO	State and regional agencies						 	

GHG Reduction Potential: **2030:** 5,900 MT CO₂e/yr **2040:** 11,200 MT CO₂e/yr

Allocate funding and staff resources to aggressively implement important existing climate-related programs, policies and management, such as City utility infrastructure (water, wastewater and stormwater) and assets (trees, streets, etc.) Continue to conduct assessments at regular intervals to ensure efficient and effective operations that are at pace with industry improvements, and changing needs due to climate change impacts, and implement recommendations in the assessments as technologically and financially feasible.

ACTION DESCRIPTION


The City has created several climate-related plans, policies and programs to address crucial needs for climate adaptation and mitigation. However, a lack of funding and staff resources has slowed implementation efforts. The plan, policies and programs cover multiple topics, including water management and conservation, urban forestry and solid waste reduction programs.

Under this action, the City will allocate funding and staff resources for aggressive implementation of these plans. To improve likelihood of success, the City will review its existing list of policies/programs that have not yet been implemented and prioritize action based on urgency of the topics addressed and availability of funding sources, including those sources identified in Appendix B, the CAAP’s Funding and Finance Memo.

More information on this action can be found in Appendix A: Implementation Roadmaps.

Action AD.6.

Public resources during extreme weather events

Lead City Department	Key Partners	Time Frame Planning: 0-4 years	Time Frame Implementation: 16 years	Staff Support Required	Municipal Capital Cost	GHG Reduction	Climate Hazards Addressed	Co-Benefits
PWUO PCS SSH CMO: Sustainability	YSAQMD				\$		 	  

Develop policies to expand existing public services and resources provided by the City and community-based organizations during extreme weather events, such as high wind, air quality (smoke), cooling, and weather relief centers.

ACTION DESCRIPTION

As extreme weather events grow more frequent and severe under climate change, municipalities and community-based organizations are called upon to offer protective measures to residents. These measures can include cooling and weather relief centers to protect vulnerable residents during extreme heat events and offer safe indoor air quality during wildfire smoke events.

Under this action, the City will create policies to expand the provision of these public services and resources. Additionally, implementation of this action will benefit from coordination with surrounding communities, such as through organization of a regional task force on climate change actions. Equity issues are a driving factor for this action, as vulnerable communities are likely to benefit most from additional resources and services during extreme weather events. As such, vulnerable community members should be intimately involved in planning processes. In addition, this action will go beyond equity by benefiting all members of the community.

Because this is primarily an adaptation action with limited GHG reduction potential and lack of data availability for analysis, no GHG reduction metrics are provided.

More information on this action can be found in Appendix A: Implementation Roadmaps.

Carbon Removal Actions

GOAL: DEMONSTRATE CLIMATE LEADERSHIP THROUGH INNOVATION, EDUCATION, AND INVESTMENT

Actions in this area support climate leadership through innovation, education, and investment. These actions relate to carbon sequestration research and carbon farming, the promotion of plant-based diets, green investments, and fossil fuel divestment. Carbon removal actions have equity benefits and co-benefits. Further analysis of equity considerations will be part of action development, but some considerations for these actions are provided here:

Equity Issues:

- Tree planting efforts are usually implemented in wealthier neighborhoods, further increasing climate disparities across income levels.
- Some community members may face additional challenges in understanding and responding to this action due to language barriers or lack of access to technology and resources.

Equity Solutions:

- Tree planting as a carbon removal strategy should be prioritized in Environmental Justice communities as defined in the Vulnerability Assessment.
- Communications regarding this action should accommodate community members' language and access needs.

Action CR.1.

Carbon sequestration and removal

Lead City Department	Key Partners	Time Frame Planning: 0-4 years	Time Frame Implementation: 16 years	Staff Support Required	Municipal Capital Cost	GHG Reduction	Climate Hazards Addressed	Co-Benefits
CMO: Sustainability	CARB YSAQMD SMAQMD				\$			

Develop policies to implement carbon sequestration and removal opportunities the City can pursue to balance remaining emissions by 2030/2040.

ACTION DESCRIPTION

Carbon dioxide removal (CDR) is the process of physically removing GHGs such as carbon dioxide from the atmosphere. Natural examples of CDR include forest restoration and soil management, which is also known as carbon sequestration. Industrial CDR mechanisms include direct air capture of GHGs from the atmosphere and using bioenergy with carbon capture and storage. While few examples of commercial-scale direct air capture currently exist, the technology is rapidly developing and municipalities may have increasing opportunities to jointly fund these technologies in the future.

Under this action, the City will explore and evaluate opportunities to maximize local/regional carbon sequestration and removal to help balance the City’s remaining emissions in 2040. Based on initial analysis in the CAAP update, it is unlikely that the City has sufficient land area within its boundary to fully balance its estimated remaining emissions in 2040 through natural strategies alone. However, the City can collaborate with regional partners such as Yolo County, which is seeking to achieve a carbon negative footprint by 2030 and has a significantly greater land area for carbon sequestration projects. This regional partnership can also include research into industrial carbon removal technologies and opportunities for a local pilot project to demonstrate proof of concept as a strategy for other local governments to pursue once their GHG mitigation action options have been exhausted. The City will use its findings and recommendations to advance actions in this area.

Due to a lack of current information for data analysis, the potential for GHG reduction for this action is not available. As the action is further developed, more data may become available.

More information on this action can be found in Appendix A: Implementation Roadmaps.

Action CR.2.

Carbon farm plans

Lead City Department	Key Partners	Time Frame Planning: 0-4 years	Time Frame Implementation: 16 years	Staff Support Required	Municipal Capital Cost	GHG Reduction	Climate Hazards Addressed	Co-Benefits
CD: Open Space	YCRCD				\$			

GHG Reduction Potential: **2030:** 1,450 MT CO₂e/yr **2040:** 1,450 MT CO₂e/yr

Develop carbon farm plans for City-owned agricultural land and seek grant funding to implement recommended strategies for maximum carbon sequestration.

ACTION DESCRIPTION

Carbon farming enhances carbon capture on working lands. Carbon farming may involve different techniques, including compost application, conservation tillage and use of cover crops, among others.

Under this action, the City will create plans for carbon farming on City-owned agricultural land. The City will seek grant funding to implement preferred strategies to maximize carbon sequestration, and will share its lessons learned from the program with private agricultural landowners in the city with the goal to expand carbon farming citywide. This action provides important opportunities to strengthen City / UC Davis collaboration with leading researchers on this topic available to help guide the City's program design. It also provides an opportunity for information sharing with Yolo County as it pursues and aggressive carbon negative target by 2030.

More information on this action can be found in Appendix A: Implementation Roadmaps.

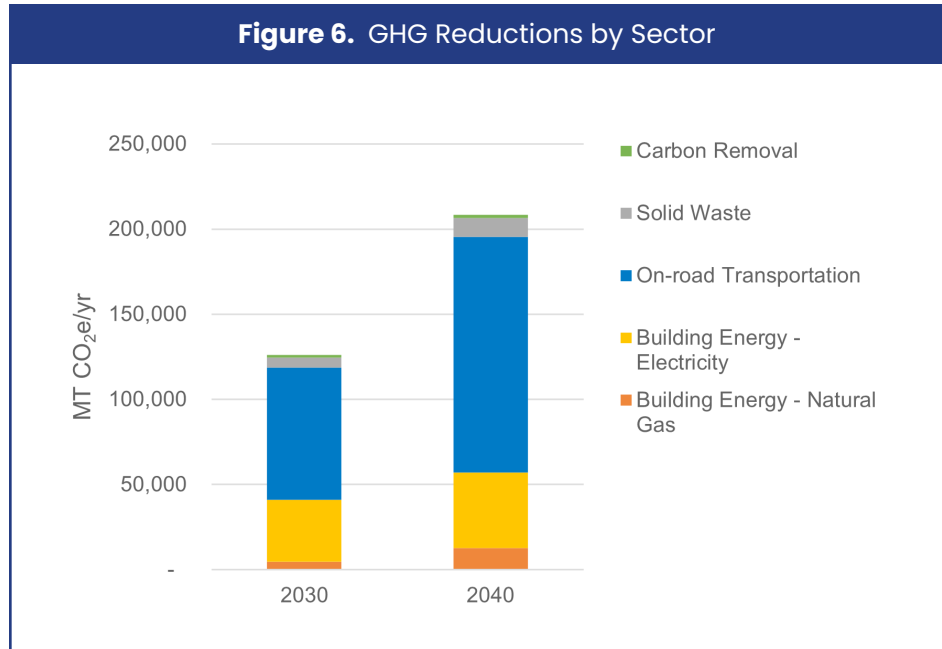
Table 7 summarizes the 2030 and 2040 GHG reduction estimates from the 28 prioritized CAAP actions.

Table 7. Summary of GHG Reductions from Prioritized Actions			
ACTION #	ACTION TITLE	2030 GHG REDUCTIONS (MT CO₂e/yr)	2040 GHG REDUCTIONS (MT CO₂e/yr)
Building Energy and Design (BE Actions)			
BE.1	Building electrification when permit is needed or when appliance is replaced (Voluntary) ¹	1,700	4,300
BE.2	Building electrification for existing buildings (Voluntary)	550	1,250
BE.3	Energy efficiency and ventilation in rental properties ¹	850	2,250
BE.4	All-electric new construction	1,650	4,950
BE.5	Community solar energy	35,300	43,350
BE.6	Carbon mitigation fund	N/A ²	N/A
BE.7	Renewable energy in City facilities	750	950
BE.8	Create community microgrids and resiliency hubs	N/A	N/A
Transportation and Land Use (TR Actions)			
TR.1	Electric Vehicle Charging Plan	55,500	117,250
TR.2	Decarbonize municipal fleet	550	1,100
TR.3	“First mile/Last mile” transportation	N/A	N/A
TR.4	Electric micromobility vehicles	200	150
TR.5	Pedestrian and bicycle safety	N/A	N/A
TR.6	Expand public transit	2,050	2,000
TR.7	Strengthen regional transit	1,800	1,700
TR.8	Downtown parking improvements	14,850	13,200
TR.9	Transportation Demand Management (TDM) program	2,850	2,700
TR.10	Low Emissions Vehicle Program	N/A	N/A
TR.11	Develop sustainable housing	N/A	N/A
Water Conservation and Waste Reduction (WW Actions)			
WW.1	Climate-ready private landscapes	50	—
Climate Adaptation (AD Actions)			
AD.1	Cool surfaces	50	150
AD.2	Urban forest	150	500
AD.3	Green stormwater infrastructure	N/A	N/A
AD.4	Flood resilience of critical infrastructure	N/A	N/A
AD.5	Funding and staffing for existing efforts	5,900	11,200
AD.6	Public resources during extreme weather events	N/A	N/A
Carbon Removal (CR Actions)			
CR.1	Carbon sequestration and removal	N/A	N/A
CR.2	Carbon farm plans	1,450	1,450
	Total	126,200	208,450

¹Actions BE.1, BE.2 and BE.3 are quantified based on voluntary compliance and implementation. If ordinances to require electrification are developed in the future, significantly greater GHG emission reductions may be realized.

²GHG reductions marked N/A could not be quantified due to a lack of information for data analysis or because the action is adaptation oriented with no GHG reduction potential.

Figure 6 illustrates the estimated CAAP action GHG reductions in 2030 and 2040 organized into emissions categories that approximately align with the GHG inventory. As shown, the greatest reductions in both years are attributed to on-road transportation (blue) which is largely associated with the estimated adoption of EV and other zero-emission vehicle technology. The second greatest source of reductions is from building energy electricity (light orange), which reflects Davis' participation in Valley Clean Energy and the expectations for its zero-carbon energy mix by 2030. The third greatest source of reductions is from solid waste (gray) actions followed by building energy natural gas (dark orange) and local carbon removal opportunities (green).



Estimated 2030 GHG Reduction Trajectory

Implementation of all priority actions is estimated to reduce community-wide emissions by 126,000 MT CO₂e/yr in 2030 below the emissions forecasts. As shown in **Table 8**, this would result in emissions that are 37% below 2016 levels and an estimated emissions intensity of 7.0 MT CO₂e/capita/yr.

This current estimate falls short of the City’s minimum 2030 GHG target (i.e., 40% below 2016 levels) and the aspirational goal to achieve an emissions intensity level of 5.2 MT CO₂e/capita/yr.

Table 8. 2030 GHG Targets and CAAP Scenario Results

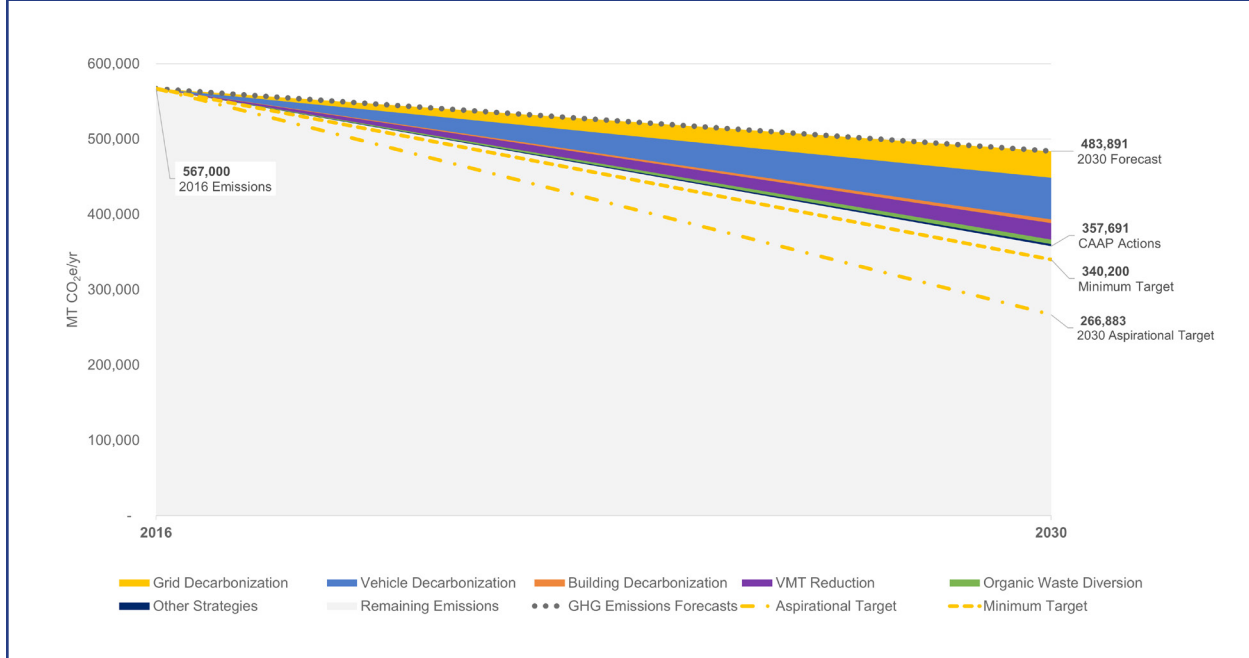
	2030 MINIMUM TARGET	2030 ASPIRATIONAL TARGET	2030 SCENARIO WITH CAAP ACTIONS
Total Emissions (MT CO₂e/yr)	340,200	266,883	357,691
2030 Population Estimate (Excluding UC Davis)¹	51,324	51,324	51,324
Emissions Intensity (MT CO₂e/capita/yr)	6.6	5.2	7.0
% below 2016 Levels	40%	53%	37%
Target Achieved?	NO	NO	—

¹Population estimate excludes UC Davis households as the university’s VMT contributions are excluded from the CAAP analysis; population is calculated based on non-UC Davis household estimates from SACOG’s SACSIM19 travel demand model and persons per household values from the California Department of Finance (2016).

CLOSING THE 2030 GHG TARGET GAP

Figure 5 illustrates the impact of the CAAP actions when applied to the GHG emissions forecasts for 2030. In this figure, the top dotted line shows the emissions forecast scenario described in Chapter 3 and the lower dashed lines illustrate the GHG targets trajectories. The colored wedges represent the amount of GHG reductions estimated to occur from CAAP action implementation organized within six broad strategy areas – Grid Decarbonization, Vehicle Decarbonization, Building Decarbonization, VMT Reduction, Organic Waste Diversion, and Other Strategies – while the light gray area represents the remaining GHG emissions. As shown, the colored wedges do not reach the minimum or aspirational 2030 targets, indicating that neither target will be achieved and that additional effort will be needed to close the GHG reduction gaps.

Figure 7. 2030 GHG Reductions from Priority Actions



The aspirational 2030 target achievement gap illustrated in Figure 6 is approximately 90,800 MT CO₂e/yr, and multiple factors will influence the City’s ability to achieve it. The state may implement new or more aggressive GHG reduction programs to achieve the SB 32 GHG target (i.e., 40% below 1990 levels by 2030). New GHG-reducing technology may be developed, or uptake of current technology might exceed the estimates included in the CAAP analysis, such as EV adoption rates. CAAP action implementation could occur at a higher rate than initially assumed in the GHG reduction estimates, or the City could develop additional GHG reduction actions focused on the 2030 target year.

The CAAP development process prompted communitywide discussion about the best approach to climate action, including a discussion about community values as it relates to new mandatory policies versus incentivized voluntary approaches. As a result of this community debate, City Council opted to remove mandatory implementation approaches in this version of the CAAP in favor of incentives and education to promote voluntary implementation of actions. City Council also stated its expectation that community discussions about implementation approaches should continue as part of the CAAP monitoring and updating process based on the community’s progress toward its GHG targets.

With all these moving pieces contributing to the City’s GHG emissions context, regular GHG emissions inventories, implementation monitoring, and evaluation will be important to staying on course toward the targets. Chapter 5 presents a framework for this ongoing effort.

Estimated 2040 GHG Reduction Trajectory

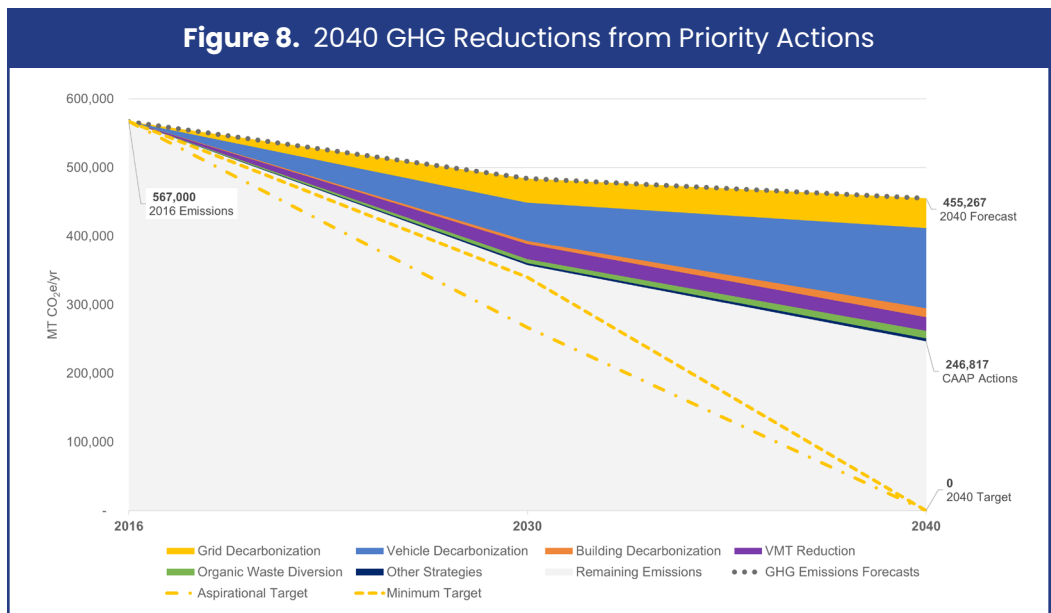
Implementation of all priority actions is estimated to reduce community-wide emissions by 208,450 MT CO₂e/yr in 2040 below the emissions forecasts. As shown in **Table 9**, this would result in emissions that are 44% below 2016 levels and an estimated emissions intensity of 4.6 MT CO₂e/capita/yr. This current estimate falls well short of the City's goal to achieve carbon neutrality by 2040 (or 100% below 2016 levels at an emissions intensity level of 0.0 MT CO₂e/capita/yr.). However, there is ample time between CAAP adoption and the 2040 target year to identify new actions or improve participation rates and implementation of current actions to close the target achievement gap even more. Additionally, the CAAP analysis provided an important foundation for planning more aggressive long-term actions, including insights into what emission sources are likely to remain in 2040 so that new actions or collaborative partnerships can be strategically developed.

Table 9. 2040 GHG Target and CAAP Scenario Results

	2040 TARGET	2040 SCENARIO WITH CAAP ACTIONS
Total Emissions (MT CO₂e/yr)	0	246,817
2040 Population Estimate (Excluding UC Davis)¹	54,165	54,165
Emissions Intensity (MT CO₂e/capita/yr)	0.0	4.6
% below 2016 Levels	100%	64%

¹Population estimate excludes UC Davis households as the university's VMT contributions are excluded from the CAAP analysis; population is calculated based on non-UC Davis household estimates from SACOG's SACSIM19 travel demand model and persons per household values from the California Department of Finance (2016).

Figure 8 illustrates the CAAP actions through 2040. As shown, the 2030 target options converge onto the 2040 carbon neutrality target. Implementation of the priority CAAP actions will achieve emissions levels of approximately 247,000 MT CO₂e/yr, 44% below 2016 levels. As shown, the colored wedges do not reach the minimum or aspirational 2040 targets, indicating that neither target will be achieved and that additional effort will be needed to close the GHG reduction gaps.



4.5.1 Remaining Emissions by Source in 2040

The CAAP priority actions start the City on a trajectory toward the 2040 carbon neutrality target. However, as shown in the previous section the estimated implementation of this current set of actions would not achieve the City's target. Further, predicting the future through 2040 is not possible with accuracy, and there is likely a role for:

- new technology to be developed and deployed,
- enhanced state and federal programs to be implemented in pursuit of GHG targets at both levels of government,
- regional collaboration opportunities,
- greater progress on implementing the current suite of CAAP actions, and
- new or enhanced local climate actions to increase participation within the community.

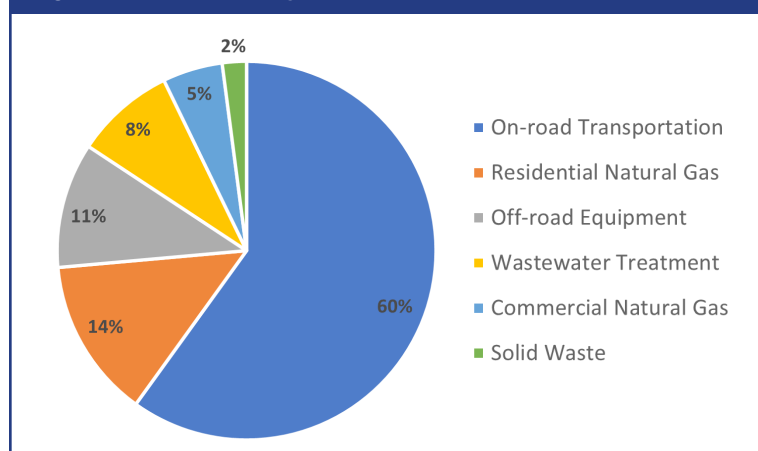
This section describes the estimated remaining emissions sources in 2040 after implementation of the current CAAP priority actions and will be useful in framing the City's future efforts toward carbon neutrality. As with the 2030 GHG reduction trajectory, the 2040 scenario should be continually re-evaluated based on new information to refine the estimates of the amount of source of remaining emissions that need to be reduced.

Figure 9 illustrates the estimated remaining GHG emissions in 2040. As shown, nearly 60% are associated with on-road transportation. While the CAAP 2040 scenario assumes continued implementation of statewide vehicle efficiency programs, community EV adoption in line with industry forecasts and strategies to reduce total vehicle miles, these transformations are not anticipated to occur quickly enough to align with the City's aggressive 2040 carbon neutrality target. Residential natural gas is the second largest source of remaining emissions (14%). Remaining

emissions from off-road equipment (11%) and wastewater treatment (9%) are noteworthy because neither emissions source is currently addressed through a priority CAAP action. Industry trends from equipment manufacturers and state regulations will likely be important factors in decarbonizing off-road equipment over the long-term, and the City will continue to monitor both conditions in future CAAP updates to determine what additional local action could prompt an accelerated conversion of off-road vehicles and equipment in the community. Finally, commercial natural gas is estimated to contribute 5% of 2040 remaining emissions while solid waste contributes 2%. Solid waste emissions come from a combination of organic materials that are assumed to still be disposed in landfills and the effectiveness of receiving landfills at capturing methane emissions escaping from the landfill.

Of these remaining emissions, technology largely already exists to reduce the majority, including those from on-road transportation and some off-road equipment. Remaining emissions from wastewater treatment, solid waste and certain heavy-duty or specialized off-road equipment are technologically challenging to achieve zero emissions at the time of CAAP preparation. It is this kind of remaining emissions source that the City's carbon neutrality target intends could be neutralized through carbon sequestration or other carbon removal strategies. For illustrative purposes, if the City can fully reduce the estimated remaining emissions from all sources except wastewater treatment and solid waste, there would be approximately 27,000 MT CO₂e/yr remaining in 2040 to be neutralized through alternative actions.

Figure 9. Remaining GHG Emissions by Source in 2040



4.5.2 Removal/Sequestration Options

The City's carbon neutrality definition presented in Chapter 3 describes that the preferred approach to target achievement should be a hierarchy based on:

- Maximizing local GHG reductions through CAAP actions
- Sequestering carbon through natural processes, locally or within the region
- Removing carbon through industrial methods (e.g., direct air capture, carbon-embedded concrete)
- Use of carbon markets to purchase carbon credits

Two CAAP priority actions quantify sequestration benefits from known opportunities. Action AD.2 estimates reductions from expanding the urban forest in line with historic tree planting trends in Davis, which would total 500 MT CO₂e/yr in 2040, and Action CR.2 quantifies carbon sequestration from compost application on City-owned agricultural lands, which would total 1,450 MT CO₂e/yr in 2040. Combined, these two actions total nearly 2,000 MT CO₂e/yr compared to the best-case scenario described in the previous section in which 27,000 MT CO₂e/yr would remain from wastewater treatment and solid waste. One challenge with natural sequestration actions is the amount of land area required for significant reductions. However, if the City could expand implementation of Action CR.2 to all agricultural land within the City boundary, it could achieve additional reductions of approximately 17,500 MT CO₂e/yr, which would then bring the City very near its carbon neutrality target in this best-case scenario.

There may be an opportunity in which the City could help implement natural carbon removal actions regionally (within unincorporated Yolo County, for example, in support of the County's 2030 carbon negative goal), through which the City could reasonably attribute additional GHG reductions to its own carbon neutrality target. Exploration of industrial carbon removal technologies are another pathway that should be explored as described in Action CR.1. Pilot projects are under development around the globe for direct air capture facilities that can extract carbon dioxide directly from the air, and current designs operate at the removal scale of one million MT CO₂e/yr. As shown in Table 9, based on the CAAP 2040 GHG reduction scenario, Davis is estimated to have remaining emissions that total approximately 205,000 MT CO₂e/yr and a collaborative partnership in the region to fund and construct such a facility could be a shared mitigation strategy that helps multiple local jurisdictions demonstrate achievement of their carbon neutrality goals. Additionally, concrete manufacturers have developed concrete mixes that use sequestered CO₂ as a replacement for cement, and such CO₂-injected concrete mixes are already being used in US projects. Davis can continue to monitor and evaluate other new products and technologies designed to support carbon removal efforts.

4.5.3 Relationship to Implementation Monitoring

In recognition that projections necessarily include an element of uncertainty, Chapter 5 outlines the City's CAAP implementation and monitoring approach with provisions for updating the CAAP as new information becomes available. It will be important to monitor and update the CAAP considering future technologies, regulations, and funding sources, all of which may affect the City's emissions trajectory and achievement of its 2040 goal.

4.6 Additional Actions Identified during Community Outreach

This section includes additional actions that were also identified by community members during workshops or other outreach. These action ideas were included in the ASAP evaluation process but not prioritized for this CAAP. As such, they have not been reviewed or developed further, and may not necessarily be feasible or appropriate. They are included below, organized by goal area, as a means of retaining the ideas for potential future use. These actions may serve as a starting point for developing new CAAP actions once the initial prioritized actions are completed or underway.

Building Energy and Design Additional Actions

GOAL: TRANSITION TO HIGH EFFICIENCY, ZERO CARBON HOMES AND BUILDINGS

- **All-electric equipment replacement:** Pursue grant funding for replacement of existing gas equipment to all-electric as equipment fails for low-income residents (*included in approach to BE.1*)
- **Energy disclosure:** Establish an energy disclosure ordinance that requires building owners and homeowners to complete and publicly report comprehensive energy assessments prior to sale of a house or whole building (*included in approach to BE.2*)
- **Induction cooking:** Provide resources to promote induction cooking, such as test kitchens, incentives, and education
- **Zero-net energy:** Adopt a reach code to require zero-net energy new construction, including new City buildings
- **Development incentives:** Provide development incentives (e.g., density bonus) to projects that voluntarily achieve zero-net carbon design
- **City facilities as models:** Develop and fund a program for energy efficiency and electrification at all city facilities, and use as demonstration projects for businesses and residents, including installing energy efficiency and renewable energy elements such as solar, battery storage, LED lighting, etc., and providing visual meters for energy produced/saved, air quality information, and interpretive signage

GOAL: EXPAND LOCAL RENEWABLE ENERGY DEVELOPMENT AND STORAGE

- **Municipal solar:** Perform a feasibility assessment for new solar development on City buildings, parking lots, etc.
- **Private parking lot solar:** Develop partnerships with owners of large parking lots to encourage the installation of solar panel shade canopies and storage that are co-owned public/private
- **Solar standards:** Explore regulations to allow solar panels (for shade) above driveway, front yard, side yard etc.
- **Community solar:** Set up sites for community solar complexes, with preference for participation from low-income residents. Use VCE to organize these projects and deliver power to customers at fixed long-term prices
- **Renewable energy diversification:** Develop a strategy to diversify renewable energy sources in the City, including wind, wastewater treatment biogas, and biomass collection
- **Battery storage:** Develop financing/incentive options to support battery storage and demonstrate their feasibility, and include specific provisions for vulnerable populations
- **VCE energy portfolio:** Work with VCE to achieve a zero-carbon portfolio by 2030

Transportation and Land Use Additional Actions

GOAL: ADOPT ZERO EMISSIONS VEHICLES AND EQUIPMENT TO REDUCE FOSSIL FUEL USE

- **Electric car share:** Develop an electric car-to-go system as a component to reduce need for private car ownership
- **Incentivize EV adoption:** Identify a funding source to provide financial incentives for new alternative fuel vehicle purchases by residents and local businesses
- **EV charging rates:** Work with VCE to establish preferential electric vehicle charging rates to avoid disincentives to electric vehicle adoption (*note: this action may not be feasible*)
- **EV charging locations:** Develop a Right-to-Charge program to promote direct electric vehicle charger installations near homes or places of work for electric vehicle owners without access to charging, with an initial focus on locations with high rental unit concentrations
- **Banning leaf blowers:** Ban gas leaf blowers/require electric leaf blowers paired with a trade-in credit for gas blowers
- **Public funding requirements:** Require projects benefitting from public funds to use the best available off-road vehicle technologies to minimize GHG emissions, including electric and alternative fuel vehicle options
- **Municipal fleet:** Convert the municipal off-road vehicle and equipment fleet to electric and/or alternative fuel (*this action is included in TR.2*)

GOAL: INCREASE OPPORTUNITIES FOR ACTIVE MOBILITY IN THE COMMUNITY

- **Bike storage areas:** Provide centralized, monitored storage areas for all mobility devices (e.g., bikes, scooters), especially near high-activity destinations
- **Micro-transit:** Provide small scale, on-demand alternative fuel micro-transit (e.g., minibuses or vans) for intra-city trips through Davis Community Transit
- **Bike lanes:** Expand and improve active mobility infrastructure (e.g., bike lanes) to promote use and increase safety

GOAL: REDUCE SINGLE OCCUPANT VEHICLE USE

- **Carpooling:** Expand and promote a carpool program to reduce commute trips into/out of Davis
- **Parking maximums:** Establish parking space maximums for new residential development to limit parking supply
- **Unbundling parking costs:** Require parking space costs to be unbundled from housing costs

GOAL: EXPAND OPPORTUNITIES FOR LOCAL HOUSING DEVELOPMENT TO BALANCE LOCAL EMPLOYMENT OPPORTUNITIES

- **Zoning:** Utilize up-zoning, mixed-use zoning, and/or relaxed single-family zoning to allow for additional multifamily development
- **Shopping and services:** Evaluate existing shopping centers and commercial corridors to identify opportunities for mixed-use development to bring more people near services and energize existing centers

Water Conservation and Waste Reduction Additional Actions

GOAL: CONSERVE WATER IN OUR BUILDINGS AND LANDSCAPES

- **Water conservation:** Remove turf grass from public spaces to the extent feasible and replace with native, climate-ready, and drought tolerant landscaping and efficient irrigation systems
- **Water conservation:** Develop pricing mechanisms to disincentivize water waste
- **Greywater:** Develop financing/incentive options to promote the collection and reuse of greywater and recycled water in existing buildings, and include specific provisions for vulnerable populations
- **Greywater:** Develop policies that require greywater reuse in new construction and major remodels
- **Pools:** Develop financing/incentive options to reduce pool water consumption and energy use, and include specific provisions for vulnerable populations
- **Wastewater treatment:** Install a reclaimed water distribution system from the wastewater treatment plant (WWTP) to the City, and specifically to any high water users

GOAL: REDUCE WASTE GENERATION AND INCREASE DIVERSION AWAY FROM LANDFILLS

- **Food recovery:** Expand on the already-required City-County food recovery and redistribution program
- **Equipment sharing:** Implement equipment sharing programs for maintenance/repair tools, gardening equipment, bikes, etc.
- **Upcycling:** Promote local spring-cleaning upcycling events for residents, including increased bulky items vouchers
- **Waste reduction:** Replace or augment all waste bins at City parks/greenbelts with recycling and organics bins to reduce waste and separate the waste stream. This may mean removing single trash bins in some areas

Adaptation Additional Actions

GOAL: CREATE A COOLER CITY WITH MORE URBAN FOREST AND GREEN SPACE FOR PEOPLE AND HABITAT

- **Park Planning:** Update the Parks Management Maintenance Plan for public green spaces that considers plant selection for long-term climate resilience and sequestration benefits, expands drought tolerant greenbelts, and uses succession planting to replace existing greenbelts with drought tolerant and climate-ready species
- **Increased park requirements for new development:** Develop additional policies that require new green spaces in residential, multi-family housing, office, and commercial private developments
- **Shade:** Provide more non-natural shade in public spaces where trees cannot be planted
- **Cool surfaces:** Develop financing/incentive options to promote the use of cool surfaces, reflective materials, and coatings to reduce the heat island effect
- **Cool surfaces:** Develop financing/incentive options to promote the use of green walls and roofs on downtown buildings
- **Community gardens:** Increase community garden opportunities with priority for renters, and incorporate a garden management program

GOAL: PROTECT PUBLIC HEALTH AND SAFETY FROM EXTREME HEAT AND WILDFIRE SMOKE

- **Air filtration incentives:** Develop incentives for air conditioning and ventilation upgrades and indoor air filters to improve indoor air quality in buildings, and include specific provisions for low-income and vulnerable populations

GOAL: PROTECT PUBLIC HEALTH, SAFETY, AND INFRASTRUCTURE AGAINST DAMAGE AND DISRUPTION FROM FLOODING

- **Grant funding for infrastructure:** Pursue grant funding to support green infrastructure projects like urban forest management/expansion and sustainable stormwater management
- **WWTP levee:** Conduct analysis to determine if the levee surrounding the wastewater treatment plant would be accepted by the Federal Emergency Management Agency for flood protection from a 500-year storm event

GOAL: PREPARE AND RESPOND TO CLIMATE HAZARDS TO ENSURE THAT THE CITY IS EQUIPPED TO ADDRESS CURRENT AND FUTURE CHALLENGES

- **ASR:** Investigate aquifer storage and recovery (ASR) systems to capture and store excess river water for later use. Investigate the potential for augmenting aquifer storage with treated wastewater
- **Water access:** Install additional water fountains and undertake other actions (such as upgrading existing water fountains to include bottle fillers and dog water) to increase public access to water
- **Backup power:** Provide backup power for critical infrastructure, including traffic signals

Carbon Removal Additional Actions

GOAL: DEMONSTRATE CLIMATE LEADERSHIP THROUGH INNOVATION, EDUCATION, AND INVESTMENT

- **Plant-based diets:** Promote plant-based diets through education and outreach
- **Sustainability Center:** Develop “Sustainability Center” for information and services in downtown Davis (such as opportunities for up-cycling; metrics about how Davis is doing on greenhouse gas reduction, etc.).
- **Asset divestment:** Evaluate the City’s financial portfolio and divest assets from the fossil fuel industry
- **Green investments:** Utilize enterprise funds and revolving loan funds to finance green investments

CHAPTER 5.



Implementation and Monitoring Framework

5.1

City Organizational Structure to Implement and Monitor Sustainability and Climate Actions

The City recognizes the significance of providing an internal organizational structure to elevate and implement the identified CAAP actions. A multi-faceted, multi-disciplinary approach by both municipal and community organizations and individuals will be required to attain interim greenhouse gas reduction targets by 2030 and community carbon neutrality by 2040.

The City Manager is completing plans to house sustainability leadership functions in the City Manager's Office to facilitate interdepartmental direction and coordination across all departments to meet the City's CAAP goals. The Sustainability Manager, with supporting sustainability staff, will be primarily responsible for implementation and monitoring of the CAAP actions. This organizational structure will be developed further following the anticipated City Council adoption of the 2020-2040 CAAP in December 2022, including staffing details and an organizational chart.

Once climate action and adaptation measures are adopted, the City team will work closely with regional partners and jurisdictions on implementation and monitoring. The City will develop a CAAP-related contract with a grants management consultant to identify funding strategies and pursue CAAP grant opportunities. Additionally, the City will collaborate with community-based organizations and other City partners to implement community outreach, education and awareness of climate actions.

Implementation Roadmap Summary

The implementation roadmaps (Appendix A), developed in partnership with City of Davis staff, offer potential pathways to robust execution of each CAAP action. Each roadmap includes information on the amount of potential GHG emissions reductions and climate hazards that each action addresses, identifies related CAAP actions and action priority level, and outlines potential completion timelines, milestones, and performance tracking metrics. The roadmaps also include a high-level overview of opportunities to fund the required work via grants and other funding mechanisms, community outreach and education and other tools.

Implementation roadmaps are a starting point for implementation of each action and do not provide all necessary details. Each action will be developed further following CAAP adoption. Many actions have multiple components that are identified in the roadmaps, with as much information as is currently available. The relative priority and timeframe for each action are included in the roadmaps and summarized graphically in Figure 5

Roadmaps identify the lead department and likely key partners for implementation. Each action will likely have a planning and an implementation stage, although some actions may be able to be fully completed shortly after initiation, such as converting all municipal electricity accounts to 100% renewable energy (Action BE.7), and others may take significantly longer. For example, a transition plan for decarbonizing the municipal fleet (Action TR.2) may be completed in early 2023 (currently in progress in December 2022), but the complete conversion of all fleet vehicles to electric may take as long as ten years, and may partially depend on technology not yet developed, such as for electric heavy-duty machinery or emergency vehicles.

Some actions will require further community input and discussion, Commission review, or City Council adoption, especially for new or revised ordinances, and budget allocation or expenditures. Additionally, some action implementation may be dependent on other factors such as available resources, technology or statewide implementation guidance and support. Once the CAAP is adopted, the status of each action will be identified in the City's CAAP dashboard, which will be updated on a regular basis to provide accountability for progress to the community.

Funding and Financing Summary

As shown in Chapter 4, the CAAP includes 28 priority actions that range from capital-intensive projects like decarbonizing municipal buildings and the City vehicle fleet, to ongoing policies and programs like subsidized public transit and water conservation incentives. Capital-intensive projects will require large sums of upfront funding and agency resources, while policies and programs will require ongoing, annual funding and resources including staffing and consultant support. This section provides an overview and discusses key considerations for developing funding and financing strategies, including criteria for evaluating strategies and identifying funding needs and opportunities for each priority action. Additional opportunities and more detail on funding and financing tools, including specific local, state, and federal grants, bonds and loans, and existing consumer incentive programs, is provided in Appendix B.

KEY CONSIDERATIONS FOR DEVELOPING FUNDING & FINANCING STRATEGIES

5.3.1.1 Evaluation Criteria

When developing funding and financing strategies for the priority CAAP actions, the City of Davis should evaluate strategies based on the following criteria:

1. **Efficiency:** Environmental economists generally agree that the “polluter pays” principle is the most efficient means of curbing pollution at minimal cost to society. To the extent possible, financing mechanisms should place the burden of paying for decarbonization on emitting actors.
2. **Appropriateness of funding strategy for its use:** Ongoing climate action programs, such as household incentives or transit access programs, should be funded by ongoing revenue sources such as taxes or fees. Ideally, these revenue sources should be new and support climate action goals (see “economic efficiency”) so that spending on climate action does not come at the expense of other vital City priorities. On the other hand, large, capital-intensive projects may be better suited for grants and financing tools such as bonds that allow the City to issue debt (e.g., borrow money) to pay for investments upfront and repay over time.
3. **Equity:** The burden of paying for climate solutions should not disproportionately fall on low-income households. A funding strategy that creates regressive fees or taxes for low-income residents would not achieve the CAAP’s overarching goals of promoting community and social equity. Instead, wherever possible, policies should reduce costs and impacts, generate wealth, and create other economic opportunities for lower-income, Black, Brown, Indigenous and Asian communities. In addition, financing solutions should balance the “polluter pays” criterion with ensuring that the transition to a carbon neutral economy is equitable.
4. **Ease of administration:** Financing tools should be relatively easy for the City and/or its partners to administer. Funding and financing mechanisms should reflect the capabilities of the City and should enable the agency to achieve its level of service goals for its programs.

5.3.1.2 Action-Specific Issues & Opportunities

Each action has its own funding challenges and, of course, opportunities. Actions that require large upfront capital investment are likely to have a different funding strategy than actions that require ongoing funding and resources, such as staff and consultant time. Actions that generate revenue could fund themselves and, potentially, other actions. Meanwhile, funding and financing opportunities include bundling similar projects, which could be based on timing, geographic region or co-benefits.

FUNDING & FINANCING TOOLS

Common funding and financing sources for climate action projects and programs can be broadly categorized as (1) grants from local, state, and federal agencies, (2) revenue-generating tools, (3) fiscal policies and (4) private market financing strategies (e.g., debt instruments).

1.

Grants: Successful implementation of Davis' climate action priorities will require a strategy for securing grants that considers staff capacity, the competitive landscape (i.e., other entities from the region that may be pursuing the same grants), opportunities to collaborate across jurisdictions and bundle projects, annual funding priorities of each grant program, and Davis' ability to secure a local match, if required. The State of California and SACOG offer an array of mitigation- and resilience-related grants for which Davis' priority climate actions may be well-suited. Federal grants tend to offer larger dollar amounts per grantee than state and local grants but tend to have more requirements and lengthier application processes, which can be resource-intensive for the receiving entity.¹ Given this, federal grants are generally better suited for higher price tag projects, including regional projects, for which the grant can cover a significant portion. As an example, Governor Newsom's 2022-2023 budget and President Biden's Infrastructure Investment and Jobs Act both provided unprecedented funding for climate action so both state and federal grant opportunities should actively be explored. Grants that are especially relevant to the Davis CAAP are highlighted in Table 10. A full list of applicable local, state, and federal grants is provided in Appendix B. Where possible, actions that are likely to have grant funding opportunities in the short term are identified in Appendix A, Implementation Roadmaps.

2.

Revenue-generating tools: Local funding sources are essential for paying for ongoing programming and staffing needs, issuing debt, and securing grants that require a local match. The City of Davis and Yolo County can use a variety of revenue-generating tools to provide funding for their priority climate actions, ranging from revenue bonds to assessment districts to user fees. Each tool, however, has its own set of opportunities and drawbacks that may or may not make it a good fit for the priority actions proposed in the CAAP. These factors relate to timing, revenue-generating potential, political feasibility, administrative complexity, and equity. Where possible, actions that are likely to have return on investment and revenue generation opportunities are identified in the Implementation Roadmaps.

3.

Fiscal policies: Another key strategy for funding and financing the City's climate actions is to develop fiscal policies that support and reinforce its climate goals. Climate change creates a long-term financial obligation, in terms of mitigating, adapting, and responding to a climate crisis, and, as such, requires long-term fiscal planning. The City of Davis may consider developing a Climate Action Fund that allocates a portion of its General Fund to specifically fund climate mitigation and adaptation efforts. Additionally, some climate actions may provide economic development and job creation opportunities.

4.

Financing strategies: Issuing debt to fund projects is generally suitable for capital-intensive projects and, as such, may only be applicable to a subset of Davis' priority climate actions. Table 10 summarizes loan opportunities that are relevant to Davis' CAAP at the time of writing. Notably, the California Infrastructure and Economic Development Bank's Infrastructure State Revolving Fund can be used as a source of matching funds for grants or other financing needs.

¹The City of Davis received \$20 million in American Rescue Plan funding, which the City had already allocated to various uses at the time of this publication. Any remaining funding, however, could be used as match funding for climate action grants.

Table 10. Federal, State and Regional Grants
Most Applicable to Davis Priority Climate Actions (as of June 2022)¹

ADMINISTERING ORGANIZATION	PROGRAM/ GRANT NAME	DESCRIPTION
Federal Transit Administration	Low or No Emission Vehicle Program – 5339(c)	This Program provides funding to state and local government authorities for the purchase or lease of zero-emission and low-emission transit buses as well as acquisition, construction, and leasing of required support facilities.
Federal Highway Administration	National Electric Vehicle Infrastructure Formula (NEVI) Program	The NEVI Program is intended to provide funds to states to strategically deploy electric vehicle charging infrastructure and to establish an interconnected network to facilitate data collection, access, and reliability. Funds are apportioned to state governments and are in turn distributed to local government agencies.
California Energy Commission (CEC)	Clean Transportation Program	This program is intended to promote the development and deployment of advanced transportation and fuel technologies, including the development of fueling and charging infrastructure for low- and zero-emission vehicles, the adoption of alternative fuel and advanced technology vehicles, and the production of alternative low-carbon renewable fuel from low-carbon pathways.
CEC	Energy Partnership Program	This Program offers services to help identify the most cost-effective, energy-saving opportunities for buildings and new construction. These funds may be used to conduct energy audits, prepare feasibility studies, and develop equipment performance specifications, among other construction related plans.
California Department of Transportation	Sustainable Communities Grant	This grant program is intended to encourage local and regional planning that furthers state goals, including, but not limited to, the goals and best practices cited in the Regional Transportation Plan Guidelines adopted by the California Transportation Commission.
California Strategic Growth Council	Transformative Climate Communities Program	The Transformative Climate Communities Program funds community-led development and infrastructure projects that achieve major environmental, health, and economic benefits in California’s disadvantaged communities.
California Natural Resources Agency	Urban Greening Program	The Urban Greening Program supports the development of green infrastructure projects that reduce GHG emissions and provide multiple benefits, including direct investments toward disadvantaged communities.
SACOG	Transportation Demand Management (TDM) Program	This Program provides funding for projects, programs, and events that are effective in changing travel behavior. Eligible projects encourage residents to drive alone less often through the development and implementation of TDM programs, policies, and services that promote bicycling, walking, riding transit, carpooling, or teleworking.

¹ The City has received more than 40 grants within the last five years, including a Statewide Park Development and Community Revitalization Grant Program for park improvements and bioswales, a California Department of Forestry and Fire Protection grant to fund tree planting, a SACOG grant to support the preparation of a draft affordable housing ordinance, a SACOG Green Region grant to support EV infrastructure and a number of other grants related to housing issues.

ARTS AND INNOVATIVE APPROACHES FOR ACTION IMPLEMENTATION

CAAP action implementation will benefit from creative strategies for community education and resiliency. City staff will collaborate with community members and community-based organizations to develop art events to educate the community on climate issues, engage citizens and businesses, and address equity, inclusion, and diversity. Inclusion of these innovative approaches will expand the scope and reach of climate efforts and responses, as the arts provide critical communication tools to educate, inform and inspire action. The arts sector, including theater, storytelling, visual art, music, and other creative endeavors, can offer important contributions to recovery and rebuilding efforts and can unite communities in the wake of climate events such as flood, fire, and drought. Art at every scale, from museum exhibitions to street murals, offers community benefits and builds connection.

FUNDING AND FINANCING NEXT STEPS

Implementation of Davis' priority climate actions will be most effective and efficient if multiple actions are pursued in tandem, which may include using funding and financing sources to support multiple, or bundled, projects. Near-term next steps (within one to two years) for beginning implementation of priority actions may include:

- **Prioritize actions that will offer savings or other benefits to low-income or vulnerable households.** Successful climate action must facilitate equitable outcomes for Davis residents, which will require prioritizing actions that provide immediate and direct benefits to low-income or vulnerable households. These actions include subsidized public transit and energy efficiency upgrades.
- **Identify partnership opportunities to plan, fund, and implement climate actions.** Other public local and regional public agencies, such as Yolo County and SACOG, that have similar GHG emission reduction goals or face similar climate stressors are ideal candidates for partnerships. Partnerships between public agencies can also increase the competitive edge of grant applications. Other civic institutions, notably UC Davis, may also offer partnership opportunities.
- **Determine which strategies will require environmental review, technical analysis, and/or complex partnerships and permitting.** Some of the priority actions will have longer implementation timelines due to environmental review requirements or financing coordination (e.g., new sales tax, bond issuance). To meet its 2030 and 2040 goals, the City will need to start the first phase of work on these longer-term projects.
- **Be aware of and prepare for unprecedented climate resilience funding allocated through state budgets.** Given climate impacts, more money has been allocated in recent years for carbon reduction and climate resilience efforts.
- **Include CAAP actions in the City's annual Comprehensive Funding Plan (CFP) and address early preparation of application materials for grants from the State and other sources, with consideration for availability and deadlines.** This will allow the City to match actions to grant opportunities, define strong proposal narratives and identify potential partnerships.

5.4 Plan Monitoring and Updates

The City will develop a CAAP-related contract with a grants management consultant to identify funding strategies and pursue CAAP grant opportunities. The City’s climate actions and implementation approach will adapt in response to action performance and to the continuing advancement of climate science and policy and advances/price drop in technological solutions. The CAAP will be updated through an iterative process that recognizes the challenges of action implementation and advances the City’s ability to meet its targets. The City is committed to a transparent process of monitoring, assessing impact, reporting progress, and stakeholder feedback to ensure that the CAAP is revised routinely as summarized in **Table 11**. The revision process will include a review of the City’s GHG emission reduction progress, action implementation performance and updates to emissions forecasts (as needed). Additionally, the City will identify new regional, state, or national legislation that could affect local GHG reductions and any new science-based guidance on target setting. The City will regularly share CAAP implementation progress updates with the community.

Table 11. CAAP Monitoring and Communication

CAAP ELEMENT	CITY APPROACH
GHG Inventory	The City will collect and review primary GHG emissions activity data bi-annually and prepare a complete GHG inventory no less than every two years to monitor GHG target achievement. Frequency of GHG Inventories will be addressed again in 2030.
CAAP Action Progress Assessment	The City will regularly track CAAP action implementation progress against each action’s individual metrics. The City will document CAAP action progress in a public-facing, user-friendly dashboard that will include graphs that illustration an action’s performance over time.
CAAP Updates	The City will perform a full review of the CAAP in 2025 (approximately two years after 2020-2040 CAAP adoption), followed by reviews every five years. This review will determine if the CAAP must be updated to reflect new information and/or revise the GHG reduction approach based on implementation monitoring results. Each update will include the most recent GHG inventory (and/or primary activity data) and report progress on CAAP actions. Additionally, the City will conduct a comprehensive update to the CAAP following the 2030 target year.
Communications and Feedback	The City will provide CAAP monitoring progress and updates via the CAAP dashboard. Additionally, the City will regularly communicate updates on CAAP action progress during Natural Resources Committee meetings. These communications will be supported by emails, social media posts and public meetings, as appropriate.

In the context of a CAAP, GHG emissions are monitored through total community GHG emissions, or a “top-down” approach, and individual action performance, or a “bottom-up” approach. These two evaluation considerations are summarized in **Table 12**.

Table 12. Top-Down and Bottom-Up GHG Monitoring		
MONITORING APPROACH	TASK	TIMEFRAME
Top-Down	Monitor primary GHG inventory activity data and/or conduct full GHG inventory	Annually for primary activity data; every two years for full GHG inventory
Bottom-Up	Monitor CAAP action effectiveness through individual metrics	Reviewed every 1-2 years

TOP-DOWN MONITORING APPROACH

Future GHG inventories will provide “top-down” information that identifies trends in GHG emissions across sectors and demonstrates progress toward the 2030 and 2040 GHG targets. The City can also get a quick sense of emissions changes without conducting a full inventory based on relatively few primary activity data sources related to the priority CAAP actions to allow more regular and efficient progress monitoring.

To track the City’s changing emission profile and to inform action implementation, a “top-down” GHG emissions analysis will be conducted annually using the data summarized in **Table 13**, which will track building energy use, on-road transportation emissions, and solid waste emissions, representing nearly 90% of 2016 GHG emissions. This regular GHG emissions analysis allows the City to identify emissions sectors or activities that demonstrate progress toward the CAAP goals as well as those sectors or activities that are not on track, indicating that an adjustment to the CAAP actions may be necessary. The City will also prepare full GHG inventories on a regular cycle of every two years, which will additionally represent changes in off-road equipment, wastewater treatment and water supply emissions.

Table 13. Data Sources for Annual GHG Emissions Analysis

EMISSIONS SOURCE	DATA NEEDED	DATA SOURCE	PRIMARY DATA TO TRACK ANNUALLY?
Electricity	Electricity consumption by sector	Pacific Gas & Electric (PG&E)/VCE	Yes
	Electricity emissions factor	Electric utility providers	Yes
Natural Gas	Natural gas consumption by sector	PG&E	Yes
	Natural gas emissions factor	EPA	No – City can broadly track changes in natural gas consumption since the emissions factor is relatively constant
Transportation	VMT* and travel mode split	SACSIM Travel Demand Model, or Google Environmental Insights Explorer (EIE) tool	Yes
	Gas and diesel emissions factors	CARB EMFAC model	No – City can broadly track changes in VMT and travel mode to get initial sense of sector level changes
Solid Waste	Tons of waste disposed by disposal method (e.g., landfill, incineration)	City of Davis or CalRecycle	Yes
	Solid waste management emissions factors	EPA Waste Reduction Model (WARM)	No – City can broadly track waste disposal by treatment method to understand if organics diversion programs are being successfully implemented

**The VMT values used in the 2016 base year inventory were from the SACOG regional travel model, which is updated on an approximately 4- to 5-year cycle, so the frequency of monitoring based on this top-down approach will be limited to the frequency of model updates. Alternatively, Google Environmental Insights Explorer (EIE) VMT data is updated annually and has been identified as an alternative source of on-road transportation data by ICLEI USA, though it does not offer forecasting information that is included in the SACOG model. Davis could decide to replace SACOG VMT data with Google EIE data in the future due to its consistency or collect Google EIE data annually to identify directional changes in the community's vehicle travel volume (i.e., VMT) and travel mode (e.g., transit, driving, biking)*

BOTTOM-UP MONITORING APPROACH

The City will also track the impact of each action through a “bottom-up” approach to monitor the overall effectiveness of the CAAP. Monitoring action progress is necessary to manage and implement the CAAP, reinforce successful actions, adjust or replace ineffective actions, and develop new actions when needed. Bottom-up action metric tracking can identify which actions in a specific sector are underperforming if top-down monitoring shows that an emissions source is not on track to achieve the City’s targets.

The implementation roadmaps in Appendix A present potential implementation metrics to track action progress. **Table 14** presents examples of these metrics. The City will select one or more performance metrics to monitor each action’s desired outcome.

Table 14. Action Metrics Examples		
CAAP ACTION	POTENTIAL IMPLEMENTATION METRIC	DATA SOURCES
BE.1 Building electrification when permit is needed	Percent of space heating system building permits that are for all-electric systems (track by residential and non-residential)	City
BE.5 Community solar energy	Percent of Davis residents subscribing to UltraGreen	VCE
TR.2 Decarbonize municipal fleet	Percent of municipal fleet passenger vehicles that are non-fossil fuel vehicles	City

Vulnerability Assessment Updates (SB 379 compliance)

In addition to the components described in Section 2.2.3, Government Code Section 65302 specifies Vulnerability and Adaptation Plan updates with the General Plan Housing Element at least every eight years. In compliance with Section 65302, the City will update the CAAP, which includes a vulnerability assessment, adaptation goals and actions, every five years or more often, if needed.

The 2021 Vulnerability Assessment (VA) prepared as part of the 2020–2040 CAAP, analyzes the vulnerability of assets and populations to the primary climate stressors affecting Davis: extreme heat, precipitation and flooding, wildfire and air quality and drought. These vulnerabilities, as related to physical assets, are a function of exposure (located in impacted area), sensitivity (degree of being affected if exposed) and adaptive capacity (ability to adjust). Related to vulnerable populations, the VA attempts to understand which community members are the most vulnerable in order to prioritize appropriate adaptation strategy development in the next phase of the project. This may include programs, policies and design guidance.

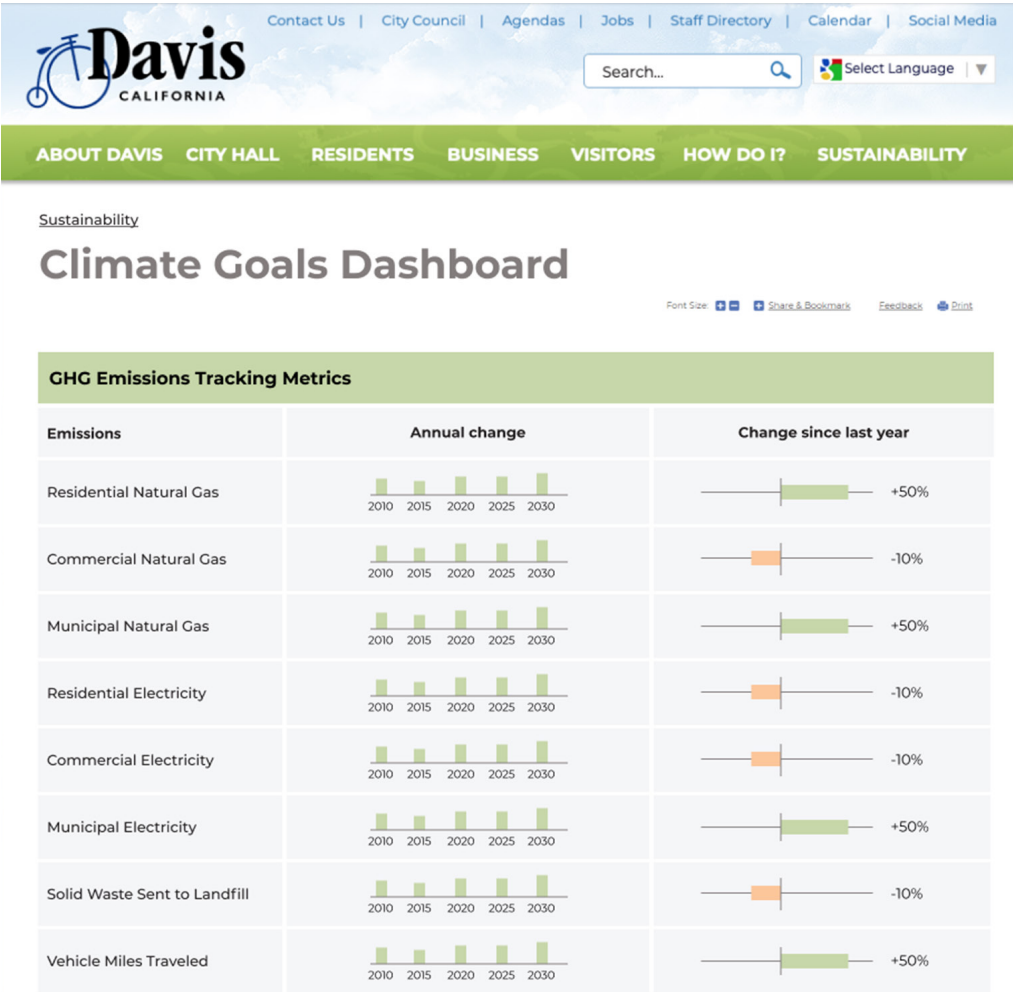
For future VAs, Davis can provide more specificity and detailed focus to highlight how planned actions will respond to key vulnerabilities to strengthen community systems, structures, households and neighborhoods in anticipation of growing climate impacts. For example, recent events with electrical power outages during heat waves highlighted some of these vulnerabilities and showed how our physical and social systems may not be fully prepared at the neighborhood and community level.

An updated assessment framework can expand on actions to protect against predicted impacts and ensure neighborhood and community wide resilience. Responses to key questions may include:

- What is the state of our stormwater system, electricity delivery system, water system, emergency shelter system, public health system, building safety and social safety net, neighborhood by neighborhood?
- What are needed to strengthen these systems, how and when and with what funding are we going to strengthen them?
- Where do our vulnerable populations live and how will we address their vulnerabilities in a systematic way?

After CAAP adoption, an online dashboard will provide clear, engaging communications to stakeholders and the community on the progress of CAAP actions and implementation. The dashboard will provide high-level tracking of key metrics such as electricity and natural gas use by the residential, non-residential, and municipal sectors, relative to the 2016 baseline year. Users will also be able to explore implementation status across broader goal and sector areas, as well as drill down into individual actions, comparing current implementation level to planned. Hosted on the City of Davis’ website, the user-friendly dashboard platform will allow City staff to easily update the dashboard with new data over time. The dashboard interface will be attractive and easy-to-understand, enabling a wide range of audiences to engage with climate action metrics and progress updates.

Although the dashboard is still in development at the time of CAAP adoption, an early template for the proposed dashboard (with placeholder data) is shown here:



5.8

Social Media and Outreach Efforts

Following CAAP adoption, the City will focus on encouraging community understanding and awareness, promoting personal decision-making to support carbon reduction, and addressing diversity, equity and inclusion issues. These efforts will continue through the next CAAP Update and will be disseminated through social media, online platforms, an online metrics dashboard and more to keep the community updated on key CAAP milestones. Using CAAP branding and graphics, materials will be developed for print media press releases, social media content, community events (such as pens, stickers, pins), and outreach planned specifically for hard-to-reach audiences.

'Fun Fact Friday' social media posts are being developed to engage local businesses, community-based organizations, and community members. Each week, social media posts will highlight a CAAP element or action with "Fast Facts" about the CAAP and prioritized actions, to be posted on Facebook, Twitter, Instagram and NextDoor.

Ideas for traditional and nontraditional methods to notify the community of opportunities to learn about the Davis CAAP may include informational brochures or one-page action descriptions, email notifications, posters at local businesses, banners and signage in designated neighborhoods and districts, coloring pages, short surveys, door hangers, bus and transit advertisements, creative chalk art throughout the City, pop-up workshops or other ideas. Weekly social media updates will include photos, videos, or animated short clips on CAAP related topics.



A robust social media and engagement plan is planned on being deployed throughout 2023 using social media images and campaigns such as "Fast Fact Friday"

The CAAP is a living document that describes how the City will address climate change and collaborate with residents and businesses. The CAAP and the proposed actions will be regularly reviewed through community engagement, implementation, progress monitoring, and exploration of emerging opportunities. Regular updates are planned, with the first update proposed two years after the CAAP adoption (2025), followed by updates every five years (2030, 2035, 2040). Additionally, GHG inventories will be conducted on a biannual basis.

The City anticipates that there will be emerging technology, funding and partnering opportunities from regional, state and federal organizations over time to help Davis accomplish climate action and adaptation goals. Because it is not possible to know everything that the future holds, and to assist with planning future updates to the CAAP, the following areas for further action or further study are identified to be considered for inclusion with next CAAP update:

1. Consider recommendations in the DDSP, adopted in December 2022. As CAAP actions are implemented, and with the next CAAP update, the City should consider the added context and actions following adoption of DDSP. This may include developing a Sustainability Master Plan for Downtown Area, transportation programs and policies, green infrastructure improvements and requirements, microgrids and other building energy issues, among other policies and programs identified in the DDSP. Adaptation actions and planning should also be prioritized while implementing the Downtown Plan.
2. Address sustainability issues related to City purchasing, facilities and operations, transitioning to fully renewable energy and other municipal opportunities to lead by example.
3. Further develop ideas provided during the community outreach process. These are considered potential engagement ideas that the City can use to support CAAP implementation. Some outreach and education opportunities to be explored are listed in Section 2.2.
4. Expand on the City's Vulnerability Assessment and climate adaption actions to further address key vulnerabilities and strengthen community systems, structures, households and neighborhoods in anticipation of growing climate impacts.
5. Consider additional actions generated during community engagement, but not prioritized in this CAAP. The list of these ideas is included in Section 4.6.

It is the City's objective that this CAAP sets the stage for further efforts to address climate change risk and attain the Davis 2040 carbon neutrality target. This plan provides a strong framework for the City to act swiftly to incorporate innovative and creative approaches to implement sustainable GHG reductions, focus on diverse co-benefits, attract new investment to provide opportunities for current and future residents, and celebrate a culture of respect, diversity, equity, and inclusivity.



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Hannah Safford and Greg Miller, former Natural Resources Commissioners who contributed significantly to CAAP discussions in an advisory capacity

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Appendices

Appendix A

Implementation Roadmaps

This appendix includes implementation roadmaps for each prioritized action identified in the 2020-2040 CAAP.

Roadmap Development: The roadmaps were largely developed by the City CAAP project management team with important input from City department staff who will help lead action implementation. Additional comments were added based on Commission and community input during the public review process, where appropriate, to help with further developing action planning and implementation. The roadmaps presented here are a starting point to guide the implementation process and will be further developed with more specific or updated information based on the City's implementation phasing, funding and financing opportunities, regional collaboration and other implementation factors.

Equity: The CAAP document addresses some of the equity issues and potential solutions that may arise with implementing these goals and actions. As the actions refined, a focus on the diversity, equity and inclusion aspects of planning and implementation will continue to be a priority. Continued outreach to community members about impacts of action development will also be prioritized.

Information Included: The roadmaps include information describing general action information, funding and financing resources, implementation information, performance tracking metrics, and outreach and education opportunities.

The roadmaps present the following information (where available).

General action information

General action information was presented in the CAAP document as the "Action Top Bar Data" and is also copied here for consistency. A key is provided below. The data includes:

- Lead City department(s)
- Key partner(s)
- Time Frame: Planning
- Time Frame: Implementation
- Staff support required
- Municipal capital cost
- GHG reduction
- Climate hazards addressed
- Co-benefits

Quantified GHG reduction potential is provided where available

Funding and Resources

- Action linkages (what other CAAP actions are related to the action.)
- Initial funding needs (Qualitative description of what initial funding is needed to take the first few implementation steps)
- Biennial funding needs (Qualitative estimate of implementation needs on a rolling two-year basis to align with the City's budget cycle)
- Staffing needs (Evaluation if the immediate next steps could require additional staff or if it can be handled within existing workflows)
- Funding opportunities (Potential grant sources, public/private funding, etc.)

Implementation Information

- Project lead and staff (Key personnel)
- External partners (Organizations, agencies, etc.)
- Priority level/general timeframe (Statement on when implementation will occur)
- Immediate next steps (Initial implementation steps to kickstart the action over the following 12 months; to be updated by the Lead Entity once a year to define the next set of immediate steps)
- Implementation milestones (Longer-term milestones to be achieved during action implementation, beyond the immediate next steps)
- Initiation timeline (Estimate of when implementation steps will occur)
- Completion timeline (Estimate of when overall aspects of action will be completed)

Performance Tracking Metrics (Example lists of what the city could monitor; assumes that a few key metrics will ultimately be selected for tracking purposes)

- Output metrics (What was achieved by the action?)
- Outcome metrics (What is the effect of those achievements? In some instances, action-specific outcome metric sources are not available; The output and outcome metrics should be evaluated together to help define the action implementation landscape.)

Outreach and Education Opportunities (Key ideas or strategies for how outreach and education can be used to enhance action implementation success)

ACTION TOP BAR DATA

Lead City Department:

CD	Community Development
CMO	City Manager's Office
PCS	Parks and Community Services
PWET	Public Works Engineering and Transportation
PWUO	Public Works, Utilities and Operations
SSH	Social Services and Housing Department

Key Partners:

Amtrak	Amtrak (Capital Corridor train and bus system)
CalTrans	California Department of Transportation
Community	Community members and partners
DJUSD	Davis Joint Unified School District
Contractors	Local contractors and businesses
SACOG	Sacramento Area Council of Governments
SacRT	Sacramento Regional Transit
SMAQMD	Sacramento Metropolitan Air Quality Management District
Unitrans	Davis Bus System funded jointly by Associated Students of UC Davis and City of Davis
VCE	Valley Clean Energy
YCFWCWCD	Yolo County Flood Control & Water Conservation District
YCRCD	Yolo County Resource Conservation District
YCTD	Yolo County Transportation District
YSAQMD	Yolo Solano Air Quality Management District

Climate Hazards:



Air Quality



Extreme Heat



Drought



Flood

Co-benefits:



Air Quality & Public Health (AQPH)



Biodiversity/Natural Habitat (B/N)



Cost of Living Reduction (COL)



Energy Resilience (ER)



Environmental Stewardship (ES)



Equity & Inclusion (E&I)



Facilitates Regional Collaboration (FRC)



Food Access/Security & Local/Fresh Agriculture (FAS)



Job Creation & Economic Output (JC)



Public Safety (PS)



Quick Wins/Fast Starts (Q/F)



Waste Reduction (WR)



Water Conservation/Quality (WC)

Negative Co-benefits:



Cost of Living Increase (CLI)

Action BE.1.

Building electrification when permit is needed (Voluntary)

Lead City Department	Key Partners	Time Frame Planning: 0-4 years	Time Frame Implementation: 16 years	Staff Support Required	Municipal Capital Cost	GHG Reduction	Climate Hazards Addressed	Co-Benefits
CD: Building CMO: Sustainability	Community Contractors						 	

GHG Reduction Potential: **2030:** 1,700 MT CO₂e/yr **2040:** 4,300 MT CO₂e/yr

Address a robust voluntary approach for existing building electrification, to include City-provided educational and outreach materials for three years following CAAP adoption. During this time, provide on-going and follow up monitoring and assessment of voluntary electric equipment replacement to determine whether or not 2030 GHG emissions reduction targets are being met through voluntary action. Include specific provisions for low-income and vulnerable populations. Address financing/ incentive options for all residents.

Related CAAP Actions:

- BE.2 Building electrification for existing buildings
- BE.3 Energy efficiency and ventilation in rental properties

Funding and Resources

Initial Funding Needs	<ul style="list-style-type: none"> Primary funding sources: City budget (for education and outreach) and grant funding (for incentives and financing upgrades). Grant funding will be sought to fund incentives Evaluate funding needs for design professionals and contractors training and information on City goals and future requirements.
Biennial Funding Needs	<p>Funding needs are minimal for voluntary approach As increasing adoption is realized, additional funding for staff training, increased time for permit documents review, new inspections standards and permitting software for tracking metrics will be required. Funding for incentives and equity-based financing for private residences and businesses will be sought through federal, state and regional grant opportunities and potentially through financing strategies such as low-interest loans, bonds and public-private partnerships.</p> <p>Assess costs for addressing areas of Davis with inadequate electricity infrastructure to allow for necessary panel upgrades to accommodate this action and assist homeowners with excessive costs for panel upgrades as appropriate.</p> <p>Consider subsidies for PG&E customers enrolled in California Alternate Rates for Energy Program (CARE) or Family Electric Rate Assistance Program (FERA) programs or other low-income assistance programs. Seek increased funding for incentives and equity-based financing for private residences and businesses</p>

	through federal, state and regional grant funding. Evaluate financing strategies such as low-interest loans, bonds and public-private partnerships. Consumer incentive programs (listed in Appendix B) may be considered.
Staffing Needs	<ul style="list-style-type: none"> • No additional building/permitting staff required for initial voluntary effort • Additional staff needed to implement outreach and education starting in 2023 • Additional permitting and inspection staff needed in Building Division starting in 2024, including for tracking of permitting and metrics • Determine additional staffing needs to promote voluntary program • City staff, including building, inspectors should be trained about electrification requirements to minimize issues with permit approval based on new technologies.
Funding Opportunities	<ul style="list-style-type: none"> • Building Codes Implementation for Efficiency and Resilience (US Department of Energy) • Energy Efficiency and Conservation Block Grant Program (US Department of Energy) • Energy Partnership Program (California Energy Commission) • This action has the potential to generate revenue depending on whether there will be fines under the mandatory implementation approach. This revenue could be used to support costs for implementing the action. • Leverage IRA rebates under High Efficiency Electric Home Rebates (HEEHRA) to encourage low-income/affordable qualified properties to participate during voluntary period. Funding may not be available later.

Implementation Information

Project Lead (and Staff)	Chief Building Official; Sustainability Manager
External Partners	Community members; Local Contractors. Possibly Valley Clean Energy (VCE) and Pacific Gas and Electric (PG&E); private/public partnerships
Priority Level/ General Timeframe	Short-term (3 years) Start voluntary implementation immediately (short-term) and work toward mandatory in 3 years (align with 2026 building code cycle).
Immediate Next Steps	<ol style="list-style-type: none"> 1. Chief Building Official to develop materials with the Communication team to initiate public outreach including information provided at the counter for both homeowners and contractors. 2. Train staff to educate the public regarding the value of electrification. 3. Track permitting and metrics of existing and new equipment (size of systems). 4. Identify funding opportunities and initiate grant applications, loans for implementation with an equity lens, or other approaches. Explore options to offer financial support (such as partial or full subsidies) for low-income and vulnerable households to offset the household costs of electrification, such as the costs of new appliances or electric panel upgrades, and to help avoid potential future impacts of natural gas utility price increases. Focus pilot programs on these communities. 5. Address issues of upgrades to affordable housing units and ability to recover energy efficiency investments at time of sale (for example, by allowing affordable homeowners to increase the capped price of unit). Additionally, address the impacts of electrification on the price and availability of affordable housing. Address the issue of landlords passing the costs of electrification to tenants and provide strong tenant protections for both rent

	<p>increases and lease termination or eviction for remodels. (See the City of San Pablo program.) Address equity issues for low income and vulnerable communities.</p> <p>6. Develop an ordinance January 1, 2026 for the mandatory approach consistent with California law. Additionally, adopt policies and/or incentive programs to implement energy efficiency retrofits (such as weatherization, lighting upgrades, appliance replacement, etc.). Consider and address possible limitations, “carve outs” or exemptions, such as for large-scale commercial properties or other building types that require use of natural gas or are associated with research and development.</p> <p>Provide language to address buildings that cannot be reasonably electrified or are excessive costs (such as older residences or residences in areas with inadequate electrical service. Property owner may submit waiver request with verification)</p> <p>Ensure that electrification requirement only covers appliance/system(s) being permitted</p> <p>Provide language to cover existing available technology and products suitable for like replacement or upgrade</p> <p>Consider including giving electrifying clients priority for permits – streamline (put them at the front of the paperwork queue)</p>
Implementation Milestones	<ul style="list-style-type: none"> • Develop materials for the public. • Develop tracking method. • Develop ordinance with new building code update for 2025.
Initiation Timeline	<ol style="list-style-type: none"> 1. For item 1 of Next Steps, within 3 months of CAAP approval. 2. For item 2, within 4 months. 3. For item 3, within 6 months. 4. For item 4, within 12 months. 5. For item 5, within 12 months. 6. For item 6, by 2025.
Completion Timeline	<p>Voluntary: within 6 months of approval.</p> <p>Mandatory: within 3 years.</p>

Performance Tracking Metrics

Output Metrics – What was achieved by this action?	
Implementation Metrics and Sources	<ul style="list-style-type: none"> • Number of residential homes converted to all electric within measurable time periods. • Size of gas fired equipment removed and electric equipment installed. • Percent of hot water heater building permits that are for electric systems (track by residential and non-residential). • Percent of space heating system building permits that are for all-electric systems (track by residential and non-residential). • Percent of total low-income/vulnerable households participating in program per year. • Total dollar value of financial incentives provided per year. • Electricity/year and per capita electricity
Outcome Metrics – What is the effect of those achievements?	
Implementation Metrics and Sources	<ul style="list-style-type: none"> • Total natural gas consumption per year (track by residential and non-residential). • Natural gas consumption per capita per year.

- | | |
|--|--|
| | <ul style="list-style-type: none">• Natural gas use in existing buildings comprises 12% of forecast emissions in 2030. Implementation of this action reduces these emissions by 32%. |
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Outreach and Education Opportunities

- | |
|---|
| <ul style="list-style-type: none">• Educate community members about heat pumps (HVAC), induction stoves, and benefits and cost savings of other electric systems.• Provide community electrification workshops and trainings for architects, designers, contractors and local real estate professionals according to recommendations by the California Air Resources Board (CARB).• Collaborate with financial institutions to motivate residents and property owners to invest in home improvements.• Work with local partners to provide community forums and website information including list of potential contractors to perform renovations or replacement for electrification.• Provide education and outreach on behaviors to reduce energy use (thermostat use, natural/passive cooling, using shading, air drying clothes, etc.)• Use testimonials from community members to help drive electrification.• Work with local community members and artists to develop unique and innovative approaches to education and outreach around electrification.• Review the City of San Pablo program that requires rental property owners in need of urgent repairs to provide assistance in tenant relocation. Assess Davis provisions and adopt a similar policy, as appropriate.• Support workforce development to enable local contractors and workers to access local efficiency and electrification jobs. |
|---|

Action BE.2.

Building electrification for existing buildings (Voluntary)

Lead City Department	Key Partners	Time Frame Planning: 0-4 years	Time Frame Implementation: 16 years	Staff Support Required	Municipal Capital Cost	GHG Reduction	Climate Hazards Addressed	Co-Benefits
CD: Building CMO: Sustainability	Community Contractors						 	

GHG Reduction Potential: **2030:** 550 MT CO₂e/yr **2040:** 1,250 MT CO₂e/yr

Provide education and outreach to assist property owners in making informed decisions for building energy/efficiency upgrades (including information about replacement with electric or other non-fossil fuel equipment replacement) for residential and commercial properties, including any existing or anticipated incentive and financing programs. Develop a Home Energy Score (HES) program. Include specific provisions for low-income and vulnerable populations.

Related CAAP Actions:

- BE.1 Building electrification when permit is needed
- BE.3 Energy efficiency and ventilation in rental properties

Funding and Resources

Initial Funding Needs	<p>City budget (for education and outreach) and grant funding (for incentives and financing upgrades) are likely primary sources for this action.</p> <ul style="list-style-type: none"> Current staff can manage initial funding/coordination on Home Energy Score pilot implementation until more detail is developed Pursue grant funding opportunities now to provide incentives to opt for electrification at time of sale, including for vulnerable populations.
Biennial Funding Needs	<p>Funding needs are minimal for voluntary approach</p> <p>As increasing adoption is realized, additional funding for staff training, increased time for permit documents review, new inspections standards and permitting software for tracking metrics will be required. Additional funding will be required to implement and manage a more robust HES program. Operating HES and coordinating with appraisal and realtor communities is necessary.</p> <p>Assess costs for addressing areas of Davis with inadequate electricity infrastructure to allow for necessary panel upgrades to accommodate this action and assist homeowners with excessive costs for panel upgrades as appropriate.</p> <p>Consider subsidies for PG&E customers enrolled in California Alternate Rates for Energy Program (CARE) or Family Electric Rate Assistance Program (FERA)</p>

	programs or other low-income assistance programs. Seek increased funding for incentives and equity-based financing for private residences and businesses through federal, state and regional grant funding. Evaluate financing strategies such as low-interest loans, bonds and public-private partnerships. Consumer incentive programs (listed in Appendix B) may be considered.
Staffing Needs	<ul style="list-style-type: none"> • No additional staff required for voluntary implementation of HES pilot program or building permitting for voluntary electrification • Additional staff required when HES program is developed more fully. • Additional staff needed for tracking of permitting and metrics once voluntary compliance is more significant.
Funding Opportunities	<ul style="list-style-type: none"> • Explore opportunities for use of public goods charge in partnership with PG&E and VCE • Building Codes Implementation for Efficiency and Resilience (US Department of Energy) • Energy Efficiency and Conservation Block Grant Program (US Department of Energy) • Energy Partnership Program (California Energy Commission) • This action has the potential to generate revenue depending on whether there will be fines under the mandatory implementation approach. This revenue can directly cover implementation and maintenance costs. • Leverage IRA rebates under High Efficiency Electric Home Rebates (HEEHRA) to encourage low-income/affordable qualified properties to participate during voluntary period.

Implementation Information

Project Lead (and Staff)	Chief Building Official; Sustainability Manager
External Partners	Community members; Local Contractors; Potential partners include VCE and PG&E; Bay Area Regional Energy Network (BayREN) and Alameda StopWaste Home Energy Score (HES) program; Yolo County; Appraisers, property owners and Real Estate professionals
Priority Level/General Timeframe	Short-term/3 years Start outreach and education for voluntary implementation immediately (short-term). Implement HES pilot by the end of 2023.
Immediate Next Steps	<ol style="list-style-type: none"> 1. Explore opportunities to implement HES pilot for specific types of existing buildings as prototypes for full implementation. Meet with BayREN and Yolo County to initiate pilot project to test outcomes and provide metrics for implementation in Davis. The HES is likely to become an integral component, and will be encouraged and potentially incentivized. This will help plan the transition to all-electric end uses as well as energy efficiency. Many jurisdictions already have such programs (https://www.bayren.org/home-learning-center/home-energy-score-hes). This can be considered an informational tool to set a baseline and help homeowners to “make a plan” for taking GHG-reducing actions over time. 2. Collaborate with local realtors and property managers to opt in to HES ratings to establish energy baselines. Implement HES pilot process to set baselines for property energy use. 3. Chief Building Official to develop materials with the Communication team to initiate public outreach for both homeowners and contractors.

	<ol style="list-style-type: none"> 4. Train staff to educate the public regarding the value of electrification according to recommendations by the California Air Resources Board. Work with PG&E and VCE to offer up-to-date information, training and programs. 5. Track permitting for electrified properties and metrics of existing and new equipment (size of systems). 6. Identify funding opportunities and seek grants, loans for implementation with an equity lens, or other funding approaches. Explore options to offer financial support (such as partial or full subsidies) for low-income and vulnerable households to implement these changes. Any pilot programs should focus on those communities. 7. Establish a permanent HES program in Davis or in Yolo County region. 8. Explore options to allow homeowners in affordable housing units to recover costs of upgrades required by this program. Additionally, address the impacts of electrification on the price and availability of affordable housing. Address the issue of landlords passing the costs of electrification to tenants and provide strong tenant protections for both rent increases and lease termination or eviction for remodels. (See City of San Pablo program). 9. When California state law requires building electrification at some point in the future (as part of tri-annual building code update), consider developing standards to assist property owners with compliance. This may include rolling out requirements over time, such as for owner-occupied single-family homes followed by multi-family and rental properties. Consider requiring upgrades based on criteria such as the relative improvement costs or the age or life expectancy of existing systems. Consider providing a checklist of energy efficiency retrofits and upgrades such as building envelope sealing, lighting upgrades, ENERGY STAR equipment, occupancy sensors, smart power strips, equipment controllers, etc. Address ways to prevent housing costs for low-income renters from rising after upgrades. Explore other provisions for low-income and vulnerable populations.
Implementation Milestones	<ul style="list-style-type: none"> • Develop materials for the public. • Implement HES pilot program. • Develop tracking method. • Address equity issues for low income and vulnerable communities • Partner with realtors, property owners, and the appraisal community to attain buy-in to program. Develop permanent required HES program
Initiation Timeline	<ol style="list-style-type: none"> 1. For item 1 of Next Steps, immediate 2. For item 2, immediate or within 3 months (target October 2022) 3. For item 3, within 3 months of CAAP approval 4. For item 4, within 3 months 5. For item 5, within 6 months 6. For item 6, within 12 months 7. For item 7, within 12 months 8. For item 8, within 12 months 9. For item 9, in line with tri-annual building code actions
Completion Timeline	Voluntary education and outreach materials: within 6 months of approval

Performance Tracking Metrics

Output Metrics – What was achieved by this action?

Implementation Metrics and Sources	<ul style="list-style-type: none"> • Number of dwellings sold by number of bedrooms per year • Percent of homes sold per year that received financing or incentives from this program • Percent of commercial properties sold per year that received financing/incentives from this program • Percent of total low-income or vulnerable households participating in program per year • Total dollar value of financial incentives provided per year
Outcome Metrics – What is the effect of those achievements?	
Implementation Metrics and Sources	<ul style="list-style-type: none"> • Total natural gas consumption per year (track by residential and non-residential) • Total electricity consumption per year (track by residential and non-residential) • Natural gas consumption per capita per year • Electricity consumption per capita per year • Total dollar value of financial incentives provided per year

Outreach and Education Opportunities

- Educate community members about heat pumps (HVAC), induction stoves, and benefits and cost savings of other electric systems.
- Provide community electrification workshops and trainings for architects, designers, contractors and local real estate professionals according to recommendations by the [California Air Resources Board \(CARB\)](#).
- Collaborate with financial institutions to motivate residents and property owners to invest in home improvements.
- Work with local partners to provide community forums and website information including list of potential contractors to perform renovations or replacement for electrification.
- Provide education and outreach on behaviors to reduce energy use (thermostat use, natural/passive cooling, using shading, air drying clothes, etc.)
- Use testimonials from community members to help drive electrification.
- Work with local community members and artists to develop unique and innovative approaches to education and outreach around electrification.
- Review the [City of San Pablo program](#) that requires rental property owners in need of urgent repairs to provide assistance in tenant relocation. Assess Davis provisions and adopt a similar policy, as appropriate.
- Support workforce development to enable local contractors and workers to access local efficiency and electrification jobs.

Action BE.3.

Energy efficiency and ventilation in rental properties

Lead City Department	Key Partners	Time Frame Planning: 0-4 years	Time Frame Implementation: 16 years	Staff Support Required	Municipal Capital Cost	GHG Reduction	Climate Hazards Addressed	Co-Benefits
CD: Building CMO: SSH & Sustainability	Rental property owners						 	

GHG Reduction Potential: **2030:** 850 MT CO₂e/yr **2040:** 2,250 MT CO₂e/yr

Develop financing and/or incentivized options for rental property owners to make energy efficiency and cooling/ventilation upgrades. Develop policies, and/or modify the rental license program, to require minimum energy efficiency and cooling/ventilation requirements, with a priority on residential rental properties.

Related CAAP Actions:

- BE.1 Building electrification when permit is needed
- BE.2 Building electrification for existing buildings

Funding and Resources

Initial Funding Needs	Initial funding needs will depend on level of effort required to electrify and improve cooling and ventilation of both single-family and multi-family rental properties in Davis. Further cost information to be developed to support grant applications and identify time frame for implementation.
Biennial Funding Needs	Estimated implementation needs on rolling 2-year basis to align with City budget cycle will be developed to identify costs and potential incentives for rental property transition to electrification, energy efficiency, solar PV, cooling/ventilation, window replacement, insulation and air filtration upgrades. This assumes that fossil fuel systems will switch to electric heat pumps; gas stoves (currently 40%), water heaters and other major appliances will switch to electric; and air filtration standards are established and implemented for existing properties.
Staffing Needs	Additional staff likely needed for implementation.
Funding Opportunities	<ul style="list-style-type: none"> • Building Codes Implementation for Efficiency and Resilience (US Department of Energy) • Energy Efficiency and Conservation Block Grant Program (US Department of Energy) • Energy Partnership Program (California Energy Commission)

	<ul style="list-style-type: none"> This action has the potential to generate revenue depending on whether there will be fines under the mandatory implementation approach. This revenue can directly cover implementation and maintenance costs.
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Implementation Information

Project Lead (and Staff)	Chief Building Official with Social Services and Housing Director and Sustainability Manager as support
External Partners	Rental Property Owners; VCE and PG&E; Yolo County Housing Authority; federal and state housing agencies as funding sources
Priority Level/General Timeframe	Short-term: Implementation to begin as soon as possible and continue on a rolling basis.
Immediate Next Steps	<ol style="list-style-type: none"> Complete inventory of multi-family properties and current energy efficiency (EE) and cooling/ventilation standards, including <ul style="list-style-type: none"> Air conditioning present / operational Mechanical ventilation present / functioning Kitchen hood ventilation Chief Building Official and SSH Director to develop materials with the Communication team to initiate public outreach and information about EE, energy conservation, and cooling/ventilation. Create multilingual materials for diverse target audiences such as seniors, immigrants, students, and renters. Consider preparation of a certification system showing the realized savings and total housing cost (including both rent and energy bills) for rentals participating in EE programs. Work with local partners to reach out to single family residential property owners and renters with informational materials to identify the value of energy efficiency and cooling/ventilation upgrades for the property as well as potential return on investment. Meet with commercial property owners, realtors, and other professionals to address the “split incentives” issue for owners and renters. Take steps to avoid capital cost burdens being shifted to renters. Facilitate access to (non-City) programs to financially assist owners of affordable residential units to install solar PV and other upgrades. Legally address affordable housing price caps to allow for recovery of energy efficiency, solar PV or other improvement investments at time of sale. Explore options to allow homeowners in affordable housing units to recover costs of upgrades required by this program. Additionally, address the impacts of electrification on the price and availability of affordable housing. Address the issue of landlords passing the costs of electrification to tenants and provide strong tenant protections for both rent increases and lease termination or eviction for remodels. (See City of San Pablo program). Adding air conditioning where it is not currently installed will occur by default when gas space heating is replaced by electric heat pumps, which combine both heating and cooling functions. Even though air conditioning will add to energy use, this is an equity issue that will also provide improved comfort and potentially save lives with summer temperatures increasing into the future. Include kitchen ventilation could be included in this measure. Cooking is the largest source of indoor air pollution and health risks.

	<p>Consider opportunities for on bill financing through City utilities so that tenants pay for upgrades.</p> <ol style="list-style-type: none"> 6. Train staff to help educate the public at the counter based on CARB guidance. 7. Work with local contractors and service providers to encourage decreased costs and incentives for upgrades. 8. Develop a method for tracking property upgrades and monitor voluntary participation for three years. 9. Identify funding opportunities and initiate grant applications, loans for implementation with an equity lens, or other approaches. 10. Consider modifying rental license program to include minimum energy efficiency and cooling/ventilation requirements consistent with state law.
Implementation Milestones	<ul style="list-style-type: none"> • Inventory completion. Energy efficiency upgrades including window replacement, air sealing or insulation should also include mechanical ventilation and, if needed, kitchen ventilation. It is critical to pair IAQ measures when making changes to building shell. • Develop metrics for cost-savings to landlords and renters • Educational and outreach materials completed and in distribution to community members • Bi-annual information sessions for community members, rental property owners and contractors • Tracking method developed and in use • Modify rental license program
Initiation Timeline	<p>Initiate preliminary actions immediately and continue on a rolling basis.</p> <ol style="list-style-type: none"> 1. For item 1 of next steps, within 12 months 2. For item 2, within 6 months of CAAP approval. 3. For item 3, within 6 months 4. For item 4, within 6 months 5. For item 5, within 12 months 6. For item 6, within 12 months 7. For item 7, within 12 months 8. For item 8, within 12 months 9. For item 9, within 12 months 10. For item 10, within 5 years
Completion Timeline	<p>Target completion of existing property improvements by 2030, with implementation of incentives and financial support.</p>

Performance Tracking Metrics

Output Metrics – What was achieved by this action?	
Implementation Metrics and Sources	<ul style="list-style-type: none"> • Number of measures implemented by type of measure per year • Program cost of total measures by type and year • Percent of rental properties per year that received financing or incentives from this program • Percent of program participants that made energy efficiency upgrades, cooling/ventilation upgrades, or both (program application can be designed to request this information) • Successful adoption of policies • Percent of housing units constructed per year with air filtration or air conditioning systems
Outcome Metrics – What is the effect of those achievements?	

Implementation Metrics and Sources

- Energy saved by type of electricity or gas measure per year
- Total electricity and natural gas consumption per year
- Total electricity and natural gas consumption per capita per year
- Total dollar value of financial incentives provided per year
- Number of heat related health incidents
- Percent of rental properties with air filtration or air conditioning systems (to be tracked through Rental Registration, Education, and Inspection program)
- Natural gas use in existing buildings comprises 12% of forecast emissions in 2030. Implementation of this action reduces these emissions by 15%

Outreach and Education Opportunities

- Work closely with the Cool Davis energy efficiency team to provide outreach and education to Davis residents, including property owners, renters, low income and vulnerable populations.
- Engage youth and young adults in outreach about energy efficiency and sustainability.
- Consider City development or partnerships (such as with Explorit Science Center or Tree Davis) to create summer programs offering climate education.
- Consider collaborating with Davis Joint Unified School District (DJUSD) and UC Davis to create a Climate Action to empower youth and young adults to advocate for energy efficiency.
- Provide informational materials on energy efficiency and sustainable practices to renters. Address specific needs of immigrants and non-English language speakers for education and outreach. Work with non-profit partners such as ApoYolo, Phoenix Coalition and others.
- See recommendations in Action A.1.

Action BE.4.

All-electric new construction

Lead City Department	Key Partners	Time Frame Planning: 0-4 years	Time Frame Implementation: 16 years	Staff Support Required	Municipal Capital Cost	GHG Reduction	Climate Hazards Addressed	Co-Benefits
CD: Building CMO: Sustainability	Developers							

GHG Reduction Potential: **2030:** 1,650 MT CO₂e/yr **2040:** 4,950 MT CO₂e/yr

Continue to update the City's residential and non-residential reach codes to require all-electric new construction and increase electric vehicle charging infrastructure requirements; adopt a requirement that all new municipal building construction must be all-electric.

Related CAAP Actions:

BE.3 Energy efficiency and ventilation in rental properties (for new construction of rental and multi-family)

Funding and Resources

Initial Funding Needs	No additional funding needed.
Biennial Funding Needs	No additional funding needed for updating codes and ordinances. No additional funding needed for electrifying new municipal buildings, as cost of electrification will be incorporated into project engineering and construction costs.
Staffing Needs	Staffing needs can be handled within existing workflows.
Funding Opportunities	<ul style="list-style-type: none"> • Building Codes Implementation for Efficiency and Resilience (US Department of Energy) • Charging and Fueling Infrastructure Grant Program (Federal Highway Administration) • Clean Transportation Program (California Energy Commission) • Energy Efficiency and Conservation and Block Grant Program (US Department of Energy) • Energy Partnership Program (California Energy Commission) • National Electric Vehicle Infrastructure Program (Federal Highway Administration) • This action has the potential to generate revenue depending on whether there will be fines under the mandatory implementation approach. This revenue can directly cover implementation and maintenance costs.

Implementation Information

Project Lead (and Staff)	Chief Building Official; Sustainability Manager
External Partners	Local developers; City Commission review; approval by California Energy Commission and Building Standards Commission Statewide Codes and Standards team
Priority Level/General Timeframe	Short-term
Immediate Next Steps	<p>This action includes two components:</p> <ol style="list-style-type: none"> 1. Update residential and non-residential reach codes for current building code cycle. <ul style="list-style-type: none"> ○ Current local ordinance is electric-preferred construction for residential construction. This ordinance will need to be updated after the new CA Title 24 code goes into effect. ○ Review and incorporate State of California 2022 Cost Effectiveness Studies. ○ Include additional components as appropriate such as EV charging infrastructure, battery storage, high performance walls, etc. ○ Once draft is complete, review with Natural Resources Commission; provide outreach/opportunities for input to local stakeholders including architects, builders, and contractors; receive City Council approval. ○ Develop and implement tracking methods to monitor the success of the reach code related to GHG emissions reduction and adoption of electrification and other sustainability measures. ○ Concurrently implement other sustainability measures such as water conservation and carbon-embedded concrete. ○ Plan for next round of reach code implementation, addressing 2025 CalGreen Building Code adoption (effective Jan 1, 2026). 2. Consider adopting an ordinance, consistent with State law, requiring all new municipal building construction to be all-electric, with solar PV and battery storage. Consider EV charging infrastructure and water efficiency requirements to exceed current standards, as a model for community. Work with CD, Public Works Utilities and Operations (PWUO) and Public Works Engineering and Transportation (PWET) to implement requirements. Reach out to https://localenergycodes.com/ for support and guidance.
Implementation Milestones	<ul style="list-style-type: none"> • For item 1, action is immediate and ongoing for 2023 reach code adoption. To be repeated for 2025-26 reach code cycle. • For item 2, within 12 months of CAAP adoption.
Initiation Timeline	Immediate
Completion Timeline	Complete both items by December 31, 2023.

Performance Tracking Metrics

Output Metrics – What was achieved by this action?	
Implementation Metrics and Sources	<ul style="list-style-type: none"> • Number of dwellings built by number of bedrooms and year • Number of fully electrified homes by number of bedroom per year (can be used to estimate net impacts) • Capacity of gas equipment removed and electric equipment installed • Percent of housing units constructed per year without natural gas hook-ups, single family and multi-family units reported separately • Percent of non-residential square footage constructed per year without natural gas hook-ups, non-residential project types reported separately (e.g., office, retail, restaurant) • Percent of permitted renovations per year that include electrifying existing building systems (e.g., water heater, space heater), residential and non-residential projects reported separately
Outcome Metrics – What is the effect of those achievements?	
Implementation Metrics and Sources	<ul style="list-style-type: none"> • Total natural gas consumption per year (track by residential and non-residential) • Natural gas consumption/capita per year • MTCO₂e saved or avoided per year • Natural gas use in new buildings comprises 1% of forecast emissions in 2030. This action reduces these emissions by 36%.

Outreach and Education Opportunities

<ul style="list-style-type: none"> • Contact local stakeholders such as architects, builders, and contractors. • Provide outreach materials for permit counter. • Work with local artists to creatively identify the benefits of electrification through verbal, graphic or other forms of art and performance. • See additional recommendations for Action A.1.
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Action BE.5.

Community solar energy

Lead City Department	Key Partners	Time Frame Planning: 0-4 years	Time Frame Implementation: 16 years	Staff Support Required	Municipal Capital Cost	GHG Reduction	Climate Hazards Addressed	Co-Benefits
CMO: Sustainability	VCE							

GHG Reduction Potential: 2030: 35,300 MT CO₂e/yr 2040: 43,350 MT CO₂e/yr

Partner with Valley Clean Energy (VCE) to increase capacity in support of citywide building and transportation electrification, investments in community solar energy, and provide solar battery storage. Encourage all subscribers to enroll in the UltraGreen option. Develop financing/incentive options to support building and transportation energy electrification and energy efficiency improvements.

Related CAAP Actions:

- BE.7 Renewable energy in City facilities
- BE.8 Create community microgrids and resilience hubs
- TR.1 Electric vehicle charging plan

Funding and Resources

Initial Funding Needs	Initial and longer-term funding/staffing needs to be developed for community solar and battery storage projects in Davis. A study of cost differential between UltraGreen and Standard Green service is being developed with the goal of making UltraGreen the default for Davis community. No information is currently available for funding to support financing/incentive options
Biennial Funding Needs	Biennial costs for these programs will be developed when more information is available on programs above
Staffing Needs	Developing these programs will be in collaboration with VCE. For the City, staffing needs can be handled within existing workflows.
Funding Opportunities	<ul style="list-style-type: none"> • Building Codes Implementation for Efficiency and Resilience (US Department of Energy) • Energy Efficiency and Conservation Block Grant Program (US Department of Energy) • Energy Partnership Program (California Energy Commission) • Green Proving Ground Program (US General Services Administration, US Department of Energy) • CARB (related to building the electric grid)

Implementation Information

Project Lead (and Staff)	Sustainability Manager
External Partners	VCE
Priority Level/General Timeframe	Short-term (3 years) through Long-term (related to different components of action)
Immediate Next Steps	<p>This action has three components:</p> <ol style="list-style-type: none"> 1. Partner with Valley Clean Energy to invest in community solar energy and provide solar battery storage. <ul style="list-style-type: none"> • Evaluate creation of a customer electric bill credit that covers the average increase for residential customers. • Consider integration with Action A.8, Create community microgrids and resiliency hubs. Additionally, solar installations may be developed as solar farms or related to specific community areas, such as affordable or senior housing. • Assess community needs and potential locations and costs. Address the impacts to low-income communities, other vulnerable populations. • Monitor local, state and federal funding opportunities. • Factor in potential installations that create techno-ecological synergies (for example, pollinator-friendly solar installations, floating solar on irrigation ponds and wastewater treatment, “agrivoltaics,” and “rangevoltaics”). 2. Encourage all subscribers to enroll in the UltraGreen option. <ul style="list-style-type: none"> • A pilot project of automatic transition to UltraGreen for all Davis customers is being evaluated, with priority for providing UltraGreen to vulnerable and low-income at no cost first. • Develop outreach strategy to notify customers of the benefits, environmental impacts and costs of the transition to UltraGreen. • In addition to UltraGreen, the City can support VCE’s effort to work toward delivering 100% time-coincident (24/7) carbon-free or renewable energy in the next 5 years, in consideration of other factors, and as compared to an annual based procurement approach. This is an effort to reduce demand for fossil-based electricity generation by matching generation and load timing and helping to enable a more rapid and deep decarbonization of the electric grid. Consider portfolio diversification, energy storage, and load shaping/shifting, as currently pursued by Peninsula Clean Energy in San Mateo County. 3. Develop financing/incentive options that would support building energy efficiency improvements and electrification. Develop additional information for implementation of financing and incentives for community properties.
Implementation Milestones	<ul style="list-style-type: none"> • For item 1, initiate planning within 12 months of CAAP approval, and roll out programs until reassessment and new goal setting at 2030 interim target. • For item 2, complete pilot in 1-2 years following CAAP approval. • For item 3, initiate planning within 12 months of CAAP approval, and roll out programs until reassessment and new goal setting at 2030 interim target.
Initiation Timeline	Within 3 months of CAAP approval
Completion Timeline	Complete or re-evaluate all components by 2030.

Performance Tracking Metrics

Output Metrics – What was achieved by this action?	
Implementation Metrics and Sources	<ul style="list-style-type: none"> • Capacity of community solar energy installed per year • Battery storage capacity installed in Davis per year, residential and non-residential reported separately • Percent of customers enrolled in VCE’s UltraGreen per year • Electricity purchased through UltraGreen rather than Standard Green / year
Outcome Metrics – What is the effect of those achievements?	
Implementation Metrics and Sources	<ul style="list-style-type: none"> • Total electricity consumption per year (track by residential and non-residential) • Total electricity production generated per year from newly installed community solar programs MT CO₂e saved or avoided per year • Electricity generation comprises 7% of forecast emissions in 2030. This action reduces these emissions by 100%.

Outreach and Education Opportunities

<ul style="list-style-type: none"> • Develop community outreach and education about microgrids, community solar energy and solar battery storage. • Work with VCE to support understanding of community member adoption of UltraGreen. Use City’s adoption of UltraGreen as a model for community members. • Implement a recognition program identifying business and commercial emissions reduction. Include public recognition and awards for leading businesses. Expand the City of Davis Partners for a Greener Davis program. • Educate community members about the Oakland EcoBlock model. Potentially join with other communities to encourage state legislature and the California Public Utilities Commission (CPUC) to enable implementation of programs like Oakland EcoBlock. • Work with local artists to creatively communicate benefits of VCE’s UltraGreen program, building and transportation electrification through art and performance.

Action BE.6.

Carbon mitigation fund

Lead City Department	Key Partners	Time Frame Planning: 0-4 years	Time Frame Implementation: 16 years	Staff Support Required	Municipal Capital Cost	GHG Reduction	Climate Hazards Addressed	Co-Benefits
CMO: Sustainability	Regional agency collaboration							

GHG Reduction Potential: N/A, but provides funding for CAAP implementation

Establish a carbon mitigation fund to collect voluntary and/or mandatory payments to mitigate local emissions activities, with collected funds used to support a range of local, climate-change-related projects.

Related CAAP Actions:

No direct related actions. However, this program may fund projects that address CAAP actions.

Funding and Resources

Initial Funding Needs	Initial and longer-term funding and staffing needs to be developed.
Biennial Funding Needs	In the long term, the carbon mitigation fund would aim to be self-sustaining.
Staffing Needs	Developing framework for carbon mitigation fund can be handled within existing workflows. Once fund is in place, additional staff will be required to manage programs.
Funding Opportunities	Staff will work with City’s grant funding consultant through the City of Davis Comprehensive Funding Plan to identify grant funding and other financing and funding sources for development and implementation of this program. This action has the potential to generate revenue, which could be used to cover action costs.

Implementation Information

Project Lead (and Staff)	Sustainability Manager; Economic Development Coordinator
External Partners	Sacramento Metropolitan Air Quality Management District (SMAQMD) and Yolo Solano Air Quality Management District (AQMD); CARB; Sacramento Area Council of Governments (SACOG); regional city and county partners
Priority Level/General Timeframe	Short-term (3 years) depending on development of approach and regional collaboration efforts

Immediate Next Steps	<p>1. Meet with regional partners (SMAQMD, CARB, SACOG, Sacramento County, City of Sacramento and city-county regional collaboration group, to discuss opportunities for developing a regional carbon mitigation fund to collect funds for local projects. Include agency management, planning, climate action and economic development staff and resources. This can include voluntary funds (such as personal air travel offsets), and/or mandated fees, consistent with state law, such as local GHG mitigation funds or developer impact fees. Address important questions:</p> <ul style="list-style-type: none"> • Does the carbon mitigation fund imply taxes or fees? Address legal issues and determine types and sources (i.e. vehicle sales, real estate or developer fees, building permit fees, local services, restaurants) • Does a carbon mitigation fund rely on voluntary contributions? (personal travel, consumer purchases) • How would funds be collected and administered? • What entity would determine priorities for spending the funds? <p>2. Identify potential state, regional and local public and private funding resources and opportunities (voluntary and/or mandatory) to establish and manage funds and deploy projects to reduce greenhouse gas emissions, increase resilience and address climate risk.</p> <p>3. Identify key sectors and project types eligible for carbon mitigation fund resources, potentially including transportation; building energy, efficiency and electrification; water conservation; equity and climate justice (EJ); or other project types.</p> <p>4. Identify fund management structure, such as joint powers authority, AQMD or CARB management or other approach. As appropriate, establish memoranda of understanding with participating agencies.</p>
Implementation Milestones	<ul style="list-style-type: none"> • For item 1, within 3 months of CAAP adoption • For item 2, within 9 months • For item 3, within 18 months • For item 4, within 24 months
Initiation Timeline	Within 3 months of CAAP adoption
Completion Timeline	Launch of carbon mitigation fund within 3 years of CAAP adoption. Implementation of fund will be ongoing.

Performance Tracking Metrics

Output Metrics – What was achieved by this action?	
Implementation Metrics and Sources	<ul style="list-style-type: none"> • Funds collected per year • Funds distributed per year for climate change-related activities (mitigation and adaptation)
Outcome Metrics – What is the effect of those achievements?	
Implementation Metrics and Sources	<ul style="list-style-type: none"> • MTCO₂e per year estimated to be reduced (by emissions sourced) from funded GHG mitigation activities (program application can be designed to request this information) • Climate resilience outcomes (e.g., number of heat/smoke related health incidents, number of critical buildings constructed/renovated above base flood elevation)

Outreach and Education Opportunities

- Use accrued funding to implement creative activities that promote GHG reductions. These activities could include temporary public art interventions in parking areas, parks, and other spaces that impact or benefit from reductions, as well as performances that support GHG reductions, such as Bike City Theatre Company's *Light the Way* children's musical.
- Consider community participation and advocacy for building this implementation tool to address collective GHG reduction and climate resiliency issues regionally (Yolo County or broader). Possible uses of local resources are to strengthen the local grid, provide support to low-income and marginalized households and businesses, and fund unique and innovative local solutions.

Action BE.7.

Renewable energy in City facilities

Lead City Department	Key Partners	Time Frame Planning: 0-4 years	Time Frame Implementation: 16 years	Staff Support Required	Municipal Capital Cost	GHG Reduction	Climate Hazards Addressed	Co-Benefits
PWUO	VCE							

GHG Reduction Potential: 2030: 750 MT CO₂e/yr 2040: 950 MT CO₂e/yr

Switch from fossil gas to electricity, renewable hydrogen, or other non-fossil renewables in all existing City facilities, and include a provision that the City shall upgrade to UltraGreen (100% renewable energy) with Valley Clean Energy for all municipal accounts.

Related CAAP Actions:

- BE.5 Community solar energy
- BE.8 Create community microgrids and resilience hubs

Funding and Resources

Initial Funding Needs	Initial and longer-term funding and staffing needs to be developed. Complete review of all City facilities related to switching infrastructure, develop transition plan and cost estimate for implementation (approximately \$250,000).
Biennial Funding Needs	Biennial funding needs for facilities improvements will be determined based on the assessment and the timeframe for implementation
Staffing Needs	Current staffing is likely adequate. Consultant needed to perform assessment.
Funding Opportunities	Energy Partnership Program (California Energy Commission)

Implementation Information

Project Lead (and Staff)	Deputy Directors (Operations & Administration), Facilities Supervisor, Senior Electrician
External Partners	VCE, consultant and contractors
Priority Level/General Timeframe	This project has two components: <ol style="list-style-type: none"> Short-term (1 year) to enroll City accounts to UltraGreen Long term, medium-to-low priority project to achieve fuel switching in City facilities. Assessment within three years: Use independent consultant to evaluate existing City facilities, and provide steps and costs required to decarbonize each. Implementation over 10-15 years (as buildings are updated).

Immediate Next Steps	<ol style="list-style-type: none"> 1. For municipal facility UltraGreen enrollment, complete assessment of existing accounts to resolve issues, then transition all City electricity accounts to VCE UltraGreen. 2. For fuel switching in City facilities, engage consultant to assess facilities, prioritize facilities for fuel switching, and complete engineering work and funding identification for initial projects.
Implementation Milestones	<ul style="list-style-type: none"> • Complete switch to UltraGreen for all City electricity accounts • Complete study of facilities upgrades and fuel-switching requirements • Complete prioritization list of facilities • Identify funding sources • Complete engineering, construction documents, bid packages, and implementation • Monitor progress of facility fuel switching, costs saved for operations and other data
Initiation Timeline	Within 6 months of funding approval to start Request for Proposal (RFP) for City facilities analysis
Completion Timeline	Major projects and completion timeline for implementation will be developed as part of facilities analysis

Performance Tracking Metrics

Output Metrics – What was achieved by this action?	
Implementation Metrics and Sources	<ul style="list-style-type: none"> • Percent of city government electric accounts enrolled in UltraGreen • Percent of city government buildings that are fully decarbonized (i.e., no fossil fuel equipment/appliances)
Outcome Metrics – What is the effect of those achievements?	
Implementation Metrics and Sources	<ul style="list-style-type: none"> • Total natural gas consumption per year for city government utility accounts • Natural gas use in municipal buildings accounts for 0.2% of forecast emissions in 2030. This action reduces these emissions by 80%.

Outreach and Education Opportunities

<ul style="list-style-type: none"> • Use City’s transition to UltraGreen and electrification of municipal facilities as a model for community members. • Install meters or other visual information with interpretive signage at City facilities to show electricity generated by solar, GHG emissions reduction metrics, and other data. <ul style="list-style-type: none"> • Provide an interpretive display at City Hall showing use of an electric vehicle (EV) as battery storage for building electricity. • Provide an interpretive display at City Hall for Home Energy Score information, Energy Star and other energy efficiency data.

Action BE.8.

Create community microgrids and resiliency hubs

Lead City Department	Key Partners	Time Frame Planning: 0-4 years	Time Frame Implementation: 16 years	Staff Support Required	Municipal Capital Cost	GHG Reduction	Climate Hazards Addressed	Co-Benefits
PWUO CMO: Sustainability, PCS	VCE						 	

Address and incentivize the creation of community microgrids, community battery “co-ops”, and the networking of local energy sources. Create and/or support resiliency hubs that remain in operation during a power grid outage.

Related CAAP Actions:

- BE.5 Community solar energy
- AD.6 Public resources during extreme weather events

Funding and Resources

Initial Funding Needs	Initial and longer-term funding/staffing needs to be developed. Pilot resiliency hub at Veterans Memorial Center can be funded with existing City funds. Creation of community microgrids, community battery “co-ops”, and the networking of local energy sources require additional assessment.
Biennial Funding Needs	See above.
Staffing Needs	See above. Pilot resiliency hub at Veterans Memorial Center can be implemented and managed by existing City staff.
Funding Opportunities	<ul style="list-style-type: none"> Building Resilient Infrastructure and Communities Grant Program (Federal Emergency Management Agency) Local Energy Action Program (US Department of Energy) Community Resilience Center Program (California Strategic Growth Council)

Implementation Information

Project Lead (and Staff)	Project Lead TBD. Staff: PWUO Deputy Director (Operations), PCS Director, Sustainability Manager
External Partners	VCE, PG&E, DJUSD, UC Davis, Yolo County (libraries), and private/third-party businesses

Priority Level/General Timeframe	Short-term (1 year) to initiate Veterans Memorial Center pilot Medium to long-term (3-10 years) for further work on community microgrids, battery co-ops and additional resiliency hub development
Immediate Next Steps	This project has two components: <ol style="list-style-type: none"> 1. Address and incentivize the creation of community microgrids, community battery storage "co-ops" Work with local partners such as VCE, and external/private business to incentivize microgrids, solar PV arrays/farms, battery storage and other utility and energy source networking. 2. Create and/or support resiliency hub(s) to remain in operation during power grid outage. Identify City definition and operation parameters for resiliency hub(s) provided by City. Address which City facilities are best suited for solar and battery storage components required; which facilities already have back-up generators in place; which facilities are accessible, etc. Implement first resiliency hub at existing City facility, currently determined to be Veterans Memorial Center. Provide solar PV and battery storage (existing diesel generator to be decommissioned/used as backup). Provide supplies and operations plan for use as resiliency hub as necessary, given emergent situations. Consider other hub locations associated with City facilities. Develop a computer model of the existing grid to help in planning future microgrids, future urban development (TR.11), expansion of the EV charging system (TR.1), and expansion of solar facilities throughout the city (BE.5).
Implementation Milestones	<ul style="list-style-type: none"> • Complete resiliency hub at Vet's Memorial • Develop more information for other action components • Complete city grid computer model.
Initiation Timeline	<ol style="list-style-type: none"> 1. For item 1, within 3 months of CAAP approval 2. For item 2, within 3 years 3. For item 3, within 3 years
Completion Timeline	Implementation will be on-going as projects are identified. Most likely, community microgrid and resiliency hub development will continue from CAAP adoption through 2040 target timeframe

Performance Tracking Metrics

Output Metrics – What was achieved by this action?	
Implementation Metrics and Sources	<ul style="list-style-type: none"> • Number of microgrid projects implemented per year • Number of resiliency hubs implemented per year • Number of dwellings within 5 min drive of hub per year
Outcome Metrics – What is the effect of those achievements?	
Implementation Metrics and Sources	<ul style="list-style-type: none"> • Number of outages during a heat wave and hours of outages per year, as compared to number of heat waves, with tracking to determine if outages are being reduced • Number of people attending hub per year • Number of people within 5 mins attending hub per year

Outreach and Education Opportunities

- Support workforce development to enable local workers to access local efficiency and electrification jobs.
- Work with local partners such as VCE and private businesses to inform residents and businesses about opportunities for microgrids, solar PV arrays/farms, battery storage and other utility and energy source networking.
- Advocate to make sure local distribution grid is upgraded to accommodate the electrification of the transportation sector.
- Partner with VCE to provide educational and outreach materials.
- Engage youth and young adults in outreach and education about energy efficiency and sustainability.
- Consider City development or partnerships (such as with Explorit Science Center or Tree Davis) to create summer programs to provide climate education.
- Consider collaborating with DJUSD and UC Davis to create a Climate Action to empower youth and young adults advocate for community energy resilience.
- Work with community members and artists to provide unique and innovative ways to encourage community involvement.

Action TR.1.

Electric Vehicle Charging Plan

Lead City Department	Key Partners	Time Frame Planning: 0-4 years	Time Frame Implementation: 16 years	Staff Support Required	Municipal Capital Cost	GHG Reduction	Climate Hazards Addressed	Co-Benefits
CMO: Sustainability PWET	VCE				\$ \$\$			

GHG Reduction Potential: 2030: 55,500 MT CO₂e/yr 2040: 117,250 MT CO₂e/yr

Update and implement the Davis Electric Vehicle Charging Plan (2017) to determine public and private charging infrastructure needs, time frame, and implementation approach to enable all vehicles to go electric. Identify and implement the first five-year plan including specific locations and feasibility, costs, potential grant funding and partners, electric vehicle adoption needs and opportunities. Include provisions for low-income and vulnerable community members.

Related CAAP Actions:

- TR.2 Decarbonize municipal fleet
- TR.4 Electric micromobility vehicles
- TR.10 Low emissions vehicle program

Funding and Resources

Initial Funding Needs	\$80,000: Initial funding needs for consultant fees to complete the plan update. SACOG grant funding may be used, or grant funding may be sought in collaboration with regional partners. Many of the prioritized transportation actions overlap; more analytics are required during initial studies and Zero Net Energy Plan to address relative GHG reduction values and action prioritization.
Biennial Funding Needs	\$500,000: Biennial funding needs for City contributions to EV infrastructure; matching funds for grant opportunities for implementation; incentives for community member adoption of electric vehicles, with primary focus on low-income and vulnerable community members.
Staffing Needs	EV Charging Plan Update can be completed with current City staff. Implementation of the plan actions would require approximately one quarter full time employee (FTE) per year in the Sustainability Program to lead the effort (in collaboration with PWET).
Funding Opportunities	<ul style="list-style-type: none"> Charging and Fueling Infrastructure Grant Program (Federal Highway Administration) Clean Transportation Program (California Energy Commission) Grants for Buses and Bus Facilities Program (Federal Transit Administration)

	<ul style="list-style-type: none"> • Green Proving Ground Program (US General Services Administration, US Department of Energy) • Low Carbon Transit Operations Program (Caltrans) • Low or No Emission Vehicle Program (Federal Transit Administration) • National Electric Vehicle Infrastructure Formula Program (Federal Highway Administration) • Sustainable Communities Grant (Caltrans) • This action has the potential to generate revenue, which could cover action costs.
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Implementation Information

Project Lead (and Staff)	Sustainability Manager and Senior Civil Engineer
External Partners	VCE, Yolo County and regional partners
Priority Level/General Timeframe	Short-term, high-priority project. EV Charging Plan Update consultant to be engaged in FY 2022-23; overall implementation timeframe to be determined, first five-year plan will be identified and implemented as part of project.
Immediate Next Steps	<ol style="list-style-type: none"> 1. Identify funding for electric vehicle (EV) planning consultant. 2. Sustainability Manager to develop Scope of Work for 2023-28 Davis Electric Vehicle Charging Plan Update with Commission Input. Include electric micromobility vehicle charging (electric bikes, scooters, motorcycles). Include community outreach and tools to determine how public charging infrastructure will be used and identify needs based on access to charging. Identify barriers and potential solutions for low-income residents to access charging infrastructure Consider addressing permit streamlining, infrastructure siting, consumer education and other jurisdiction support for transportation electrification. 3. Contract with existing on-call engineering consultant or release project RFP; negotiate and execute project professional services agreement. Address potential disconnect between GHG emissions from specific activities (like commuting to jobs outside of Davis and UC Davis) and the actions that are offered as solutions to clearly identify GHG relationship between emitting activities and actions that will address those emissions. Identify high-priority sites for public charging stations based on proximity to rental units, particularly multi-family apartments. 4. Work with VCE for implementation during and after plan development: VCE is planning for a significant penetration of EV charging in their long-term planning. VCE is launching an EV rebate program in the summer of 2022 to incentivize EV adoption, with higher rebates for low-income customers. 5. Community Outreach and Engagement with regular Commission Input. Public review of draft plan. 6. City Council adoption of 2023-2028 EV Charging Plan.
Implementation Milestones	<ul style="list-style-type: none"> • Approve Scope of Work and RFP. • Complete consultant selection and execute PSA. • Outreach and engagement to determine community priorities; Commission presentations and input/expertise.

	<ul style="list-style-type: none"> • Complete draft plan and public review; City Council adopts plan. • Complete grant applications and identify pilot projects to begin charging infrastructure implementation and programs for electric vehicle adoption.
Initiation Timeline	<ol style="list-style-type: none"> 1. For item 1 of next steps, within 2 months of CAAP approval 2. For item 2, within 2 months (concurrent with 1) 3. For item 3, within 4 months 4. For item 4, within 4 months 5. For item 5, ongoing collaboration with VCE 6. For item 6, ongoing public engagement during contract 7. For item 7, within 12 months of CAAP approval
Completion Timeline	2023-28 EV Charging Plan: 12 months after action initiation; Implementation of plan: Ongoing

Performance Tracking Metrics

Output Metrics – What was achieved by this action?	
Implementation Metrics and Sources	<ul style="list-style-type: none"> • Percent of target public charging infrastructure in place per year • Number of chargers servicing rental/apartments • Number of chargers in place by type and year • Quantity of energy distributed by type and year • Percent of 100% green energy used by type and year
Outcome Metrics – What is the effect of those achievements?	
Implementation Metrics and Sources	<ul style="list-style-type: none"> • Number of plug-in electric vehicles (PEVs) registered in Davis per year • Percent of vehicles in Davis that are PEVs per year • If possible, track number of PEVs registered by household income level and address disparities of adoption between higher and lower income level, if it exists • On-road transportation accounts for 68% of forecast emissions in 2030. This action reduces these emissions by 17%.

Outreach and Education Opportunities

<ul style="list-style-type: none"> • Needs of low-income and vulnerable community members must be addressed from the outset. • Implementation of additional EV charging should be an adaptive process over time so that EV space allocation in public areas meets the need of increased EV ownership as it evolves. • Establish partnerships with apartment and multi-family housing management firms to encourage installation of charging stations for renters. • Provide for e-bike charging as well. • Consider public health benefits of eliminating ICE vehicles. • Consider developing and implementing a local fuel tax to fund transportation-related GHG reductions that emerge from this process. This intervention may require sponsoring legislation. • Use creative arts interventions to design welcoming spaces around electric charging stations.

Action TR.2.

Decarbonize municipal fleet

Lead City Department	Key Partners	Time Frame Planning: 0-4 years	Time Frame Implementation: 16 years	Staff Support Required	Municipal Capital Cost	GHG Reduction	Climate Hazards Addressed	Co-Benefits
PWET PWUO Fleet CMO: Sustainability					\$ \$			

GHG Reduction Potential: **2030:** 550 MT CO₂e/yr **2040:** 1,100 MT CO₂e/yr

Develop an aggressive plan to transition the municipal vehicle fleet to alternative fuels (e.g., electric, battery electric vehicle, hydrogen).

Related CAAP Actions:

TR.1 Electric vehicle charging plan

Funding and Resources

Initial Funding Needs	\$67,000; Funding for Fleet Transition Plan will use current SACOG grant monies. Future funding for implementation will come from other grant opportunities and City budget allocations.
Biennial Funding Needs	Biennial funding needs will need to account for potential increased cost of vehicles and replacement costs, additional electricity charges, as well as support for maintenance of infrastructure; to be offset by cost savings and decreased fuel costs. Annual savings, once fleet electrification is completed, are estimated at \$1.2 million per year.
Staffing Needs	Fleet Transition Plan development, coordination and administration available with current staffing. There may be additional contracted vehicle/infrastructure maintenance required for implementation of recommendations.
Funding Opportunities	<ul style="list-style-type: none"> • Charging and Fueling Infrastructure Grant Program (Federal Highway Administration) • Clean Transportation Program (California Energy Commission) • Grants for Buses and Bus Facilities Program (Federal Transit Admin) • Green Proving Ground Program (US General Services Administration, US Department of Energy) • Low Carbon Transit Operations Program (Caltrans) • Low or No Emission Vehicle Program (Federal Transit Administration) • National Electric Vehicle Infrastructure Formula Program (Federal Highway Administration) • Sustainable Communities Grant (Caltrans)

Implementation Information

Lead Entity	PWET, PWUO, CD
Project Lead (and Staff)	PWET Senior Engineer; PWUO Deputy Director (Administration), Fleet Manager; Sustainability Manager
External Partners	Potential partners include VCE, EV infrastructure contractors
Priority Level/General Timeframe	Short-term project, with high priority for implementing the Fleet Transition Plan. Total fleet electrification timeline is maximum 10 years, based on available technology and funding, and related to vehicle replacement schedule.
Immediate Next Steps	<ol style="list-style-type: none"> 1. City Council approval scope of work and consultant selection 2. Complete Fleet Transition Plan; City Council adoption. 3. Adopt policy to require replacement of existing fleet internal combustion engine (ICE) vehicles, beginning with electric vehicles for passenger and light duty vehicles. Include Davis Community Transit (DCT) vehicles. Follow with medium and heavy-duty vehicles and equipment. Exclude exempt vehicles such as fire engines or other emergency or specialty vehicles until viable options are available in the future. 4. Complete construction documents and bid package for infrastructure improvements. 5. Install EV charging infrastructure to support increase in electric vehicles and initiate fleet electrification.
Implementation Milestones	Implement milestones as identified in Fleet Transition Plan
Initiation Timeline	<ol style="list-style-type: none"> 1. For item 1, City Council approval completed 2022 2. For item 2, within 6 months, projected March 2023 3. For item 3, within 3 months of City Council Fleet Transition Plan adoption 4. For item 4, first phase installations within 6 months of City Council Fleet Transition Plan adoption, projected June 2023
Completion Timeline	Ongoing roll-out of fleet vehicle replacement with EVs and installation of charging infrastructure. Total time frame 8-10 years, or completion by 2030-2032.

Performance Tracking Metrics

Output Metrics – What was achieved by this action?	
Implementation Metrics and Sources	<ul style="list-style-type: none"> • Percent of municipal fleet passenger vehicles that are non-fossil fuel vehicles on an annual basis • Percent of municipal fleet light-duty vehicles that are non-fossil fuel vehicles on an annual basis • Percent of municipal fleet medium/heavy-duty vehicles that are non-fossil fuel vehicles on an annual basis • Percent of emergency vehicles that are non-fossil fuel vehicles on an annual basis and track the number/types of vehicles requesting exemptions
Outcome Metrics – What is the effect of those achievements?	
Implementation Metrics and Sources	<ul style="list-style-type: none"> • Gallons of fuel used in municipal fleet per year, by fuel type (e.g., gasoline, diesel, biodiesel and type, gallons of gasoline equivalent natural gas)

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| | <ul style="list-style-type: none">• On-road transportation by the municipal fleet comprises 0.3% of forecast emissions in 2030. This action reduces these emissions by 50%. |
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Outreach and Education Opportunities

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| <ul style="list-style-type: none">• Implement creative art or vehicle wraps on alternative fuel vehicles to celebrate their efficiency to the public.• Provide annual press releases on the number/percentage of fleet vehicles transitioned to non-fossil fuel.• Showcase City's non-fossil fuel vehicles at community events. |
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Action TR.3.

“First/last mile” transportation

Lead City Department	Key Partners	Time Frame Planning: 0-4 years	Time Frame Implementation: 16 years	Staff Support Required	Municipal Capital Cost	GHG Reduction	Climate Hazards Addressed	Co-Benefits
PWET	Unitrans YCTD SACOG DJUSD				\$ \$ \$			

Address “first mile/last mile” and short-trip transportation needs by continuing to prioritize, fund, and implement on-going programs/partnerships and develop new programs/partnerships to provide alternative transportation options within Davis. Include specific provisions for low-income or vulnerable populations. Include specific action recommendations, pilot programs, or other ways to implement actions.

Related CAAP Actions:

- TR.4 Electric micromobility vehicles
- TR.5 Pedestrian and bicycle safety
- TR.6 Expand public transit
- TR.7 Strengthen regional transit
- TR.9 Transportation Demand Management (TDM) program

Funding and Resources

Initial Funding Needs	Approximately \$50,000 required to contract transportation planning consultant to address realistic high-level opportunities and recommendations for physical or programmatic improvements.
Biennial Funding Needs	Identify biennial funding needs for implementation with consultant input. Incorporate funding provisions specifically for low-income or vulnerable populations; extending e-bike/scooter contracts beyond pilot; providing additional resources for the Safe Routes to School program.
Staffing Needs	Identify staffing needs for implementation with consultant input.
Funding Opportunities	<ul style="list-style-type: none"> • Active Transportation Program (Caltrans) • Low Carbon Transit Operations Program (Caltrans) • Rebuilding American Infrastructure with Sustainability and Equity Discretionary Grant Program (US Department of Transportation) • Regional Program (Sacramento Area Council of Governments) • Sustainable Communities Grant (Caltrans) • Transformative Climate Communities (California Strategic Growth Council) • Transit and Intercity Rail Capital Program (California State Transportation Agency)

Implementation Information

Project Lead (and Staff)	PWET Assistant Director; Safe Routes to School Coordinator
External Partners	Yolo County Transportation District (YCTD), Unitrans, SACOG, DJUSD
Priority Level/General Timeframe	Short Term for certain components: The e-bike/scooter pilot contract (with provided Lime) should be in place on the next 2-6 months. It includes a tiered fee structure for low-income users. Safe Routes to School components should be short-term (1-2 years). Other components will be medium to long-term, as identified by staff, Commissions and consultant input.
Immediate Next Steps	<ol style="list-style-type: none"> 1. City Council to consider pilot program. 2. Consider implementation of City-administered survey on an annual basis, similar to annual UC Davis Campus Travel Survey, to allow for program evaluation and to gain better insight about trips and whether e-bikes/scooters are being used for first and last mile transport. 3. Execute Lime agreement for e-bike and scooter pilot program. 4. Evaluate the action items from “Beyond Platinum Bicycle Action Plan” and determine what additional funding is needed for plan implementation. 5. Evaluate Safe Routes to School program to identify program priorities and funding needs. 6. Educate community about opportunities through Davis Community Transit (DCT), an inclusive paratransit program. 7. Contract transportation planning consultant to address “first mile/last mile” needs (especially for low income and vulnerable populations), opportunities, priorities and recommendations. Consider freight movement and delivery such as food, e-commerce including promotion of neighborhood electric vehicles (NEVs), e-bikes and quadricycles, and e-cargo vans. Identify funding sources for actions and pilot programs for first 3 years. Evaluate need and location of parking sites for e-bikes and scooters to help bridge the first/last mile gap.
Implementation Milestones	Additional physical or programmatic improvements to address last mile needs will be medium to long-term, as identified by staff, Commissions and consultant input.
Initiation Timeline	<ol style="list-style-type: none"> 1. For next steps item 1 above, December 2022 2. For item 2, 3 months after CAAP adoption 3. For item 3, 3 months after CAAP adoption 4. For item 4, 3 months after CAAP adoption 5. For item 5, 6 months after CAAP adoption
Completion Timeline	Lime contract pilot completion projected for no later than December 2022. Other components will be developed as opportunities arise.

Performance Tracking Metrics

Output Metrics – What was achieved by this action?	
Implementation Metrics and Sources	<ul style="list-style-type: none"> • Linear feet of bikeway facilities installed or improved, both city-wide and within ½ mile of transit stops and schools. • Linear feet of pedestrian facilities installed or improved, both city-wide and within ½ mile of transit stops and schools. • Number of new or improved bicycle and pedestrian crossings, both city-wide and within ½ mile of transit stops and schools. • Number of annual one-way trips generated within City of Davis by shared micromobility program. • Number of residents/workers within ¼ and ½ mile walk/bike distance of a transit stop/station. • Number of low income or vulnerable residents within ¼ and ½ mile walk/bike distance of a transit stop/station. • Total number of daily commute and non-commute trips by mode. • Non-motorized commute and non-commute trip mode split. • “First mile/Last mile” transit stop/station access mode split.
Outcome Metrics – What is the effect of those achievements?	
Implementation Metrics and Sources	<ul style="list-style-type: none"> • Total City of Davis-generated VMT and/or VMT per capita. • Daily or annual vehicle trips on key local and regional roadways.

Outreach and Education Opportunities

<ul style="list-style-type: none"> • Identify barriers for residents to adopt bicycling or other micromobility use. • Work with DJUSD to promote and incentivize non-single vehicle student drop off. Work with the Safe Routes to School program and youth/family education to normalize active mobility and reduce use of fossil fuel powered vehicles. • Prohibit idling on school properties and while delivering goods. • Consider options for re-establishing third-party pedicab service. • Publicize and acknowledge existing and emerging businesses that have adopted non-fossil fuel delivery methods. • Work with local artists and graphic designers to illustrate importance of reducing fossil fuel powered vehicle travel within Davis.

Action TR.4.

Electric micromobility vehicles

Lead City Department	Key Partners	Time Frame Planning: 0-4 years	Time Frame Implementation: 16 years	Staff Support Required	Municipal Capital Cost	GHG Reduction	Climate Hazards Addressed	Co-Benefits
PWET	YCTD SACOG				\$ \$			

GHG Reduction Potential: **2030:** 200 MT CO₂e/yr **2040:** 150 MT CO₂e/yr

Develop financing/incentives for purchasing, using, and maintaining electric micromobility vehicles for personal use (such as bicycles, scooters, trailers). Include specific provisions for low-income and vulnerable populations.

Related CAAP Actions:

- TR.1 Electric vehicle charging plan
- TR.3 “First mile/Last mile” transportation

Funding and Resources

Initial Funding Needs	Initial and biennial funding needs will be developed as part of the project planning, and may be dependent on grant funding sources available
Biennial Funding Needs	Initial and biennial funding needs will be developed as part of the project planning, and may be dependent on grant funding sources available
Staffing Needs	Proposed programs can be implemented with current staff.
Funding Opportunities	<ul style="list-style-type: none"> Active Transportation Program (Caltrans) Rebuilding American Infrastructure with Sustainability and equity Discretionary Grant Program (US Department of Transportation) Regional Program (SACOG) Sustainable Communities Grant (Caltrans) Transformative Climate Communities Program (California Strategic Growth Council)

Implementation Information

Project Lead (and Staff)	PWET Assistant Director
External Partners	YCTD, SACOG

Priority Level/General Timeframe	Mid-term (3-5 years)
Immediate Next Steps	<ol style="list-style-type: none"> 1. Develop performance measures and costs associated with the project. 2. Review and identify funding sources and product sources (e-bikes and scooters). 3. Identify methods, programs and incentives for low-income and vulnerable populations. 4. Implement programs.
Implementation Milestones	<ul style="list-style-type: none"> • Complete planning study for project • Identify initial funding sources and partners to assist with provisions for low-income and vulnerable community members • Develop metrics for success and monitor progress.
Initiation Timeline	<ol style="list-style-type: none"> 1. For next steps item 1, 6 months after CAAP adoption 2. For item 2, 6 months after CAAP adoption 3. For item 3, 6 months after CAAP adoption 4. For item 4, begin implementation 12 months after CAAP adoption
Completion Timeline	3-5 years after action initiation

Performance Tracking Metrics

Output Metrics – What was achieved by this action?	
Implementation Metrics and Sources	<ul style="list-style-type: none"> • Number of electric micromobility vehicles purchased per year for both all residents and low-income and vulnerable residents • Total dollar value of financial incentives provided per year
Outcome Metrics – What is the effect of those achievements?	
Implementation Metrics and Sources	On-road transportation comprises 68% of forecast emissions in 2030. This action reduces these emissions by 1%.

Outreach and Education Opportunities

<ul style="list-style-type: none"> • Provide more biking classes and education for adults. • Include a program for ancillary family/work needs such as bike trailers, children’s bike seats, bike locks, etc. • Identify barriers for residents to adopt bicycling or other micromobility use. • Work with DJUSD to promote and incentivize non-single vehicle student drop off. • Consider developing a broader outreach campaign, in addition to biking education and safety classes, that provides information about subsidies for e-bikes and messaging encouraging safe riding in the Davis context (speed limits for greenbelts, not riding on sidewalks, where to park)

Action TR.5.

Pedestrian and bicycle safety

Lead City Department	Key Partners	Time Frame Planning: 0-4 years	Time Frame Implementation: 16 years	Staff Support Required	Municipal Capital Cost	GHG Reduction	Climate Hazards Addressed	Co-Benefits
PWET PWUO	DJUSD				\$ \$ \$			

Encourage active transportation with infrastructure improvements. Implement roadway and bikeway infrastructure improvements in existing right-of-way, such as “road diets,” narrower pedestrian crossing distances, green stormwater infrastructure, etc., to meet Green Streets standards and increase safety for pedestrians and bicycles.

Related CAAP Actions:

AD.2 Urban Forest

Funding and Resources

Initial Funding Needs	<p>\$50,000 to \$100,000 estimated to be required to develop roadway standards that include these elements with a complete review and development of new standards as well as an improvement implementation plan.</p> <p>\$150,000 to \$200,000 estimated to be required to update the Beyond Platinum Bicycle Action Plan (2014) with identification of needs and locations for infrastructure improvements as well as funding sources for these projects.</p> <p>The City is currently developing a Roadway Safety plan that will identify existing locations with a collision history as well as improvements that would address any identified issues.</p>
Biennial Funding Needs	Biennial funding needs for infrastructure improvements will be developed as part of the project planning, and may be dependent on grant funding sources available
Staffing Needs	Implementation can be completed with current staff.
Funding Opportunities	<ul style="list-style-type: none"> • Active Transportation Program (Caltrans) • Community Design Funding Program (SACOG) • Low Carbon Transit Operations Program (Caltrans) • Rebuilding American Infrastructure with Sustainability and Equity Discretionary Grant Program (US Department of Transportation) • Regional Program (SACOG) • SB1 State Local Partnership Program (California Transportation Commission) • Sustainable Communities Grant (Caltrans) • Transformative Climate Communities Program (California Strategic Growth Council)

	<ul style="list-style-type: none"> • Transit and Intercity Rail Capital Program (California State Transportation Agency) • Urban Greening Program (California Natural Resources Agency)
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Implementation Information

Project Lead (and Staff)	PWET Assistant Director; PWUO Environmental Resources Division Manager
External Partners	DJUSD
Priority Level/General Timeframe	Mid-term. Begin planning, project identification and implementation within first two to three years following CAAP adoption
Immediate Next Steps	<ol style="list-style-type: none"> 1. Identify intersections with safety issues and lacking tree cover 2. Update the Beyond Platinum Bicycle Action Plan (2014) to identify the needs and locations for infrastructure improvements as well as funding sources for these projects. 3. Identify priority infrastructure improvements in existing development and CIP projects. Assign target dates for completing construction of priority projects not addressed in the current CIP. 4. Update standards for roadway improvements including Green Streets standards, intersection design standards, shade provision over roadways and bikeways with trees or structures, green stormwater infrastructure, etc. Tree coverage for pedestrian and bicycle infrastructure is linked with the safe use of these pieces of infrastructure
Implementation Milestones	<ul style="list-style-type: none"> • For next steps item 1, within six months following CAAP adoption • For item 2, within twelve months following CAAP adoption • For item 3, within twelve months following CAAP adoption • For item 4, within twelve months following CAAP adoption
Initiation Timeline	Within six months of CAAP adoption
Completion Timeline	On-going implementation

Performance Tracking Metrics

Output Metrics – What was achieved by this action?	
Implementation Metrics and Sources	<ul style="list-style-type: none"> • Linear feet of bikeway facilities installed or improved • Linear feet of pedestrian facilities installed or improved • Number of new or improved bicycle and pedestrian crossings • Number of traffic calming projects installed • Number of bicycle-vehicle and pedestrian-vehicle conflicts eliminated or improved • Track increased coverage of pedestrian and bicycle infrastructure with shading from trees/structures annually
Outcome Metrics – What is the effect of those achievements?	
Implementation Metrics and Sources	<ul style="list-style-type: none"> • Total and killed or severely injured (KSI) collisions involving people walking or bicycling (total collisions and/or collision rate): citywide, along key corridors (e.g., Russell Boulevard) and at key intersections

Outreach and Education Opportunities

- Consider creative interventions such as bicycle safety haiku (as in New York City), painted crosswalks, traffic calming street murals, etc.
- Engage youth and young adults in outreach and education about active transportation and options and ways to be sustainable, to be safe and to reduce vehicle use.
- Consider City development or partnerships (Bike Davis, Bike Campaign, Cool Davis, etc.) to create summer programs for climate education.
- Consider collaborating with DJUSD and UC Davis to create a Climate Action to empower youth and young adults to advocate for local transportation.

Action TR.6.

Expand public transit

Lead City Department	Key Partners	Time Frame Planning: 0-4 years	Time Frame Implementation: 16 years	Staff Support Required	Municipal Capital Cost	GHG Reduction	Climate Hazards Addressed	Co-Benefits
PWET CMO: Sustainability	Unitrans YCTD SacRT Amtrak							

GHG Reduction Potential: **2030:** 2,050 MT CO₂e/yr **2040:** 2,000 MT CO₂e/yr

Subsidize public transit so it is free for all to use. Promote expansion of public transit routes and increased operation frequency within Davis to support day-to-day travel needs.

Related CAAP Actions:

TR.7 Strengthen regional transit

Funding and Resources

Initial Funding Needs	Once full annual operational costs for Yolobus and Unitrans are developed, the costs and funding sources for the one-year pilot project can be developed.
Biennial Funding Needs	This project will be implemented in partnership with transit agencies. Further discussion is needed to determine funding needs and agency responsibilities
Staffing Needs	Current staff can implement pilot program
Funding Opportunities	<ul style="list-style-type: none"> • This action and TR.7 can be part of a Zero Emissions Vehicle plan, which could be a regional effort. • Grants for Buses and Bus Facilities Program (Federal Transit Administration) • Low Carbon Transit Operations Program (LCTOP) • Rebuilding American Infrastructure with Sustainability and Equity Discretionary Grant Program (US Department of Transportation) • Regional Program (SACOG) • SB1 State Local Partnership Program (California Transportation Commission) • Sustainable Communities Grant (Caltrans) • Transit and Intercity Rail Capital Program (California State Transportation Agency)

Implementation Information

Project Lead (and Staff)	PWET Assistant Director, Sustainability Manager
External Partners	Unitrans/UC Davis, YCTD, SACOG; potentially Sacramento Regional Transit District (SacRT) and Amtrak Capital Corridor
Priority Level/General Timeframe	High-priority, short-term (1-3 years) for one-year YoloBus/Unitrans free transit pilot project Mid-term (3-5 years): Full regional implementation of expanded service routes and frequency; implementing free transit
Immediate Next Steps	<ol style="list-style-type: none"> 1. Complete update to Short Range Transit Plan. 2. Meet with YCTD and/or Unitrans and develop estimates for costs to conduct a pilot project that would allow all riders to be fare-free for one year. Develop potential tracking metrics for ridership. 3. Using the data collected on travel patterns, routes and frequencies, determine what the impacts would be to service and what additional service would need to be provided to encourage higher mode shift to transit. Consider/prioritize routes that help low-income transit users to access basic needs locations such as grocery stores, pharmacies, and health centers. Both this action and TR.7 may be tied to density of development, but there are other contributing factors (affordability, geographic reach of bus lines, frequency) 4. Secure grant funding to implement pilot project. 5. Complete 12-month pilot.
Implementation Milestones	Following completion of 12-month pilot project, develop statistics and lessons learned for fare-free transit in Yolo County for GHG reduction, including decrease in VMT and transit adoption by both disadvantaged groups and the general population. Address implications at state level and opportunities to extend pilot as well as to scale up the service area beyond Yolo County.
Initiation Timeline	<ol style="list-style-type: none"> 1. For next steps item 1, begin within 3 months (September 2022) 2. For item 2, immediately (July 2022) 3. For item 3, within 3 months (September 2022) 4. For item 4, begin to research now and implement within 6 months after CAAP adoption 5. For item 5: target FY 2023-24 (July to July)
Completion Timeline	Pilot project completion within two years.

Performance Tracking Metrics

Output Metrics – What was achieved by this action?	
Implementation Metrics and Sources	<ul style="list-style-type: none"> • Total number of weekday and/or annual revenue service hours/miles on bus routes and route segments operating within the City of Davis • Number of weekday peak transit vehicles operating within the City of Davis • Number of weekday daily and peak one-way transit trips operating within the City of Davis • Total number of weekday and/or annual one-way rail and Amtrak thruway trips serving the Davis Depot • Ratio of private vehicle vs. transit peak period travel time between key origin-destination pairs

	<ul style="list-style-type: none"> • Number of residents/workers within ¼ and ½ mile walk/bike distance of a transit stop/station • Number of residents/workers within ¼ and ½ mile walk/bike distance of a high-frequency transit stop/station (one one-way transit trip every 15 minutes or less) • Number of low income or vulnerable residents within ¼ and ½ mile walk/bike distance of a transit stop/station • Weekday on-time performance for routes operating within the City of Davis
Outcome Metrics – What is the effect of those achievements?	
Implementation Metrics and Sources	<ul style="list-style-type: none"> • Total number of weekday and/or annual transit passenger boardings and alightings at transit stops/stations within the City of Davis • Total number of weekday and/or annual low income or vulnerable transit passenger boardings and alightings at transit stops/stations within the City of Davis • Total City of Davis-generated VMT and/or VMT per capita • On-road transportation comprises 68% of forecast emissions in 2030. This action reduces these emissions by 1%.

Outreach and Education Opportunities

<ul style="list-style-type: none"> • Collaborate with UC Davis and regional partners • Develop communications and outreach plan for free transit. As noted by a community member, students already are big transit users in Davis. This will only increase with better routes and timing and new micro-transit and last mile solutions. UC Davis students who vote to tax themselves to provide adequate transit for all can serve as a model. • Develop visual materials at bus stops and in vehicles of Unitrans, Yolobus, Amtrak, etc. promoting regional transit use and incorporating humor. • Consider this program as a model for other state regions; this action may benefit from lobbying and advocating for program changes at the state and federal level.
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Action TR.7.

Strengthen regional transit

Lead City Department	Key Partners	Time Frame Planning: 0-4 years	Time Frame Implementation: 16 years	Staff Support Required	Municipal Capital Cost	GHG Reduction	Climate Hazards Addressed	Co-Benefits
PWET CMO: Sustainability	Unitrans YCTD SacRT Amtrak							

GHG Reduction Potential: 2030: 1,800 MT CO₂e/yr 2040: 1,700 MT CO₂e/yr

Coordinate with regional transit agencies and cities to promote cohesive transit interconnections, including express buses to Woodland, West Sacramento, Sacramento, etc.

Related CAAP Actions:

- TR.1 Electric vehicle charging plan
- TR.6 Expand public transit

Funding and Resources

Initial Funding Needs	This project will be developed in conjunction with TR.6, and funding needs will be developed concurrently
Biennial Funding Needs	This project will be developed in conjunction with TR.6, and funding needs will be developed concurrently
Staffing Needs	Implementation can be completed with current staff.
Funding Opportunities	<ul style="list-style-type: none"> Grants for Buses and Bus Facilities Program (Federal Transit Administration) Low Carbon Transit Operations Program (LCTOP) Rebuilding American Infrastructure with Sustainability and Equity Discretionary Grant Program (US Department of Transportation) Regional Program (SACOG) SB1 State Local Partnership Program (CA Transportation Commission) Transit and Intercity Rail Program (California State Transportation Agency)

Implementation Information

Project Lead (and Staff)	PWET Assistant Director, Sustainability Manager
External Partners	YCTD, SacRT, SACOG, Amtrak, Unitrans

Priority Level/General Timeframe	Short term, Within first 3 years for planning/collaboration framework
Immediate Next Steps	This will require coordination with several transit providers and service expansion across the region. Need to identify immediate needs and opportunities to start/promote service expansion. City will look to either SACOG or YCTD to help champion the idea. Consider tracking travel times for common trips from central destinations (e.g., downtown Davis to downtown Sacramento) as a metric of regional transit connections. Tracking these connections through existing methods (google maps, or transit trip planning tools) could provide useful insight into how the public perceives these connections and provide a cheap source of data. Measuring trips by source and destination on regional transit provide understanding of existing need to strengthen connections.
Implementation Milestones	Coordinate this action with regional partners and in concert with action TR.6
Initiation Timeline	See TR.6
Completion Timeline	See TR.6

Performance Tracking Metrics

Output Metrics – What was achieved by this action?	
Implementation Metrics and Sources	<ul style="list-style-type: none"> • Total number of weekday and/or annual revenue service hours/miles on bus routes and route segments operating between the City of Davis and other communities/destinations such as West Sacramento and Woodland • Number of weekday peak transit vehicles operating between the City of Davis and other communities/destinations (West Sacramento, Woodland) • Number of weekday daily and peak one-way transit trips operating between the City of Davis and other communities/destinations • Total number of weekday and/or annual one-way rail and Amtrak thruway trips serving the Davis Depot • Ratio of private vehicle vs. transit peak period travel time between key origin-destination pairs (e.g., Downtown Davis to Downtown Sacramento) • Number of residents/workers 30- 60-minutes or less by transit to/from Davis
Outcome Metrics – What is the effect of those achievements?	
Implementation Metrics and Sources	<ul style="list-style-type: none"> • Total number of weekday and/or annual transit passenger boardings and alightings using intercity services at transit stops/stations within Davis • Total number of weekday and/or annual low income or vulnerable transit passenger boardings and alightings at intercity services transit stops/stations • Total City of Davis-generated VMT and/or VMT per capita • On-road transportation comprises 68% of forecast emissions in 2030. This action reduces these emissions by 1%.

Outreach and Education Opportunities

<ul style="list-style-type: none"> • Work with Unitrans, YCTD, SacRT and other regional partners to develop outreach messaging. • Work with UC Davis graphics arts department in collaboration with Center for Sustainable Transportation and other campus groups to promote regional art related to transportation.
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Action TR.8.

Downtown parking improvements

Lead City Department	Key Partners	Time Frame Planning: 0-4 years	Time Frame Implementation: 16 years	Staff Support Required	Municipal Capital Cost	GHG Reduction	Climate Hazards Addressed	Co-Benefits
PWET	Downtown Businesses							

GHG Reduction Potential: 2030: 14,850 MT CO₂e/yr 2040: 13,200 MT CO₂e/yr

Revisit most recent parking pricing study (Downtown Paid Parking, City Council March 5, 2019) and implement pilot projects to test their effectiveness. Reduce or eliminate minimum parking standards in new developments.

Related CAAP Actions:

- TR.1 Electric vehicle charging plan
- TR.10 Low emissions vehicle program

Funding and Resources

Initial Funding Needs	No additional funding required to implement the current plan. Updating the plan would cost between \$100,000 and \$150,000.
Biennial Funding Needs	Biennial funding needs for downtown parking improvements will be developed as part of the project planning, and may be dependent on grant funding sources available
Staffing Needs	Implementation can be completed with current staff.
Funding Opportunities	<ul style="list-style-type: none"> SB1 State Local Partnership Program (California Transportation Commission) Sustainable Communities Grant (Caltrans) This action has potential to generate revenue, which could cover action costs.

Implementation Information

Project Lead (and Staff)	PWET Assistant Director
External Partners	Downtown businesses
Priority Level/General Timeframe	Short-term (1-3 years) for pilot project implementation
Immediate Next Steps	1. Review Downtown Parking plan and summary to determine potential pilot projects. Work with City Commissions to identify parking goals, recommendations for projects, timeframes and approaches.

	<ol style="list-style-type: none"> 2. Fully address negative equity impacts of parking pricing for pilot projects and potential program development. 3. Address lack of data for actions focused on improving transit and micromobility (which show lower GHG reduction potential), as compared to GHG reductions attributed to parking pricing, where data is available to support analysis. Additional study may be warranted to determine accurate GHG reductions and comparisons of these actions, given the negative potential equity impacts of parking pricing. 4. Develop a proposed approach to convert the parking lots to paid lots, potentially using a mobile app like ParkMobile (as used by UC Davis and the City of Sacramento) to defer costs. Kiosks may still be needed to collect payment. Work with City Commissions to address proposals. As per City Council action on March 25, 2019, initial paid parking lots shall include: <ul style="list-style-type: none"> • E Street Plaza Lot • Amtrak Train Depot Lot (free on weekends) • North F Street Lot (E-F-3rd-4th) • South G Street Lot 5. Align new approach with existing permit parking technologies and consider alignment with Amtrak’s requested parking pass solution for customers. 6. Develop costs and target revenue neutral policy. 7. Consider creating a parking authority that can bond to cover the costs and then enforce/operate the program.
Implementation Milestones	Develop pilot projects and approach
Initiation Timeline	Within 5 years of CAAP approval
Completion Timeline	Unknown at this time.

Performance Tracking Metrics

Output Metrics – What was achieved by this action?	
Implementation Metrics and Sources	<ul style="list-style-type: none"> • Parking supply and peak parking demand at parking facilities located within Downtown Davis and within potential parking spillover areas (e.g., Old East Davis) • Total number of daily commute and non-commute trips to/from Downtown Davis by mode • Non-motorized commute and non-commute trip mode split for trips to/from Downtown Davis
Outcome Metrics – What is the effect of those achievements?	
Implementation Metrics and Sources	<ul style="list-style-type: none"> • Total City of Davis-generated VMT and/or VMT per capita • On-road transportation comprises 68% of forecast emissions in 2030. This action reduces those emissions by 5%, which can be significant.

Outreach and Education Opportunities

<ul style="list-style-type: none"> • Work with City Commissions to identify parking goals and objectives. • Consider Downtown Plan components related to downtown parking and develop further implementation measures and messaging.
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Action TR.9.

Transportation Demand Management (TDM) program

Lead City Department	Key Partners	Time Frame Planning: 0-4 years	Time Frame Implementation: 16 years	Staff Support Required	Municipal Capital Cost	GHG Reduction	Climate Hazards Addressed	Co-Benefits
PWET CMO: Sustainability	YCTD SACOG UCD Employers							

GHG Reduction Potential: **2030:** 2,850 MT CO₂e/yr **2040:** 2,700 MT CO₂e/yr

Address recommendations for developing, funding, and staffing a coordinated Transportation Demand Management (TDM) program to encourage and/or require “all people, all trips” to implement TDM strategies, such as remote work opportunities, community education and outreach, micromobility, vanpool, rideshare, subsidized transit, employee parking cash-out, etc.

Related CAAP Actions:

- TR.4 Electric micromobility vehicles
- TR.5 Pedestrian and bicycle safety
- TR.6 Expand public transit
- TR.7 Strengthen regional transit

Funding and Resources

Initial Funding Needs	Assume \$150,000 to fund the plan and seed initial TDM strategies.
Biennial Funding Needs	Biennial community TDM funding needs will be developed as part of the project planning, and may be dependent on grant funding sources available
Staffing Needs	Implementation can be completed with current staff.
Funding Opportunities	<ul style="list-style-type: none"> • Active Transportation Program (Caltrans) • Low Carbon Transit Operations Program (Caltrans) • Regional Program (SACOG) • Sustainable Communities Grant (Caltrans) • Transportation Demand Management Program (SACOG) • Transit and Intercity Rail Capital Program (TIRCP)

Implementation Information

Project Lead (and Staff)	PWET Assistant Director; Sustainability Manager
External Partners	YCTD, SACOG, UCD, Other large employers, Potential partners: Cool Davis, City Commissions (Natural Resources Commission; Bicycling, Transportation, and Street Safety Commission); Sacramento Transportation Management Association
Priority Level/General Timeframe	Short term (1-3 years)
Immediate Next Steps	<ol style="list-style-type: none"> 1. Collaborate with UC Davis for current TDM approaches. 2. Develop a TDM plan for Davis, including provisions for remote work opportunities, community education and outreach, micromobility, vanpool, rideshare, subsidized transit, employee parking cash-out and other methods to effect community behavior change. 3. Work with local businesses to incentivize TDM. 4. Implement guidelines for new development projects to provide for TDM. 5. Coordinate with transit providers to implement TDM incentives. 6. Develop tracking methods and metrics.
Implementation Milestones	Develop outreach materials to provide information about TDM. Work with Cool Davis and other partners to reach community members. Seek grant and foundation funding to implement TDM practices and programs.
Initiation Timeline	For item 1 above, begin within 3 months of CAAP approval
Completion Timeline	Ongoing

Performance Tracking Metrics

Output Metrics – What was achieved by this action?	
Implementation Metrics and Sources	<ul style="list-style-type: none"> • Development and implementation of a City of Davis TDM Plan • Identification of existing staff and/or hiring of new staff for TDM Plan preparation, implementation, monitoring • Development and adoption of VMT impact analysis guidelines (including analysis methodologies and significance thresholds) for use during California Environmental Quality Act review for land development projects. Incorporate elements of TDM Plan for the purposes of VMT mitigation. • Update roadway impact fee program to a VMT-based fee program. Incorporate elements of TDM Plan for future transportation improvements to be funded by impact fees.
Outcome Metrics – What is the effect of those achievements?	
Implementation Metrics and Sources	<ul style="list-style-type: none"> • Total City of Davis-generated VMT, residential VMT per capita, and work VMT per job

Outreach and Education Opportunities

- Work with City Commissions to identify TDM goals and objectives.
- Support implementation of State-wide roadway pricing, including Interstate 80 over the Yolo Causeway.
- Support legislation to enable local jurisdictions to implement roadway pricing on local roadways.
- Advocate to the CPUC to modify Rule 21 and other interconnection requirements and “EV as storage” protocols.
- Consider Downtown Plan components related to TDM and develop further implementation measures.
- Engage youth and young adults in outreach and education about TDM and active transportation options.
- Consider City development or partnerships (Bike Davis, Bike Campaign, Cool Davis, etc.) to create summer programs to offer climate education.
- Consider collaborating with DJUSD and UC Davis to create a Climate Action to empower youth and young adults to advocate for transportation.

Action TR.10.

Low Emissions Vehicle Program

Lead City Department	Key Partners	Time Frame Planning: 0-4 years	Time Frame Implementation: 16 years	Staff Support Required	Municipal Capital Cost	GHG Reduction	Climate Hazards Addressed	Co-Benefits
PWET	CARB SACOG	Not known	Not known					   

Research, develop, and establish a low-emissions vehicle program that disincentivizes travel by internal combustion engine (ICE) vehicles.

Related CAAP Actions

- TR.4 Electric micromobility vehicles
- TR.5 Pedestrian and bicycle safety
- TR.6 Expand public transit
- TR.7 Strengthen regional transit
- TR.9 Transportation Demand Management (TDM) program

Funding and Resources

Initial Funding Needs	Not known at this time.
Biennial Funding Needs	Not known at this time
Staffing Needs	Based on staffing levels and needs at time of implementation.
Funding Opportunities	<ul style="list-style-type: none"> • Clean Transportation Program (California Energy Commission) • Low or No Emission Vehicle Program (Federal Transit Administration) • National Electric Vehicle Infrastructure Formula Program (Federal Highway Administration) • Regional Program (SACOG) • Sustainable Communities Grant (Caltrans) • Strategic Growth Council's Affordable Housing and Sustainable Communities Programs • This action has the potential to generate revenue, which could be used to cover action costs.

Implementation Information

Project Lead (and Staff)	PWET Assistant Director
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External Partners	Potential partners: CARB, SACOG
Priority Level/General Timeframe	Long-term
Immediate Next Steps	<ul style="list-style-type: none"> • Research other cities’ approaches to developing low-emissions vehicle zones (including low- or zero-emissions freight zones) to understand how geographic boundaries are set and expanded over time, what vehicle types are impacted by the program and how (e.g., exclusion, fee to enter), and how the program is implemented (e.g., registrations, automatic license plate readers). • Identify a pilot project low-emissions vehicle zone within the city, such as a higher population area where safety, environmental, or air quality/health risks could be mitigated with the program. • Implement a public engagement/outreach campaign for the pilot project to communicate benefits of the program and build support from residents/local businesses, including equity considerations for small businesses and marginalized residents. • Develop a phased implementation plan for expanding the geographic extent and program strictness.
Implementation Milestones	Not known at this time
Initiation Timeline	Within 5 years of CAAP approval
Completion Timeline	Not known at this time

Performance Tracking Metrics

Output Metrics – What was achieved by this action?	
Implementation Metrics and Sources	<ul style="list-style-type: none"> • Number of low-emissions vehicles purchased per year • Total dollar value of financial incentives provided per year
Outcome Metrics – What is the effect of those achievements?	
Implementation Metrics and Sources	<ul style="list-style-type: none"> • To be determined

Outreach and Education Opportunities

<ul style="list-style-type: none"> • Promote “Open Streets” in Downtown Davis, maximizing opportunities for car-free activities.

Action TR.11.

Develop sustainable housing

Lead City Department	Key Partners	Time Frame Planning: 0-4 years	Time Frame Implementation: 16 years	Staff Support Required	Municipal Capital Cost	GHG Reduction	Climate Hazards Addressed	Co-Benefits
CD: Planning	Housing advocates Developers Property owners							

Increase housing opportunities to support the jobs/housing balance and decrease vehicle miles traveled. Develop incentive options to increase housing construction in the city, including high-density, mixed-use (especially office space and food service), transit-oriented, and affordable options.

Related CAAP Actions: N/A

Funding and Resources

Initial Funding Needs	No additional funding required for initial efforts and policy development
Biennial Funding Needs	Not known at this time.
Staffing Needs	No additional staffing needed for initial efforts and policy development beyond filling vacant positions in CD.
Funding Opportunities	<ul style="list-style-type: none"> Community Design Funding Program (SACOG) Transformative Climate Communities Program (CA Strategic Growth Council) More potential funding opportunities in the housing development space

Implementation Information

Project Lead (and Staff)	CD Director and Principal Planner
External Partners	Housing advocates, developers and property owners
Priority Level/General Timeframe	Short-term (1-3 years) Address City policies and practices that constrain the City's ability to provide housing, including the provision of appropriately zoned sites to meet the City's housing needs as part of the implementation of the Housing Element Update. Address zoning and development requirements in the downtown to support the development of increased housing as part of the Downtown Plan implementation.
Immediate Next Steps	Complete the adoption of the Downtown Davis Specific Plan and adoption of the 2021-2029 Housing Element Update.

Implementation Milestones	<ul style="list-style-type: none"> • Provide sites for at least 2,075 housing units during the current planning period, including at least 580 very low-income units, 350 low-income units, 340 moderate-income units, and 805 above moderate-income units. • Rezone at least 23.6 acres to address City's shortfall of 472 lower-income RHNA units, plus a minimum buffer of additional 140 lower-income units • Continue discussions with DJUSD about the creation of housing on their headquarters site and start discussions about the creation of housing on surplus school property. • Continue to give priority water and sewer services to units necessary to meet the City's RHNA for this planning period, with specific priority given to affordable housing units. • Through the adoption of the Downtown Davis Specific Plan, provide opportunities for the development of owner-occupied townhouses, small cottages, and condominiums in and near the core area to limit sprawl and provide housing options. • Facilitate lot consolidation to support affordable housing on small parcels by offering reduced parking reqmt's, additional density bonuses, other incentives. • Create incentives to the development of affordable housing through measures such as flexible development standards that are compatible with surrounding neighborhood. The PD zone is meant to foster development flexibility. • Identify and implement one or more sources of robust permanent funding for the City's Housing Trust Fund, establish and prioritize uses for these funds, and establish a procedure for administering the Trust Fund. • Evaluate options for streamlining the development review process and implement options that are determined to be feasible.
Initiation Timeline	Concurrently with CAAP adoption.
Completion Timeline	Time frame varies for above milestones. Consider that implementation will be between 2022-2029, in alignment with Housing Element time frame.

Performance Tracking Metrics

Output Metrics – What was achieved by this action?	
Implementation Metrics and Sources	<ul style="list-style-type: none"> • Successful development of incentive options • Number of housing units constructed/year that got development incentives • Percent housing units constructed/year within ¼-mile walk of transit stop
Outcome Metrics – What is the effect of those achievements?	
Implementation Metrics and Sources	<ul style="list-style-type: none"> • Per capita VMT

Outreach and Education Opportunities

<ul style="list-style-type: none"> • Provide outreach and education about the climate value of land use decisions. • Comment from Cool Davis: GHG analysis of land use shows that households living in denser environments generate less GHG per capita because of reduced transportation GHG. It also reveals that lower income households generate less overall GHG because they are not consuming as many resources per capita.
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Action WW.1.

Climate-ready private landscapes

Lead City Department	Key Partners	Time Frame Planning: 0-4 years	Time Frame Implementation: 16 years	Staff Support Required	Municipal Capital Cost	GHG Reduction	Climate Hazards Addressed	Co-Benefits
PWUO PCS	Tree Davis UC Davis Community members						 	

GHG Reduction Potential: 2030: 50 MT CO₂e/yr 2040: 0 MT CO₂e/yr
(2040 reduction is less than 50 CO₂e/yr and rounded down to 0 for CAAP purposes)

Develop financing/incentive options with specific provisions for low-income and vulnerable populations that promote climate-ready private landscapes, such as installing drought tolerant, native, climate-ready plants and/or xeriscaping; programs that support turf removal; installing rainwater capture and harvesting equipment; and the use of green stormwater measures to enhance natural water infiltration.

Related CAAP Actions:

- AD.2 Urban forest
- AD.3 Green stormwater infrastructure

Funding and Resources

Initial Funding Needs	Initial funding needs to create financing and incentive programs for Davis property owners will be developed as part of the project planning, and may be dependent on grant funding sources available
Biennial Funding Needs	Biennial funding needs will be developed as part of the project planning
Staffing Needs	City staffing needs can most likely be handled within existing workflows and working with non-profit partners
Funding Opportunities	<ul style="list-style-type: none"> Transformative Climate Communities Program (CA Strategic Growth Council) Urban Greening Program (California Natural Resources Agency) CA Dept of Water Resources (rebates)

Implementation Information

Lead Entity	PWUO, PCS
Project Lead (and Staff)	PWUO Environmental Resources Manager and Conservation Coordinators; PCS Parks Supervisor
External Partners	Tree Davis, UC Davis, Community members and property owners
Priority Level/General	Short-term (3 years). High priority for water conservation
Immediate Next Steps	1. Develop City materials for outreach and education to promote water use efficiency and stormwater quality.

	<ol style="list-style-type: none"> 2. Develop approaches for targeting and incentivizing low-income and vulnerable homeowners. 3. Establish an incentive program to encourage landscape modification for all residents and property owners. 4. Develop approaches, financing and incentives for multi-family residential owners and renters which consider the “split incentives” issue. Address standard language for legal authority to make structural alterations (landscaping or otherwise) to rental properties through lease or other legal document. 5. Identify affordable housing complexes in Davis with opportunities to convert turf areas to drought-tolerant landscaping. 6. Continue to create and implement climate-ready landscaping for City parks.
Implementation Milestones	<p>Identify water conservation targets and metrics for private landscapes (possibly through AquaHawk)</p> <p>Secure funding for incentives for single-family and multi-family residential properties, with focus on vulnerable and low-income populations.</p>
Initiation Timeline	Immediately upon CAAP approval
Completion Timeline	Ongoing

Performance Tracking Metrics

Output Metrics – What was achieved by this action?	
Implementation Metrics and Sources	<ul style="list-style-type: none"> • Number of program participants that received financing/incentives, residential and non-residential participants reported separately • Percent of program participants that removed turf, installed native/drought-tolerant/xeriscape landscaping, installed rainwater capture equipment, and/or installed green stormwater measures (program application can be designed to request this information) • Percent of total low-income/vulnerable households participating per year
Outcome Metrics – What is the effect of those achievements?	
Implementation Metrics and Sources	<ul style="list-style-type: none"> • Gallons of potable water used per year • Gallons of potable water per capita, per residence or per acre/ year • Percentage of households with converted landscapes • Total dollar value of financial incentives provided per year • Water-related energy use comprises 0.1% of forecast emissions in 2030. This action reduces those emissions by 9%.

Outreach and Education Opportunities

<ul style="list-style-type: none"> • Provide education on behavior changes that reduce water use, water efficient landscapes and include information on the benefit that rain capture can provide deep winter watering to support trees in the summer, encourage downward root growth; provides building shading/reduces heat • Provide education and outreach to realtors and address the idea that sellers have (or have been advised) that installing new turf will enhance a property’s value. • Provide education on the water costs to maintain different styles of landscaping. • Provide greywater outreach and education. • Continue with public messaging related to water conservation and City water portal AquaHawk. • Provide education on drought tolerant tree choices and maintenance. Partner with Tree Davis volunteers or youth organizations for tree plantings.

Action AD.1.

Cool surfaces

Lead City Department	Key Partners	Time Frame Planning: 0-4 years	Time Frame Implementation: 16 years	Staff Support Required	Municipal Capital Cost	GHG Reduction	Climate Hazards Addressed	Co-Benefits
PWET PWUO CD	SMAQMD (research)				\$			

GHG Reduction Potential: **2030:** 50 MT CO₂e/yr **2040:** 150 MT CO₂e/yr

Develop ordinance(s) to require the use of cool surfaces, reflective materials, coatings, and other emerging technology to reduce the heat island effect. Include building (roof, walls, windows, paint etc.) and transportation (road/bike path surfaces, shade, etc.) measures.

Related CAAP Actions: N/A

Funding and Resources

Initial Funding Needs	Developing ordinances and opportunities for cool surfaces will not impact City funding. City projects meeting these standards may have incrementally higher costs.
Biennial Funding Needs	Develop funding needs and allow for increased costs for incorporating cool surfaces as part of capital improvement project planning
Staffing Needs	Current staff can implement action.
Funding Opportunities	<ul style="list-style-type: none"> Transformative Climate Communities Program (California Strategic Growth Council) Urban Greening Program (California Natural Resources Agency) This action has the potential to generate revenue depending on whether there will be fines under the mandatory implementation approach. This revenue could be used to cover action costs.

Implementation Information

Project Lead (and Staff)	PWET Senior Civil Engineer; PWUO Deputy Director (Operations); Chief Building Official
External Partners	SMAQMD (research available); climate advocacy groups
Priority Level/General Timeframe	Short-term/High priority

Immediate Next Steps	<ol style="list-style-type: none"> 1. Identify approaches to implementing cool surfaces requirements for roadways and bikeways (surfacing and providing shade). Develop pilot projects to test local conditions and metrics for heat reduction and GHG impacts (when available). Use these pilot installations to gather information prior to selecting products/manufacturers or adopting ordinances. 2. Improve City facilities to provide cool surfaces on roofs, walls, paving, etc. 3. Develop new and expand existing ordinances for cool surfaces. 4. Address bus shelters and other shading of surfaces where people congregate. 5. Create and identify “shade corridors” for walking and biking. 6. Monitor impacts of Central Park splashpad project, including more natural shade, use of solar power for the UV sterilization and a gathering place for everyone to cool down by the splashpad.
Implementation Milestones	Adopting new ordinances; improving City facilities for heat island impact and greenhouse gas emissions reduction; using City implementation as a model for community.
Initiation Timeline	Immediately upon CAAP approval
Completion Timeline	Ongoing

Performance Tracking Metrics

Output Metrics – What was achieved by this action?	
Implementation Metrics and Sources	<ul style="list-style-type: none"> • Successful adoption of ordinance • Percent of buildings with cool roofs, reflective materials, or coatings • Percent of buildings with cool walls, reflective materials, or coatings
Outcome Metrics – What is the effect of those achievements?	
Implementation Metrics and Sources	<ul style="list-style-type: none"> • Consider measurement of urban temperatures

Outreach and Education Opportunities

<ul style="list-style-type: none"> • Provide interpretive information at City facilities about cool surfaces, GHG emissions reductions, and other metrics. • Develop website information and handouts and provide information at City Hall building and permit counters about various cool surfaces. • Continue to pilot “Cool Roadways” projects and proactively elevate outreach about programs through social media, press releases and other communications procedures. • Involve citizen scientists in monitoring temperatures and albedo of test beds and evaluating glare in roads and bikeways.

Action AD.2. Urban forest

Lead City Department	Key Partners	Time Frame Planning: 0-4 years	Time Frame Implementation: 16 years	Staff Support Required	Municipal Capital Cost	GHG Reduction	Climate Hazards Addressed	Co-Benefits
PWUO	Tree Davis							

GHG Reduction Potential: **2030:** 150 MT CO₂e/yr **2040:** 500 MT CO₂e/yr

Expand urban forest in parks, greenbelts, and open space with climate-ready species that provide shade. Develop a tree-replacement plan for all City trees, based on assessment of age, and vigor. Provide educational materials to community members to encourage planting and care of climate-ready private trees and landscapes.

Related CAAP Actions:

- WW.1 Climate-ready private landscapes
- AD.1 Cool surfaces (shade, cooling and GHG reduction provided by trees)
- AD.5 Funding and staffing for existing efforts

Funding and Resources

Initial Funding Needs	Funds to implement the initial recommendations out of the Urban Forest Management Plan (staffing levels, tree planting & care etc.).
Biennial Funding Needs	Adequate funds to ensure ongoing operations as approved by Council from Urban Forest Management Plan recommendations.
Staffing Needs	As recommended by the Urban Forest Management Plan
Funding Opportunities	<ul style="list-style-type: none"> • Healthy Soils Program (California Department of Food and Agriculture) • Transformative Climate Communities Program (California Strategic Growth Council) • Urban Greening Program (California Natural Resources Agency)

Implementation Information

Project Lead (and Staff)	Urban Forestry Manager, Deputy Director (Operations)
External Partners	Tree Davis, contractors, partnerships with other jurisdictions in the City (DJUSD, County, etc.) and private property owners
Priority Level/General Timeframe	Already underway, additional effort pending approval of Urban Forest Management Plan

Immediate Next Steps	<ul style="list-style-type: none"> • Approve the Urban Forest Management Plan • As part of implementation, consider recommendations of Tree Commission: Consider incentives for increasing the number of trees on private properties (residential and commercial). Consider increasing the rate of tree planting to expand the urban forest meaningfully by making sure to more than offset the rate of tree mortality and removal. Increase urban forestry budget and staffing. Look for opportunities to expand the locations for planting trees such as median strips on overly wide streets (Loyola, Anderson, and Cowell east of Mace are examples), and where green infrastructure is proposed, such as the Davis Manor proposals. • Establish a sustainable funding mechanism • Continue complete planting programs in high priority EJ communities. • Develop a balanced approach to shading parking lots that puts trees where people are and allows solar panel shading where cars are in furtherance of the goals of AD.5.
Implementation Milestones	As determined by the Urban Forest Management Plan.
Initiation Timeline	Approve the Urban Forest Management Plan
Completion Timeline	Ongoing

Performance Tracking Metrics

Output Metrics – What was achieved by this action?	
Implementation Metrics and Sources	<ul style="list-style-type: none"> • Number of trees planted in public landscapes • Number of trees planted in private landscapes • Successful development and adoption of tree-replacement plan • Number of households received education materials
Outcome Metrics – What is the effect of those achievements?	
Implementation Metrics and Sources	<ul style="list-style-type: none"> • Percent increase in canopy cover • This action is projected to remove 150 MT CO₂e/yr from the atmosphere

Outreach and Education Opportunities

<ul style="list-style-type: none"> • Address opportunities for more community garden space. • Involve the community in outreach, education and recognition of the value of the urban forest, including opportunities for storytelling and art about trees, landscapes, and ecosystems. • Work closely with Tree Davis for outreach and education. • Engage youth and young adults in outreach and education about the urban forest. • Consider City development or partnerships (Tree Davis, etc.) to create summer programs for climate education. • Consider collaborating with DJUSD and UC Davis to create a Climate Action to empower youth and young adults to advocate for the urban forest. • Develop more messaging on trees in Davis to identify benefits. • Engage neighborhood residents to participate in street tree replacement. • Coordinate with the cycling community and others to maximize shade on active transportation corridors like bikeways and walkways.
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Action AD.3.

Green stormwater infrastructure

Lead City Department	Key Partners	Time Frame Planning: 0-4 years	Time Frame Implementation: 16 years	Staff Support Required	Municipal Capital Cost	GHG Reduction	Climate Hazards Addressed	Co-Benefits
PWUO CD CMO: Sustainability	UC Davis (research)				\$			

Develop policies to increase the use of green stormwater infrastructure and enhance natural water infiltration in public infrastructure.

Related CAAP Actions:

AD.4 Flood resilience of critical infrastructure

Funding and Resources

Initial Funding Needs	Address need for consultant to support development of policies beyond current NPDES requirements.
Biennial Funding Needs	None anticipated, other than when policy updates are required by State.
Staffing Needs	Vacant stormwater quality position to be filled. This role would manage consultant, and staffing needs would be covered with existing workflow.
Funding Opportunities	<ul style="list-style-type: none"> • Healthy Soils Program (California Department of Food and Agriculture) • Transformative Climate Communities Program (California Strategic) • Urban Greening Program (California Natural Resources Agency)

Implementation Information

Project Lead (and Staff)	Environmental Resources Manager, Stormwater Quality Manager, Senior Planner, Sustainability Manager
External Partners	UC Davis, California Stormwater Quality Association, State of California, consultant support
Priority Level/General Timeframe	Low priority, short-term effort, current regulations exist that require much of the infrastructure to be put in place
Immediate Next Steps	<ol style="list-style-type: none"> 1. Address need to incorporate green stormwater infrastructure principles into on-going climate-ready landscape implementation, urban forestry projects, and flood mitigation projects. 2. Consider reviewing new construction requirements to promote better integration of green infrastructure into new projects. Specify guidelines requiring impermeable

	<p>surface reduction and integrating green infrastructure into the drainage system (beyond CalGreen requirements).</p> <p>3. Develop greywater policies for new and existing buildings.</p> <p>4. Implement components of Resilient Street Lab concept (see AD.4 for more information) in neighborhoods, downtown and along major streets.</p> <p>5. Collaborate with UC Davis to identify green stormwater infrastructure opportunities.</p> <p>6. Consider green stormwater infrastructure facilities east of town to capture and infiltrate stormwater sent to the Yolo Bypass, including a study of potential benefits (or not) of this action, including local groundwater replenishment and support for the urban forest..</p>
Implementation Milestones	<p>1. Adopt greywater ordinance.</p> <p>2. Complete five local Resilient Street Lab projects in EJ neighborhoods with flood risk.</p>
Initiation Timeline	Within six months of CAAP adoption
Completion Timeline	Ongoing as policies & state regulations are updated

Performance Tracking Metrics

Output Metrics – What was achieved by this action?	
Implementation Metrics and Sources	<ul style="list-style-type: none"> • Successful adoption of policies • Number of green stormwater infrastructure catchments
Outcome Metrics – What is the effect of those achievements?	
Implementation Metrics and Sources	<ul style="list-style-type: none"> • Number of gallons of stormwater treated • Percent reduction in incidents of localized flooding/ponding

Outreach and Education Opportunities

<ul style="list-style-type: none"> • Promote Resilient Streets Lab projects completed in neighborhoods. • Work with UC Davis landscape design, human ecology and other departments to provide outreach about downtown and neighborhood-based storm water management project opportunities. • Work with youth groups such as Girl Scouts, Boy Scouts, RotorAct and others to implement local stormwater projects.

Action AD.4.

Flood resilience of critical infrastructure

Lead City Department	Key Partners	Time Frame Planning: 0-4 years	Time Frame Implementation: 16 years	Staff Support Required	Municipal Capital Cost	GHG Reduction	Climate Hazards Addressed	Co-Benefits
PWUO CMO: Sustainability	Caltrans YCFCWCD							

Relocate/elevate or otherwise address flooding issues and concerns for critical public infrastructure in projected flood areas.

Related CAAP Actions: N/A

Funding and Resources

Initial Funding Needs	<ul style="list-style-type: none"> Develop an estimate to hire consultant to conduct Needs Assessment for critical public infrastructure flood protection, including the recognition that the existing 100-year and 500-year zones are likely to expand over time as climate change influences the rainfall probabilities. Include a schedule and annual funding needs for implementation. Develop an estimate and approach to providing Needs Assessment for residential, commercial and institutional infrastructure flood protection. Allocate \$30,000 to pilot localized “Resilient Street Lab” projects (as described below) in environmental justice (EJ) neighborhoods in year 1
Biennial Funding Needs	<ul style="list-style-type: none"> Funding required for critical public infrastructure flood protection will be developed as part of consultant study. Allocate \$50,000 per year to implement further “Resilient Street Lab” pilot projects and develop further feasibility analysis and planning for larger flood resilience projects
Staffing Needs	Staffing needs for addressing critical public and private infrastructure are unknown. Localized flooding and stormwater management projects through implementation of Resilient Street Labs projects can be handled within existing workflow.
Funding Opportunities	<ul style="list-style-type: none"> Building Resilient Infrastructure Communities Grant Program (Federal Emergency Management Agency) Flood Mitigation Assistance Grant (Federal Emergency Management Agency) Potential funding partners: Corps of Engineers, DWR, Central Valley Flood Protection Board,

Implementation Information

Project Lead (and Staff)	PWUO Director and staff, Sustainability Manager
External Partners	Caltrans, Yolo County Flood Control & Water Conservation District (YCFCWCD), Sutter Health, Resilient Street Lab
Priority Level/General Timeframe	<ul style="list-style-type: none"> • Short-term: Pilot projects for EJ flood resilience; initiating studies for project alternatives and feasibility • Long-term: Major flood resilience projects at City facilities
Immediate Next Steps	<ol style="list-style-type: none"> 1. Identify areas and facilities with historic flooding, prone to flooding risk, or are located within the 100- and 500-year floodplain. 2. Based on the Vulnerability Assessment, critical infrastructure serving the city vulnerable to flooding located within the 100-year floodplain includes Sutter Davis Hospital, potable water wells, all five of the City's stormwater pump stations, approximately one mile of Highway 113, and more than 13 miles of City streets. Additionally, flooding is likely to cause the most impact to community assets such as the Davis Arts center, two churches, and two assisted living/retirement facilities. 3. Based on the Vulnerability Assessment, approximately 12.8% of areas identified as EJ (Environmental Justice) in Davis are in the 100-year flood zone, and an additional 4.7% of EJ areas are in the 500-year floodplain. 4. Identify and prioritize specific project areas to address flooding risk and risk reduction projects/approaches, especially for major City facilities and for areas impacting low income and vulnerable populations. 5. Develop alternatives and understand feasibility of projects. 6. Resilient Street Lab is a program that addresses localized flooding by adding Low Impact Design (LID) elements and planting/stormwater collection islands at street edges. Implement pilot projects in environmental justice communities, including implementing and monitoring Resilient Street Lab projects in areas identified in Vulnerability Assessment as both EJ and flood risk areas. 7. Implement major flood resilience projects at City facilities.
Implementation Milestones	<ul style="list-style-type: none"> • Next steps 1-6: Within two years of adopting CAAP • Next step 7: Long-term, to be developed when more information is available
Initiation Timeline	Within 3 months of CAAP approval
Completion Timeline	These projects are ongoing

Performance Tracking Metrics

Output Metrics – What was achieved by this action?	
Implementation Metrics and Sources	<ul style="list-style-type: none"> • Miles of streets no longer in flood plain mapping from 2012 FEMA mapping • Number of critical buildings constructed/renovated above base flood elevation
Outcome Metrics – What is the effect of those achievements?	
Implementation Metrics and Sources	

Outreach and Education Opportunities

- Collaborate with community members to promote neighborhood Resilient Street Lab projects.
- Implement 1% art fund to provide visual art addressing flooding.
- Work with UCD landscape design, human ecology and other depts. to design and pilot creative approaches to downtown and neighborhood-based storm water management (i.e. Kevin Perry, Urban Rain Design).

Action AD.5.

Funding and staffing for existing efforts

Lead City Department	Key Partners	Time Frame Planning: 0-4 years	Time Frame Implementation: 16 years	Staff Support Required	Municipal Capital Cost	GHG Reduction	Climate Hazards Addressed	Co-Benefits
PWUO	State and regional agencies						 	

GHG Reduction Potential: 2030: 5,900 MT CO₂e/yr 2040: 11,200 MT CO₂e/yr

Allocate funding and staff resources to aggressively implement important existing climate-related programs, policies and management, such as City utility infrastructure (water, wastewater and stormwater) and assets (trees, streets, etc.) Continue to conduct assessments at regular intervals to ensure efficient and effective operations that are at pace with industry improvements, and changing needs due to climate change impacts, and implement recommendations in the assessments as technologically and financially feasible.

Related CAAP Actions:

- WW.1 Climate-ready private landscapes
- AD.2 Urban forest

Funding and Resources

Initial Funding Needs	Dependent on recommendations from implementation plans.
Biennial Funding Needs	See above
Staffing Needs	Unknown, but potentially significant additions to various division staff to support recommendations from plans.
Funding Opportunities	This action has the potential to generate revenue, which could be used to cover action costs.

Implementation Information

Project Lead (and Staff)	Assistant to the PWUO Director, department division managers as applicable
External Partners	State, consultants, contractors, County, UC Davis, etc.

Priority Level/General Timeframe	Short-term/immediate. High priority Ongoing as part of regular asset management and program operations
Immediate Next Steps	See above
Implementation Milestones	Given the wide variety of suggested actions, no clear milestone actions. Could base milestones on each division within division planning, also could base on submittal of required State reporting
Initiation Timeline	Ongoing
Completion Timeline	Ongoing

Performance Tracking Metrics








Output Metrics – What was achieved by this action?	
Implementation Metrics and Sources	<ul style="list-style-type: none"> • Implementation of Stormwater Management Plan • Completion of update to the Urban Forestry Management Plan • Implementation of water conservation programs • Implementation of solid waste reduction programs
Outcome Metrics – What is the effect of those achievements?	
Implementation Metrics and Sources	<ul style="list-style-type: none"> • Solid waste accounts for 3% of forecast emissions in 2030. This action reduces those emissions by 38%. • The urban forest sequesters carbon; calculate annual additional carbon removal through landscape and trees.

Outreach and Education Opportunities

<ul style="list-style-type: none"> • Use existing public art staff and funded opportunities to promote climate-related goals and City actions and highlight implementation of climate-related programs, policies and management. • Continue to elevate City efforts and achievements through communications on social media, press releases, City website, announcements at City Council and Commissions.

Action AD.6.

Public resources during extreme weather events

Lead City Department	Key Partners	Time Frame Planning: 0-4 years	Time Frame Implementation: 16 years	Staff Support Required	Municipal Capital Cost	GHG Reduction	Climate Hazards Addressed	Co-Benefits
PWUO PCS SSH CMO: Sustainability	YSAQMD				\$		 	  

Develop policies to expand existing public services and resources provided by the City and community-based organizations during extreme weather events, such as high wind, air quality (smoke), cooling, and weather relief centers.

Related CAAP Actions:

BE.8 Create community microgrids and resilience hubs

Funding and Resources

Initial Funding Needs	Funding needs will be developed as projects are designed and approved by City Council
Biennial Funding Needs	Biennial funding needs will be identified as part of initial planning.
Staffing Needs	Staffing can be handled within existing workflows
Funding Opportunities	Building Resilient Infrastructure Communities Grant Program (Federal Emergency Management Agency)

Implementation Information

Project Lead (and Staff)	Director of Social Services and Housing; Sustainability Manager; PWUO Deputy Director (Operations); PCS Director
External Partners	Yolo Solano Air Quality Management District (YSAQMD) Potential partners: DJUSD, UCD, Yolo County (library and other spaces)
Priority Level/General Timeframe	Short term. High priority
Immediate Next Steps	<ol style="list-style-type: none"> 1. Complete plans and implementation of pilot resiliency hub at Veterans' Memorial. 2. Address public service needs assessment / gaps for responding to extreme weather events Identify at-risk populations and develop questions to address: Do these services require a resilience hub? What is the scale of the need? Do we need one hub, or more, or something else? What agencies will be involved

	<p>in providing these needs and how will they coordinate? Continue to provide cooling centers during extreme heat days. Continue to provide Daytime Homeless Respite Center resources and program. Develop two-year plan to address immediate goals and needs, provide timeline staffing and budget approaches.</p> <p>3. After first year, gather data from community members about services provided, and use to improve services for next two years.</p>
Implementation Milestones	<ol style="list-style-type: none"> 1. Within 3 months of CAAP approval 2. Within 6 months of CAAP approval 3. Within 15 months of CAAP approval
Initiation Timeline	Within 3 months of CAAP approval
Completion Timeline	Ongoing

Performance Tracking Metrics

Output Metrics – What was achieved by this action?	
Implementation Metrics and Sources	<ul style="list-style-type: none"> • Successful adoption of policies • Number of new cooling/weather relief centers opened • Number (or percentage) of vulnerable community members with access to services or shelter. •
Outcome Metrics – What is the effect of those achievements?	
Implementation Metrics and Sources	<ul style="list-style-type: none"> • MTCO₂e per year reduced through carbon sequestration/carbon removal (reported separately as natural carbon removal and industrial carbon removal)

Outreach and Education Opportunities

<ul style="list-style-type: none"> • Provide information and education on significant topics, including local conditions and hazards such as wildfire risk, air quality, and extreme heat. etc. • Provide information and education on water conservation and drought, including climate ready tree/landscape choices and maintenance for community members that shelter outdoors. • Partner with volunteers, community-based organizations, youth groups and others for tree plantings to provide additional shade and reduce urban heat island impacts. • Outreach to community partners through PTA meetings, school classes, neighborhood block parties, community-based organizations and advocacy groups • Provide extreme weather guides. • Provide air quality index sensors and education for citizen scientists to monitor and post information.
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Action CR.1.

Carbon sequestration and removal

Lead City Department	Key Partners	Time Frame Planning: 0-4 years	Time Frame Implementation: 16 years	Staff Support Required	Municipal Capital Cost	GHG Reduction	Climate Hazards Addressed	Co-Benefits
CMO: Sustainability	CARB YSAQMD SMAQMD				\$			

Develop policies to implement carbon sequestration and removal opportunities the City can pursue to balance remaining emissions by 2030/2040.

Related CAAP Actions:

BE.6 Carbon mitigation fund

CR.2 Carbon farm plans

Funding and Resources

Initial Funding Needs	No funding needed for initial policy development
Biennial Funding Needs	No funding needs identified at this time
Staffing Needs	No staffing needed for initial policy development
Funding Opportunities	<ul style="list-style-type: none"> Green Proving Ground Program (US General Services Administration, US Department of Energy) Healthy Soils Program (California Department of Food and Agriculture) Potential funding from selling carbon offsets or open space funds

Implementation Information

Project Lead (and Staff)	Sustainability Manager
External Partners	CARB, YSAQMD, SacMetro AQMD, other state agencies Potentially work with Capital Region Climate Readiness Collaborative, Yolo Land Trust, and other local governments such as Yolo County for collaboration on regional plans and implementation
Priority Level/General Timeframe	Long-term. Certain measures for carbon sequestration and removal will be implemented as part of other actions. Approaches to balance remaining emissions by 2040 will be included in this and subsequent CAAP updates.
Immediate Next Steps	1. Coordinate with other local governments (e.g., Yolo County) and public agencies (e.g., SMAQMD) in the region to evaluate the capacity for nature-

	<p>based carbon sequestration (e.g., forest expansion, agricultural/soil management practices, etc.) and collaborative approaches that would help maximize implementation of available strategies. Early output is a study with recommendations for carbon sequestration planning/ implementation.</p> <ol style="list-style-type: none"> 2. Continue staff research and development of approaches to increase use of carbon-embedded concrete. Companies make concrete components that sequester CO₂, such as Blue Planet Systems (blueplanetsystems.com) and Carbon Cure (https://www.carboncure.com). Consider adopting policies, building codes, and ordinances to require net-negative building materials in procurement and in construction approvals in the City. Marin County has adopted a building code to address net-negative concrete. 3. Look into approaches for Carbon Dioxide Removal (CDR). See “Climate Restoration: The Only Future That will sustain the Human Race” by Peter Fiekowski. www.peterfiekowsky.com 4. Evaluate industrial direct air carbon capture and storage technology options on a regular basis to monitor new project implementation examples and changes in the technology’s cost per ton removed; consider opportunities for joint facility development with other local and regional partners to help balance remaining emissions in multiple communities.
Implementation Milestones	<ol style="list-style-type: none"> 1. Within 1 year of CAAP adoption 2. Within 1 year of CAAP adoption 3. Within 1 year of CAAP adoption 4. Every two years after CAAP adoption
Initiation Timeline	Within 1 year of CAAP adoption
Completion Timeline	Ongoing

Performance Tracking Metrics

Output Metrics – What was achieved by this action?	
Implementation Metrics and Sources	<ul style="list-style-type: none"> • Outcomes may be based on projects chosen, with quantity of CO₂ sequestered as the ultimate outcome. • Potential 5-year milestone: Complete an evaluation report of optimal CDR opportunities coordinated with others in the region
Outcome Metrics – What is the effect of those achievements?	
Implementation Metrics and Sources	

Outreach and Education Opportunities

<ul style="list-style-type: none"> • Promoting information about types of carbon sequestration removal projects and pilots identified with estimated carbon sequestration attained or projected (MTCO₂e per year) • Work with community partners to identify carbon sequestration in parks, greenbelts, open space, wetlands, urban forest, farmlands and other City-managed and private lands

Action CR.2.

Carbon farm plans

Lead City Department	Key Partners	Time Frame Planning: 0-4 years	Time Frame Implementation: 16 years	Staff Support Required	Municipal Capital Cost	GHG Reduction	Climate Hazards Addressed	Co-Benefits
CD: Open Space	YCRCD							

GHG Reduction Potential: 2030: 1,450 MT CO₂e/yr 2040: 1,450 MT CO₂e/yr

Develop carbon farm plans for City-owned agricultural land and seek grant funding to implement recommended strategies for maximum carbon sequestration.

Related CAAP Actions:

CR.1 Carbon Removal and Sequestration

AD.2 Urban Forest

Funding and Resources

Initial Funding Needs	A carbon farm plan costs between \$10,000 and \$12,000. To create plans for agricultural land around golf course, and land along South Fork of Putah Creek, the City would need approximately \$30,000 to \$40,000. A carbon farm plan for Howat/Clayton ranch has already been completed.
Biennial Funding Needs	Unknown. Depends on the recommended strategies. For example, converting Clayton Ranch to a wetland would cost several million dollars.
Staffing Needs	Additional staffing would be required to initiate, implement, and manage a carbon farm plan program within the Open Space Program. Current staff are at capacity, and the additional burden of initiating the carbon farm plan process includes coordination with outside agencies, identifying funding opportunities and applying for funding, and implementing and managing the resulting plans.
Funding Opportunities	<ul style="list-style-type: none"> • Agricultural lease revenue • Grant funds • Possibly Measure O funds (open space parcel tax), however funds will only be used to implement the actions described on agricultural land that was purchased with open space monies. • Possibly open space development impact fees • Green Proving Ground Program (US General Services Administration, US Department of Energy) • Healthy Soils Program (California Department of Food and Agriculture)

Implementation Information

Project Lead (and Staff)	Open Space Program Manager
External Partners	Tenant farmers, Yolo County Resource Conservation District; Additional potential partners: UC Davis, Yolo County Land Fill, such as composting operations, Yolo Land Trust
Priority Level/General Timeframe	Low/Long-term
Immediate Next Steps	<ol style="list-style-type: none"> 1. Evaluate potential CDR projects on City managed land and plan pilot projects. 2. Install hedgerows at Howat Ranch. 3. Apply compost at Howat Ranch. 4. Complete carbon farm plans for ag land around golf course and ag land along South Fork of Putah Creek. 5. Confirm all tenant farms are using reduced tillage practices. Implement easy and cost-effective actions such as applying compost and low tillage first, or implement as pilot projects with data analysis included. 6. Consider identifying and describing source or practices that lead to the 1450 MT/yr figure. (This is a recommendation from NRC). For example, if only hedgerows are planted, this would be smaller. If intensive tree cropping is done, it could be larger (over 6000 MT/yr in one study of growing trees with reclaimed wastewater.) This number may depend on projects that aren't yet decided.

Implementation Milestones	<ol style="list-style-type: none"> 1. Completed Carbon Farm Plans for leased agricultural properties will be controlled by the City's Open Space Program 2. Complete evaluation of potential CDR projects on City managed land and plan for/implement pilot projects. The City of Davis leases approximately 1,200 acres of farmland to local producers who produce a variety of commodity crops on that land. The United States Department of Agriculture's Natural Resources Conservation Division describes carbon farm planning as a process aimed at identifying opportunities to conserve and sequester carbon within soil and crop plants on a defined agricultural property. While the climate mitigation seems small when compared to other sectors, as noted in the draft Climate Action and Adaptation Plan (CAAP), carbon farm planning offers not only the opportunity to reduce carbon emissions, but also an opportunity to collaborate, demonstrate climate leadership, and educate the public. 3. Install hedgerows on agricultural land around golf course: 5 years. 4. Install hedgerows on Los Rios agricultural land: 5 years. 5. Install hedgerows on ag land south of South Fork Preserve (if possible, since this agricultural land does not have water): 5 years. 6. Apply compost to agricultural land around golf course and along the South Fork of Putah Creek: 5 years 7. Study opportunity to complete an evaluation report of CDR opportunities and specific plans for Howat/Clayton ranch. Consider all opportunities (forestry, wetlands, etc.) in the planning (or complete in CR.2). Study opportunity for ranch be used for a large-scale community photovoltaic project (which would have to be evaluated for conflict with carbon farming). Other factors that might influence future plans include the use of reclaimed wastewater and availability of landfill-generated compost: 5 years 8. Study opportunity to convert Clayton Ranch to a wetland: 8-10 years
Initiation Timeline	Within 3 months of CAAP approval
Completion Timeline	Over next 10 years

Performance Tracking Metrics

Output Metrics – What was achieved by this action?	
Implementation Metrics and Sources	<p>Potential metrics could include:</p> <ul style="list-style-type: none"> • Linear feet of hedgerow installed • Number of acres where compost is being applied • Number of acres where cover crops are planted • Number of acres converted to wetland • Number of grant applications submitted • Percent of City-owned agricultural land for which a carbon farm plan has been developed
Outcome Metrics – What is the effect of those achievements?	
Implementation Metrics and Sources	<ul style="list-style-type: none"> • MT CO₂e sequestered • Dollars of grant funding awarded (Outcome of grant applications)

	<ul style="list-style-type: none"> • Percent of City-owned (or Open Space Program-controlled, if control of the properties is not realigned) agricultural land for which a carbon farm plan has been developed • Estimated carbon sequestration (MTCO₂e per year) from carbon farm plan program • Area of open space lands managed to maximize CDR is another potential outcome.
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Outreach and Education Opportunities

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| <ul style="list-style-type: none"> • Outreach to tenant farmers to encourage them to implement farming techniques recommended in carbon farm plan, such as reduced tillage, compost application and cover crop planting, if feasible. • Public education on farming techniques through Center for Land-Based Learning, UC Davis or other sources. • Use these applications of carbon removal (CDR) technologies on city-owned land as a model for other regional farming. • Carbon farm planning offers not only the opportunity to reduce carbon emissions, but also an opportunity to collaborate, demonstrate climate leadership, and educate the public. |
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Additional appendices are available in a separate document and linked on the City's webpage.

Appendix B

CAAP Three-Year Grant Strategy

Appendix C

Climate Science Memo and Vulnerability Assessment

Appendix D

GHG Inventory and Forecasts

Appendix E

Action Selection and Prioritization Process

Appendix F

GHG Target Options Memo



CAPAY CANYON RANCH

*Julia B. Levine,
Davis Poet Laureate*

At the end of summer, an orchard
and its drought-sharpened leaves,

its dark pockets of cool.
Inside one, blue flash of a jay—

in another, birdsong
of a white-crowned sparrow.

At the end of the orchard,
a valley rimmed in foothills,

and a river of wind
carrying the dark scull of crows

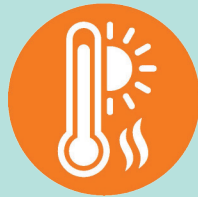
out of blistered scrub oak,
the scorched canyons.

We sit on the stone-hard dirt,
our hair flying.

You reach for my hand,
and we stay like that, silent

a long time, the hot wind pouring
over. At the end of wind,

this world. What is left to say,
except Hurry, save it.



DAVIS 2020-2040
**Climate
Action &
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