Climate **Action & Adaptation** Plan

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city of
Columbia
Office of Sustainability

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Letter from the City Manager

It is my great pleasure to present the first 5 year update of the Climate Action and Adaptation Plan to the Columbia community, City Council, and my City colleagues. The creation of the Climate Action and Adaptation Plan was a great achievement. Since adoption in 2019 City staff and community partners have worked hard to achieve the goals, strategies and actions in the plan. This update fulfills one of those actions by starting the City on a 5-year cadence for updating the plan. The approach used for this update reflects best practices from peer cities with decades of experience implementing and updating their climate plans.

This update does not change Columbia's commitment to greenhouse gas reduction goals set forth in the original plan. The work was focused on honing the actions in the plan. Actions were organized into immediate priorities for the next 5 years, ongoing actions that have become part of the City's operations, long-term actions past the 5 year horizon, and a list of completed and consolidated actions from the original plan. This update reflects the City and its partners' commitment to focusing on implementation and moving towards the plan's goals.

The days of having to convince people of the importance of climate action are passing and many climate actions are becoming business as usual. This change reflects not only an increase in awareness but also changing economics. Increases in renewable energy production, growth in the availability of electric vehicles, and the need to address the impact of hotter summers are a few of the trends that have aided our current implementation efforts. More and more addressing climate action represents the best value for Columbia. Lower lifetime costs, more reliable infrastructure, a healthier community, and a better future.

I'd like to express my sincere thanks and gratitude to everyone who helped craft this update by offering their time and expertise.

Sincerely,

De'Carlon Seewood
City Manager

Acknowledgments

We would like to express gratitude to those who shared their time and expertise in contributing to the development of this updated plan.

Columbia Community

All community members who got involved with the CAAP update process!

Columbia City Council

- Barbara Buffaloe, Mayor
- Valerie Carroll, Ward 1
- Vera Elwood, Ward 2
- Jacque Sample, Ward 3
- Nick Foster, Ward 4
- Donald Waterman, Ward 5
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Local Community Groups & Organizations

- Air & Water Solutions
- AmeriCorps
- Arise Dwellings
- Boone County
- Boone County Stormwater
- Boone Electric Cooperative
- Columbia Audubon Society
- Columbia Center for Urban Agriculture (CCUA)
- Columbia Public Schools
- Columbia Tenants Union
- Daniel Regional Boone Library
- Food Bank for Central & Northeast Missouri
- Habitat for Humanity
- Job Point
- Local developers, ground maintenance, home health providers, & engineers
- Local Motion
- Mid-MO Sierra Club
- Mid-Missouri Solid Waste District
- Missouri Conservation Corps
- Missouri Department of Transportation (MoDOT)
- Missouri Green Banc
- MU Healthcare
- Mizzou
- National Renewable Energy Laboratory (NREL)
- Numerous Columbia Neighborhood Associations
- Regional Economic Development Inc. (REDI)
- Regulatory Assistance Project
- Renew Missouri
- Source Summit
- University of Missouri

Consulting Team

Cascadia Consulting Group

Executive Summary

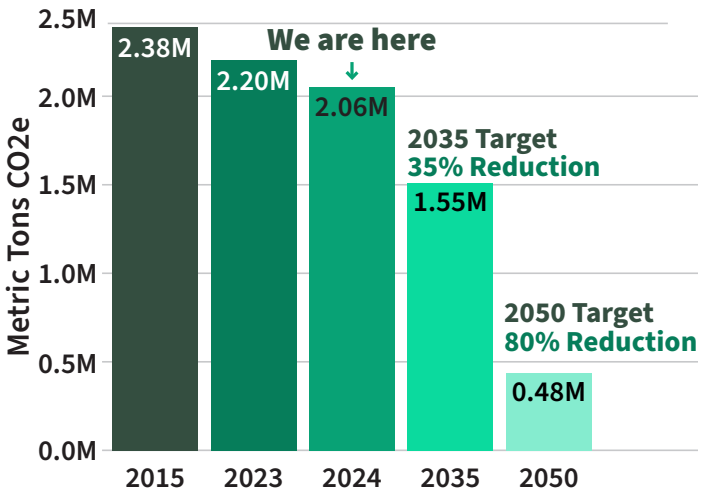
Overview

Columbia's **updated Climate Action and Adaptation Plan (CAAP)** builds on the foundation of the 2019 CAAP, reflecting progress to date, updated science, and community input while maintaining the plan's original priorities. Rather than starting from scratch, the 2025-2026 update refines and prioritizes existing actions to reduce greenhouse gas emissions and strengthen resilience to climate impacts, such as extreme heat and flooding. The plan focuses on a streamlined set of near-term, achievable actions for the next five years, while recognizing ongoing and long-term efforts already underway.

The update was developed through a collaborative, engagement-driven process that included City staff, community members, local organizations, and other stakeholders. Community and stakeholder input helped shape CAAP actions, priorities, and implementation strategies around clean energy, transportation, equity, affordability, natural resources, and health. This updated CAAP positions Columbia to continue making meaningful progress toward a more **resilient, equitable, and low-emissions future**.

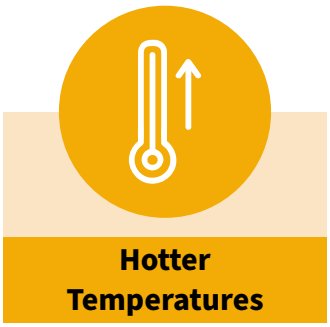
Columbia's Climate Context

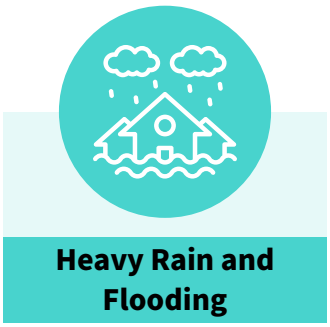
Columbia tracks progress on climate action through annual greenhouse gas (GHG) inventories for both community-wide emissions and municipal operations. Since 2015, the City has made steady progress, with 2024 community-wide emissions down 14% overall. The updated CAAP reaffirms the GHG reduction targets established in 2019: **reducing community-wide emissions 35% by 2035, 80% by 2050, and achieving carbon neutrality by 2060**, with municipal operations reaching a 50% reduction by 2035 and net-zero by 2050. The plan prioritizes near-term, achievable actions across sectors to keep Columbia on track toward these long-term goals.



***Part of the 2024 transportation emissions were estimated due to lack of timely data**

Climate change is already impacting Columbia. **Rising temperatures, heavier rainfall, worsening flooding, poorer air quality, and longer vector-borne disease seasons** are affecting health, infrastructure, water systems, and natural areas. These impacts are not felt equally—children, older adults, low-income households, and communities of color face higher risks, along with increasing threats to housing, transportation, utilities, parks, and trails. CAAP actions aim to **reduce risk, protect critical assets, and prepare the community for a changing climate**.





Goals and Actions

The original CAAP included approximately 160 actions across all sectors; this update narrows that focus to impactful and achievable priorities for the next five years. Actions from the original CAAP were reviewed with City staff and community stakeholders and categorized as near-term, long-term, ongoing, or removed, resulting in **33 priority actions** that will guide implementation over the next 5 years.

SECTORS, GOALS, AND PRIORITY ACTIONS

Sector	Goals and Priority Actions
Energy	**Goals:** – Increase local renewable energy generation and procure renewable electricity – Maintain reliability of local energy supply and local distribution **Actions:** Municipal building solar
Housing, Building, and Development	**Goal:** Reduce housing, building-, and development-related energy consumption and improve resiliency **Actions:** Energy efficiency retrofits, Community Cost Share Fund, residential energy performance rating program, commercial building water/energy tracking, City building energy performance & benchmarking, 500-year floodplain policy evaluation
Transportation	**Goals:** – Reduce travel by car – Reduce GHG emissions from vehicles **Actions:** Complete Streets policy, transportation funding, bus service improvements, pedestrian infrastructure expansion, infill and connected neighborhoods, residential density, parking requirements, electric vehicle roadmap, EV charging expansion

Sector	Goals and Priority Actions
 Waste	**Goals:** – Reduce waste generation – Increase diversion – Improve waste system management **Actions:** Waste program rebuild, waste communications strategy
 Health, Safety, and Wellbeing	**Goals:** – Prepare the community, public safety and health services for anticipated climate change impacts – Reduce emissions associated with the food system **Actions:** Funding for expanded utility emergency assistance, bus shelter extreme heat relief, traffic health impact assessment, neighborhood-focused resilience
 Natural Resources	**Goals:** – Increase climate resilience and carbon sequestration potential of public and private lands – Reduce per capita water usage – Reduce negative impacts from stormwater runoff and flooding **Actions:** Natural Areas Management Plan, landscape connectivity strategy, tree preservation requirements, native plants, water conservation and green infrastructure, sustainable construction, flood risk assessment, stream buffer requirements
 Implementation	**Goals:** – Establish climate action as a priority for the City Council and the community – Establish CAAP goals as priorities in the activities of the City of Columbia as an organization – Strengthen City capacity to support community climate action **Actions:** Climate assessment requirement, project and budget integration, community celebration events

Implementation of the CAAP will rely on continued collaboration among City staff and community partners, and progress will continue to be tracked through annual greenhouse gas inventories, performance metrics, and public reporting to City Council.

Introduction

Columbia's **updated Climate Action and Adaptation Plan (CAAP)** builds on the strong foundation established in the 2019 CAAP and reflects the progress, lessons learned, and changing conditions since its adoption. The community has already taken meaningful steps to reduce emissions, strengthen resilience, and integrate climate priorities across the city. Rather than starting over, this plan advances that work with updated science, new input from community members and stakeholders, and a renewed focus on actions that are near-term, feasible, and impactful.

Climate change continues to pose risks to Columbia's people, infrastructure, and natural systems through extreme heat, severe storms, and worsening air quality. By preparing for these impacts while continuing to reduce community-wide greenhouse gas (GHG) emissions, the City aims to protect community wellbeing, align with broader emissions reduction efforts, and support long-term resilience.

This updated plan has the same core purposes as the 2019 CAAP:

1. **Strengthen resilience** of Columbia's built and natural environments and support residents in preparing for climate impacts.
2. **Accelerate greenhouse gas emission reductions** through targeted, achievable actions across all sectors.

The plan reflects insights from recent progress, community engagement, City staff, and partner organizations. It focuses on a streamlined set of actions to prioritize in the next five years, while identifying other actions as completed, ongoing, or long-term. Columbia's progress to date has been driven by strong collaboration across City departments and partnerships with residents and businesses; continuing these relationships is essential to successful implementation and to ensuring the benefits of climate action are shared across the community.

Building on Progress

The City of Columbia has undertaken significant efforts to address climate change through its Climate Action and Adaptation Plan, adopted on June 17, 2019, with Resolution 89-19A. The original CAAP established ambitious goals for reducing community-wide GHG emissions: **35% by 2035, 80% by 2050, and 100% by 2060 (carbon neutrality)**. For municipal operations, the City aims for a 50% GHG emission reduction by 2035 and 100% by 2050. The CAAP also aims to prepare the community for both sudden and gradual climate-fueled changes.

Since adoption of the 2019 CAAP, Columbia has made steady progress toward integrating climate considerations into City operations and community-wide planning. Key achievements and progress include:

- **Expanded renewable energy supply,** including repowered wind contracts, a local 10-MW solar facility, expanded generation of electricity from landfill gas, the launch of a community solar program, and rapid growth in customer-owned solar, with installed capacity increasing more than fourfold since 2017.
- **Strong energy efficiency performance,** with utility programs avoiding thousands of metric tons of GHG emissions annually and driving significant customer investment in efficiency upgrades.
- **Adoption of a City fleet electrification policy** and the addition of electric buses and vehicles to the City's fleet.
- **New and planned electric vehicle (EV) charging infrastructure** at City facilities and public locations.
- **Benchmarking and high-performance municipal facilities,** including full energy tracking for all eligible City buildings and standout projects such as the City's largest on-site solar installation paired with ground-source heating and cooling, demonstrating leadership in efficiency and renewable energy.
- **Supporting renters and equity-focused programs,** including pilot energy efficiency assessments for rental properties and extreme heat resilience education and resources.
- **Investments in natural resources and heat resilience,** including tree planting, native landscaping, green infrastructure, and tools that help residents locate cooling resources during extreme heat.
- **Strong governance and accountability,** reflected in annual CAAP reporting and active coordination among City staff, advisory bodies, and community partners.

This update builds on Columbia's progress by refining actions to focus on near-term priorities that will continue to advance a resilient, equitable, and low-emissions Columbia.

Benefits of Climate Action

Taking action on climate change delivers clear, local benefits for the Columbia community, both right now and into the future.

Financial Savings

Many climate actions reduce long-term costs at the individual and community level; for example, reducing building energy use, avoiding damages from extreme weather events, and reducing emergency response and recovery expenses can help Columbia avoid higher costs in the future.

Health and Quality of Life Improvements

Actions that reduce greenhouse gas emissions often lead to cleaner air, safer streets, and more opportunities for active outdoor activities like walking and biking. These benefits support public health and overall quality of life for Columbia residents.

Protection and Resilience

Climate action helps Columbia prepare for more extreme heat, heavier rainfall, and other climate-related hazards while building long-term resilience. Proactive planning reduces risks to residents, neighborhoods, infrastructure, and natural resources, supporting a safer and more prepared community as the climate continues to change.

Community Beautification

Climate action can enhance Columbia's natural beauty through tree planting and preservation, green infrastructure, and native landscaping. These investments provide shade, manage stormwater and reduce flooding, support local ecosystems, and make public spaces more inviting for all.

Plan Development Process

This updated Climate Action and Adaptation Plan is the result of a collaborative process with City staff, community members, and local partners. Rather than starting from scratch, this update retains the same overall sector and goal structure of the original CAAP, along with many of the original CAAP actions. The plan development process involved updating Columbia's climate vulnerability assessment, evaluating CAAP progress to date, and working with City and community stakeholders to prioritize the most feasible and impactful actions for the next five years. The plan update intentionally reflects the current political and economic context, emphasizing actions that are realistic, implementable, and responsive to constraints and opportunities.

The project team held interviews and focus groups with City staff, local organizations, community leaders, and industry experts to vet and refine actions for this plan update. Specifically, this involved:

- **Two City departmental interview sessions, with six total attendees** representing the City's Clean Energy Team, Finance, Public Works, Neighborhood Services, Public Health and Human Services, and Diversity, Equity, & Inclusion teams.
- **Three external stakeholder interview sessions, with nine total attendees** representing the following organizations and sectors: Local Motion, Source Summit, Arise Dwellings, Daniel Boone Library, Habitat for Humanity, home health providers, GoCOMO staff, local engineering firms, and local developers.
- **Four focus group sessions, with 45 total attendees** representing the following organizations and sectors: Air & Water Solutions, AmeriCorps, Arise Dwellings, Boone County, Boone Electric Cooperative, City of Columbia, Columbia Audubon Society, Columbia Center for Urban Agriculture (CCUA), Columbia Public Schools, Columbia Tenants Union, Daniel Boone Library, Food Bank for Central & Northeast Missouri, Habitat for Humanity, Job Point, Local Motion, Mid-MO Sierra Club, Missouri Conservation Corps, Missouri Department of Transportation (MoDOT), Missouri Green Banc, MU Healthcare, Mizzou, National Renewable Energy Laboratory (NREL), Regional Economic Development Inc. (REDI), Regulatory Assistance Project, Renew Missouri, Solid Waste District, Source Summit, University of Missouri, multiple neighborhood associations, developers, local landscaping businesses, home health providers, and local engineering firms.
- **One implementation planning session,** with **28 total attendees** representing 21 different organizations and agencies.

The City also provided residents with an overview of the update, shared early findings, and gathered input on priorities through a community webinar. Throughout the update process, staff insights, public feedback, and stakeholder perspectives shaped action selection and refinement. This coordinated approach helps ensure the updated CAAP reflects the community's needs, builds on work already underway, and advances a shared vision for a resilient and sustainable Columbia.

The CAAP Update Process

Community & Stakeholder Engagement

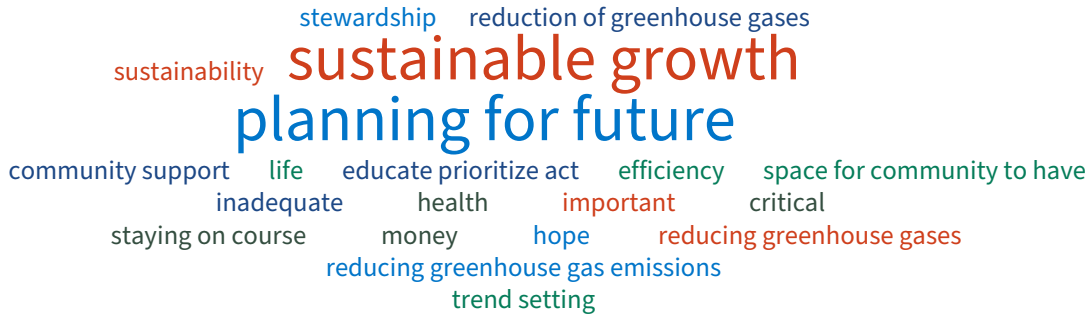
As shown in the graphic above, community and stakeholder engagement was a priority throughout the CAAP update process. Engagement approaches, proposed actions, and plan elements were reviewed and refined through monthly CAAP Executive Team meetings, interviews and focus groups, an implementation planning session, and other engagement activities, with the goal of collecting feedback from a diverse range of Columbia community members and stakeholders.

WHAT WE HEARD

Input received through community and stakeholder engagement was integrated in the updated CAAP. Summaries and select highlights from the engagement process are presented below.

Community workshop priorities:

In a word or short phrase, what does climate action and resiliency in Columbia mean to you?



What do you want this CAAP update to focus on?

- Community solar expansion and renewable energy
- Strong public transit and sustainable transportation options to reduce reliance on vehicles
- Electric vehicle expansion
- Preservation of green space, natural resources, and green infrastructure
- Investment, involvement, and education across all sectors

Priorities and recommendations for CAAP actions:

- **Feasibility and near-term impact:** Prioritize realistic, achievable actions that align with current capacity, funding, and implementation constraints.
- **Early planning and predictable funding:** Integrate climate considerations into capital planning early on, with clearer long-term funding, maintenance, and staffing strategies.
- **Affordability and equity:** Address energy burden, extreme heat, transportation access, and housing affordability, especially for renters, low-income households, and other vulnerable populations.
- **Incentives over mandates:** Prioritize incentive-based, voluntary, and supportive approaches over requirements, particularly in rental housing and small business contexts.
- **Coordination and transparency:** Improve cross-department alignment, designated points of contact, data sharing, and public tracking of progress.
- **Climate integration with land use, housing, transportation, and health:** Emphasize infill, density, active transportation, and walkable neighborhoods as climate and quality-of-life solutions.
- **Extreme heat:** Expand cooling access, shade, trees, transit comfort, utility assistance, and decentralized community-based solutions.
- **Community engagement:** Meet people where they are, use trusted partners, and connect actions to lived experience and health outcomes.

Action Refinement

The original CAAP included roughly 160 actions spanning all sectors, reflecting a comprehensive approach to climate mitigation and resilience. For this update, the project team focused on identifying the most impactful and achievable priorities for the next five years. Each action was reviewed and categorized into one of four groups:

- **5-year plan** for near-term priority actions
- **Ongoing** for actions already in progress
- **Long-term** for important initiatives to revisit in future CAAP updates or actions that will be more cost-effective or technologically feasible later on (e.g., focusing on building energy efficiency in the near-term and renewable energy in the longer-term)
- **Remove** for actions that were completed, determined to be infeasible, or—most often—consolidated with other efforts or actions

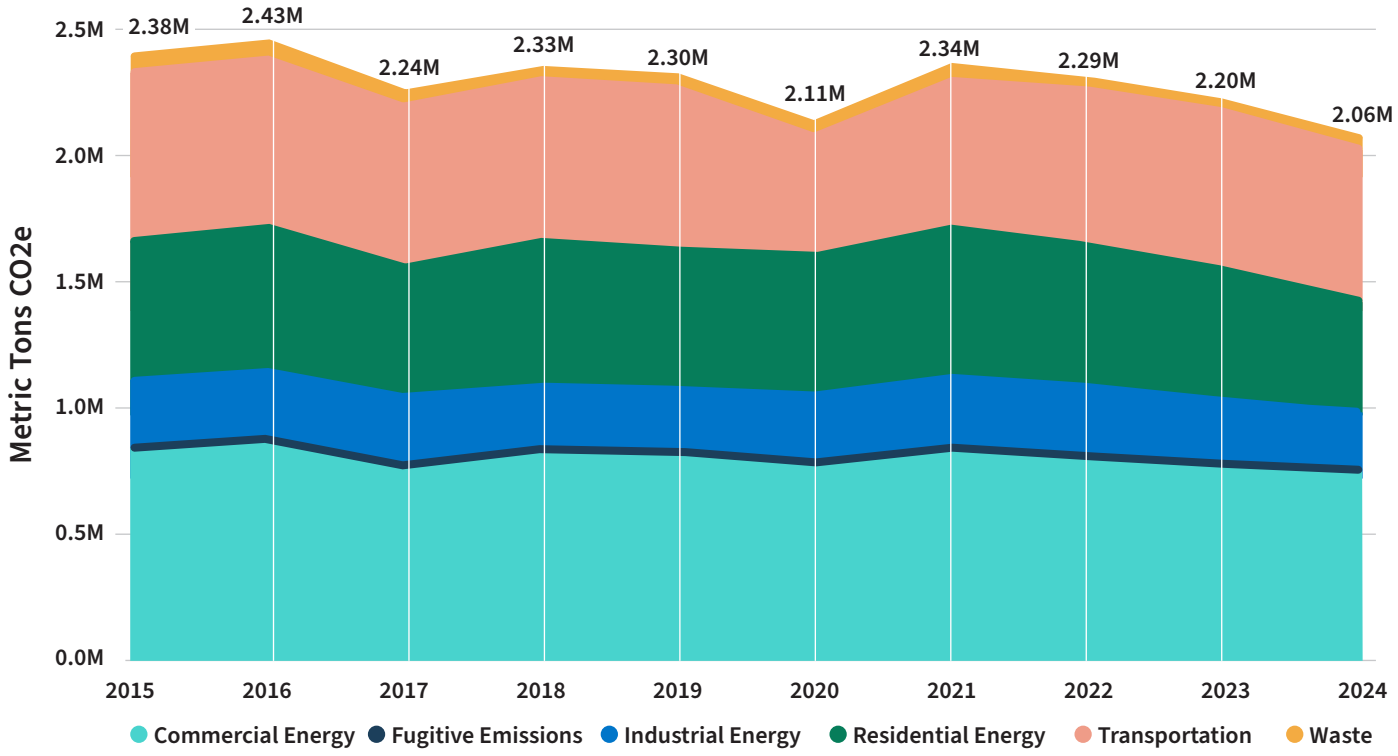
Refinement was guided by multiple rounds of input from City staff and community stakeholders, including through Executive Team meetings, focus groups, and interviews. Through this iterative process, the team prioritized **33 actions** for the next five years while ensuring the broader CAAP remains a living document that captures ongoing and long-term initiatives. See the ***Appendices*** section to reference the original CAAP action list, including long-term actions.

Columbia's Climate Context

Greenhouse Gas Emissions

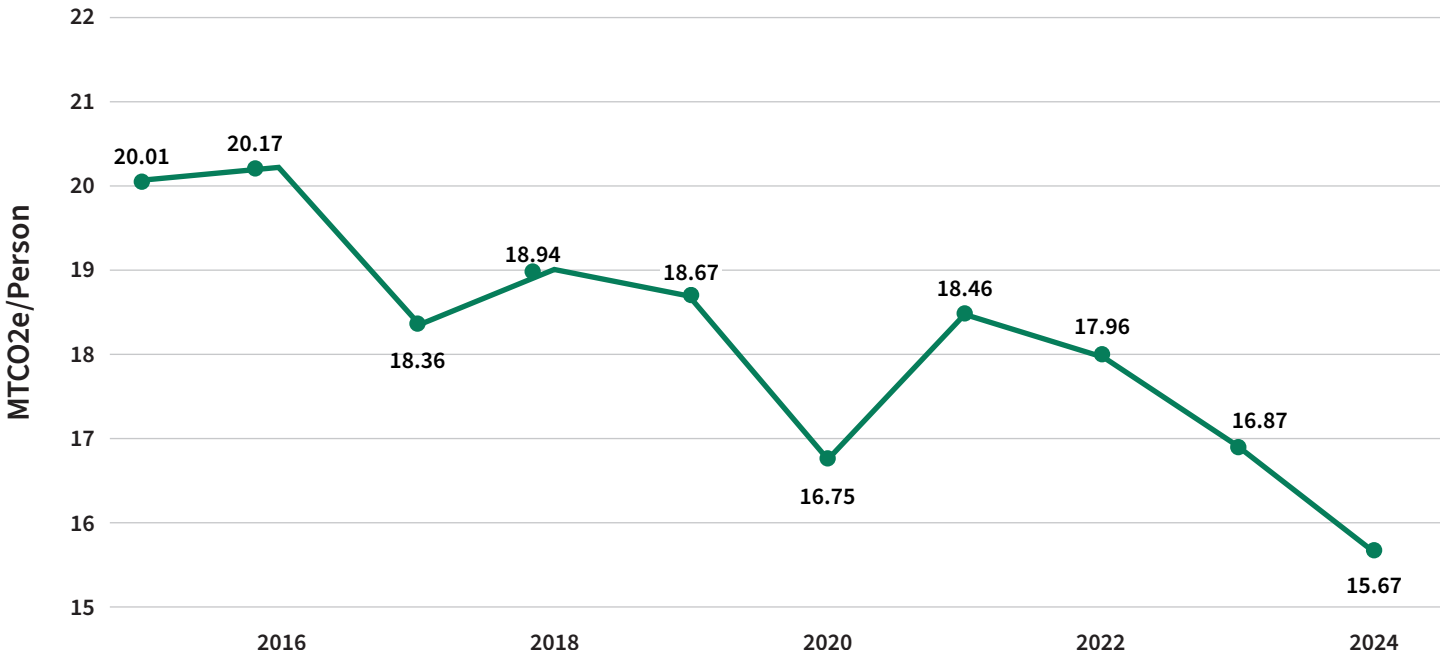
Powering our homes and businesses, driving around town, and throwing away waste are some of our daily activities that produce climate-changing greenhouse gas emissions. To better understand our local emissions and track progress over time, the City conducts annual greenhouse gas inventories to measure both community-wide and municipal operations emissions. Since 2015, Columbia has shown progress in reducing its GHG emissions—2024 community-wide emissions were 14% lower than the 2015 baseline (Figure 1).

Figure 1. Community-wide GHG emissions trends.



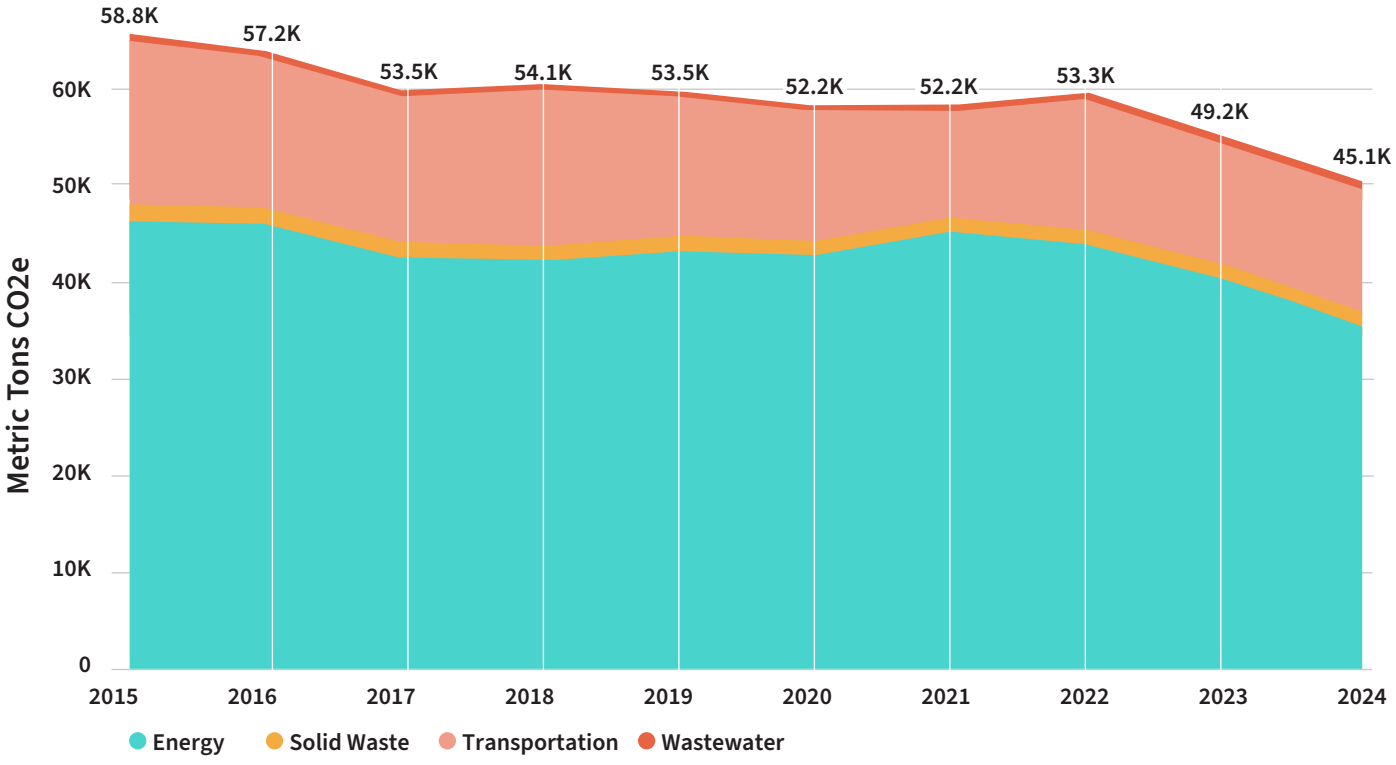
Per capita community-wide emissions have also steadily declined, decreasing 22% between 2015 and 2024 (Figure 2).

Figure 2. Community-wide per capita GHG emissions trends.



Municipal operations GHG emissions have consistently trended downward, achieving an overall 23% reduction from the 2015 baseline in 2024 (Figure 3).

Figure 3. Municipal operations GHG emissions trends.



GHG REDUCTION TARGETS

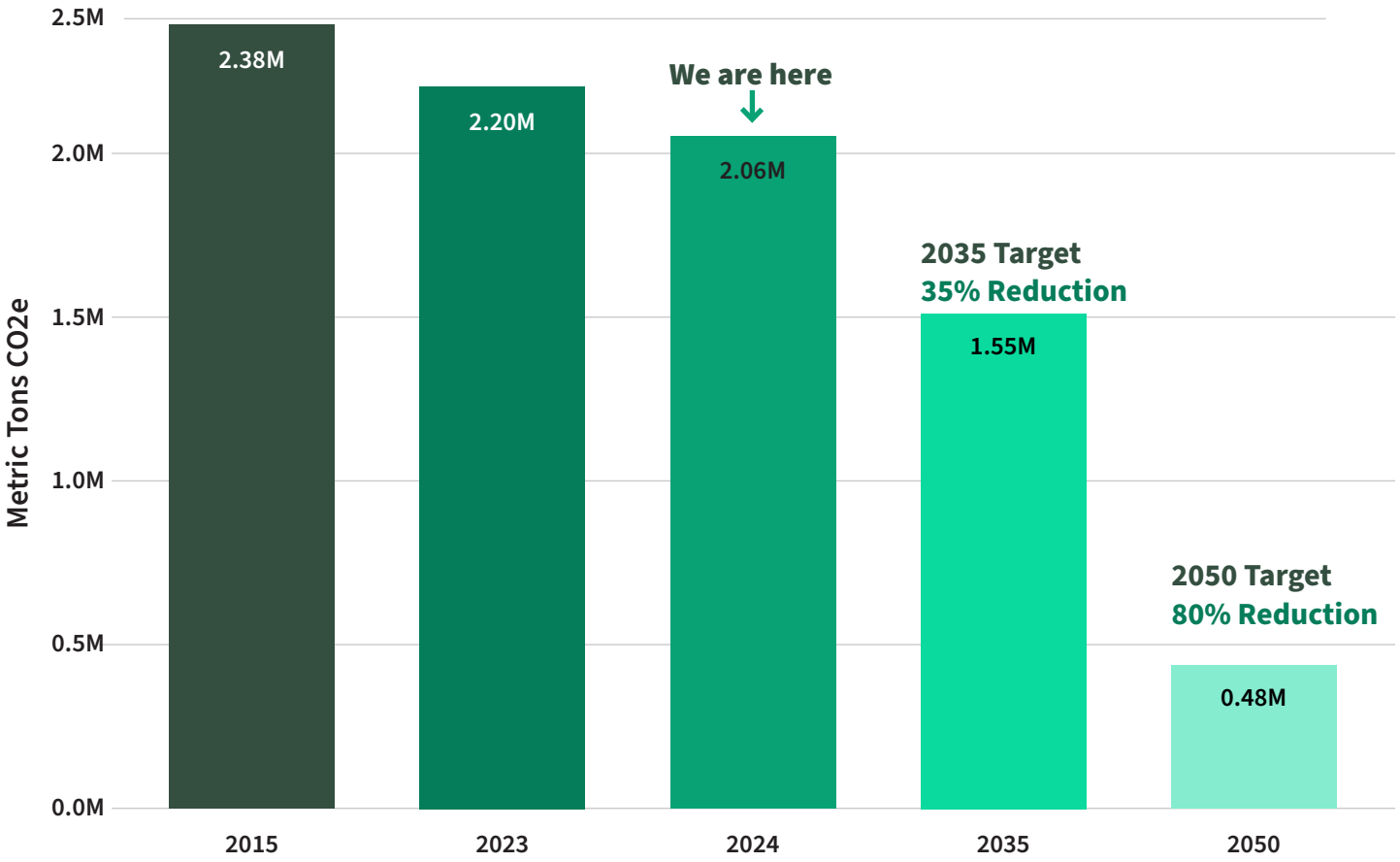
In the development of the 2019 CAAP, City staff, Task Force members, and the community set Columbia's GHG reduction goals.

Using the 2015 GHG inventory as a baseline year, the GHG reduction targets are:

- **Community-wide** GHG emissions: 35% below baseline by 2035, 80% by 2050, and 100% by 2060.
- **Municipal operations** GHG emissions: 50% below baseline by 2035 and 100% by 2050.

This CAAP reaffirms Columbia's commitment to these targets and prioritizes actions across sectors that make progress toward these goals. Figure 4 below shows previous GHG emissions alongside target future emissions in 2035 and 2050.

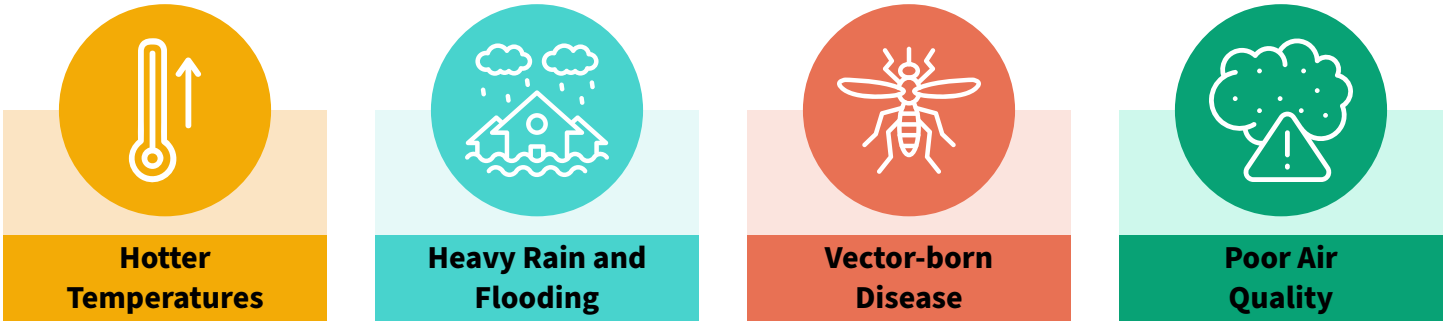
Figure 4. Community-wide GHG emissions trends with future targets.



*Part of the 2024 transportation emissions were estimated due to lack of timely data

Climate Impacts and Vulnerability

Columbia is already experiencing the impacts of climate change, which affect health, buildings and infrastructure, water quantity and quality, and natural areas. The City completed its first climate risk assessment in 2019 as part of the original CAAP; in 2025, the City updated its risk assessment as part of this CAAP update.



The climate risk assessment included the development of 1) four public-facing fact sheets that aim to communicate existing and future climate risks to Columbia's residents and 2) an interactive mapping tool that overlays heat and flood risk data with City assets and assigns risk level to those assets. The online tool aims to support City decision-making and prioritization around adaptation projects and investments, with the goal of reducing the City and community's vulnerability to key climate hazards.

OVERVIEW OF CLIMATE HAZARDS

Columbia, like much of Missouri and the Midwest, is already experiencing climate change.

- **Hotter temperatures**: Days over 95 degrees F are expected to jump from around 15 in 2016 to 50 by 2100, increasing risk for heat-related health problems and cooling costs.[1]
- **Heavy rain and flooding:** In the last 50 years, average rainfall on the wettest days of the year has risen 35%, and the highest water levels in rivers has increased 20%,[2] making flooding more frequent and dangerous for people, housing, and infrastructure.
- **Vector-borne illnesses:** Due to a warmer, wetter climate, the Midwest is experiencing longer tick and mosquito seasons, which have led to more cases of West Nile, Lyme disease, and tick-borne disease.[3]
- **Poor air quality:** Air quality is worsened by warmer temperatures, which increase smog, lengthen pollen season, and exacerbate mold and dust, harming people with asthma and allergies.

1 Frankson, R., K.E. Kunkel, S.M. Champion, and B.C. Stewart, 2022: Missouri State Climate Summary 2022. NOAA Technical Report NESDIS 150-MO. NOAA/NESDIS, Silver Spring, MD, 5 pp.
2 United States Environmental Protection Agency, 2016: What Climate Change Means for Missouri.
3 Missouri Department of Health and Senior Services, n.d. Weather and Climate

HEALTH, SAFETY, AND WELLBEING

Climate impacts like heat, flooding, and poor air quality affect everyone, but some people—due to age, income, race, or job—are hit harder. These events also increase demand on hospitals and emergency services, which can be disrupted by extreme weather.

Columbia's Vulnerable Populations

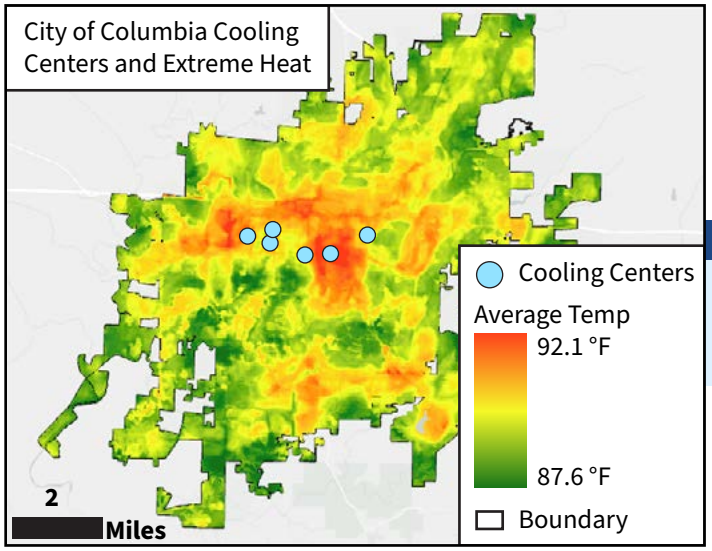
This table shows the populations most vulnerable to climate impacts that are also most prevalent in Columbia. There are many other groups that are vulnerable to the impacts of climate change, including outdoor workers, people with mental health conditions, student athletes (e.g., football players), or unhoused people.

Vulnerable populations and their percentages in Columbia[4]

Population	Climate Risks[5]
Children and Older Adults (30%)	Children and older adults are both more susceptible to complications from heat illness, poor air quality and vector-borne disease due to their age.
Low-income households (18%)[6]	Low-income households have fewer resources to prepare for and recover from climate events like heat waves, floods, and poor air quality.
Racial minorities (25%)	Racial minorities, including the Black community (12% of Columbia's population), are more likely to live in neighborhoods where they are more exposed to climate impacts on top of existing environmental pollution.

Urban Heat Islands

Urban Heat Islands and Heat Relief Locations in Columbia, Missouri[7]



The map shows that some of Columbia's hottest neighborhoods have public spaces where people can cool down when it is hot, but there are large parts of Columbia's hottest area with no public heat relief spaces.

NEXT STEPS

Lower the health risk of extreme heat by adding cooling strategies to the CAAP, especially for high-risk groups.

The figure to the left shows urban heat islands and establishments that offer heat relief. Heat relief establishments include cooling centers, swimming pools, splash pads, and water fountains, and are places that people can go to cool down during heat events if they don't have air conditioning in their houses.

4 U.S. Census Bureau. (2023). American Community Survey 5-year estimates. Retrieved from Census Reporter Profile page for Columbia, MO

5 American Public Health Association, 2026: Climate Changes Health: Vulnerable Populations https://www.apha.org/topics-and-issues/climate-health-and-equity/vulnerable-populations

6 The US Department of Housing and Urban Development defines low-income households as those below 80% of the Area Median Income.

7 City of Columbia, Missouri. (2025). Show me the Heat.

BUILT ENVIRONMENT AND WATER

Columbia's built environment—which includes roads and transportation, housing and buildings, and sewer and stormwater infrastructure—faces risks from extreme heat, heavy precipitation, and flooding.

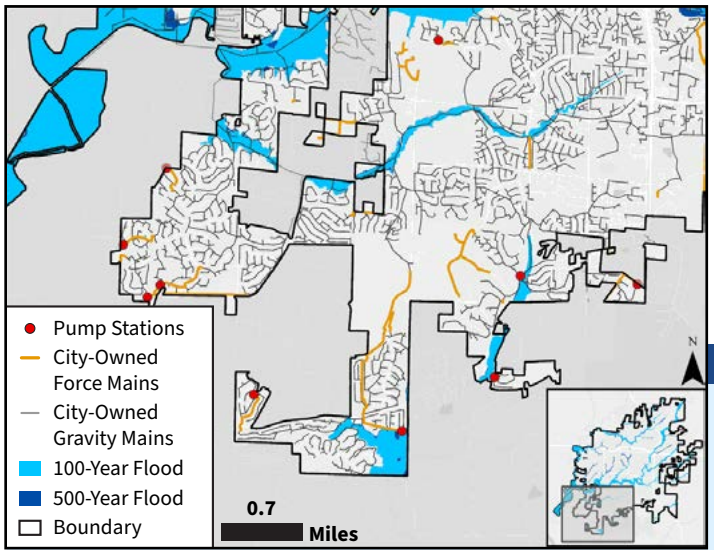
Buildings and Housing

In hotter temperatures, cooling buildings uses more energy, and home energy costs continue to rise, especially during peak times for heating and cooling.[8]

Buildings in floodplains are at risk for flooding as rain events become more intense. 8.2% of homes face flood risk in the next 30 years[9]. Flooding can also lead to mold and mildew and worsen indoor air quality.

Water Infrastructure

Sewer Mains and Pump Stations and Flood Risk in Columbia, Missouri



More frequent, heavier rainfall will stress stormwater infrastructure, which can increase flood risk. Pump stations and sewer mains in or near floodplains can be overwhelmed by heavy rains, which may worsen flooding of buildings and roads and cause service disruptions. Pump station failure may cause sewer systems to back up into rivers, buildings, and streets.[10]

NEXT STEPS

Help protect homes and services from flooding with CAAP actions that reduce flood risk, and reduce heat impacts through energy and cooling solutions.

The figure above shows stormwater pump stations and sewer mains in floodplains in southwest Columbia.[11]

Transportation

Columbia's roads can flood during heavy rainfall events. Flooding already affects some roads (like Providence Road at Mick Deaver, Creasy Springs Road at the Bear Creek Trail, West Gillespie Bridge Road, and Chapel Hill Road and Twins Lake City Park) and can trap cars. Columbia's public transit system does not publicly list alternate routes in case of flooding, which may make it difficult for non-drivers to get around during flooding events or heavy rainstorms.

While high temperatures do not affect bus services directly, all Go COMO routes pass through Columbia's center, which is hotter than surrounding areas due to the urban heat island effect. This can make waiting at bus stops without shelters uncomfortable for riders.

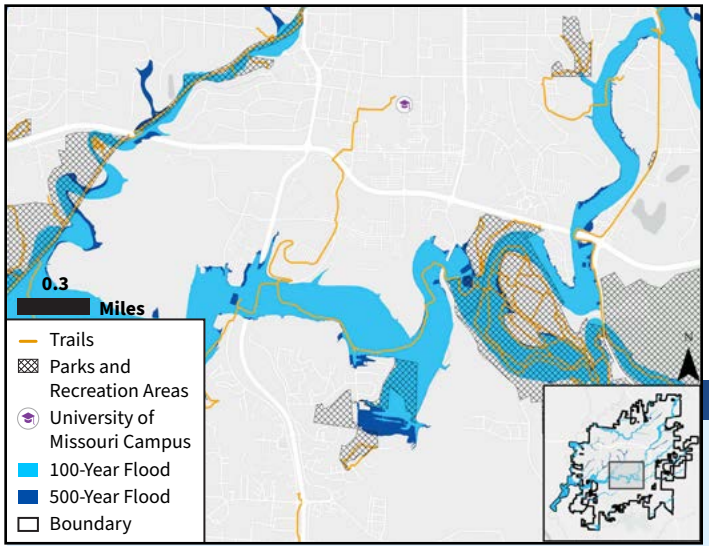
8 Consumers Council of Missouri. (2024). Ameren and Spire Rate Increases Exceed Recent Inflation and Wages.
9 First Street (2025). Columbia Flooding Risk.
10 Environmental Protection Agency. (2023). Combined Sewer Overflows (CSOs).
11 Map data is from the City of Columbia, MO. (2025). Floodplain data is from FEMA. (2025).

PARKS, TRAILS, AND NATURAL AREAS

Columbia's parks, natural areas, and trails are at risk due to rising temperatures and heavy rainfall. Extreme heat and flooding can reduce the usability of parks and trails and also strain the health of plants and wildlife in those spaces.

Parks and Trails

Parks and Trails and Flood Risk in Columbia, Missouri



Parks and trails can flood during heavy rains, preventing the public from using them for periods of time. Demand for parks may increase during warm days or heatwaves, as shady parks can be a refuge for people. Trails are used for transportation, so flooded, unusable trails can disrupt residents' ability to get from one place to another. Additionally, recreationists using trails may be at increased risk for heat related illnesses.

NEXT STEPS

Help parks and trails recover faster from flooding by including flood reduction and recovery actions in the CAAP.

Parks and Trails in Floodplains.[12] The zoomed-in area shows trails and parks that sit in the 100-year flood plain and are at risk of flooding during heavy rainfall.

Trees and Natural Areas

More heavy rainfall and hotter temperatures may change the composition of trees and plants in natural areas. Flooding can saturate soils, which can harm trees and plants through diseases or root rot. Natural areas have also experienced erosion and soil compaction due to flooding near creeks and wetlands, which can affect habitat health. Heat may increase tree damage from pests, especially in combined with drier weather. The overall tree canopy is expected to stay consistent; however, the composition of tree species may change due to heat and drought.

12 Parks and trails data from City of Columbia, MO (2025); floodplain data from FEMA (2025). Map by Cascadia (2025).

Goals and Actions

The following pages outline the **goals and actions** the City will advance over the next five years in key sectors to reduce GHG emissions and strengthen community resilience to climate change. The actions cover a range of approaches, including policies, research and data efforts, funding, infrastructure, and community education. More action implementation details can be found in the ***Implementation Matrix*** section.

CAAP Sector & Goal Overview

Energy

- Increase local renewable energy generation and procure renewable electricity.
- Maintain reliability of local energy supply and local distribution.
- Housing, Building, and Development
- Reduce housing-, building-, and development-related energy consumption and improve resiliency.

Transportation

- Reduce travel by car.
- Reduce GHG emissions from vehicles.

Waste

- *Reduce waste generation.*
- Increase diversion.
- Improve waste system management.

Health, Safety, and Wellbeing

- Prepare the community, public safety and health services for anticipated climate change impacts.
- *Reduce emissions associated with the food system.*

Natural Resources

- Increase climate resilience and carbon sequestration potential of public and private lands.
- Reduce per capita water usage.
- Reduce negative impacts from stormwater runoff and flooding.

Implementation

- Establish climate action as a priority for the City Council and the community.
- Establish CAAP goals as priorities in the activities of the City of Columbia as an organization.
- Strengthen City capacity to support community climate action.

**Italicized, underlined goals are still represented in long-term CAAP actions but do not appear on the following pages with 5-year and ongoing actions.*

Equitable Implementation

To build a more resilient, safer, and healthier Columbia, we use two primary frameworks to ensure our programs reach everyone effectively.

1. TARGETED UNIVERSALISM

This approach sets a **universal goal** for the entire community but uses **targeted strategies** to help different groups get there.

- **The Goal:** Imagine community wants an ice cream shop in *every* neighborhood.
- **The Reality:** Neighborhoods start from different places. Some already have multiple shops, others have none. Many neighborhoods face barriers like zoning issues, lack of space, or high costs.
- **The Strategy:** Instead of creating a 'one-size-fits all' plan, we work together to identify the specific obstacles each neighborhood faces. By addressing these unique challenges, we ensure every resident eventually reaches that same universal goal of neighborhood access.

2. CO-CREATION

Resilience isn't something "done" to a community—it's something we *build together*. **Co-creation** means involving the people most impacted by a problem in the design of the solution.

We treat **lived experience** as a form of expertise. When neighbors, business owners, and City departments work together, the resulting solutions are more effective, equitable, and sustainable.

Focusing Where It Matters Most

We apply these tools by focusing on neighborhoods with the highest resilience needs. Using data on tree canopy coverage, summer temperatures, and access to cooling centers, we prioritize resources for the areas that need them most to ensure a resilient future for all of Columbia.

KEY CONSIDERATIONS

With all CAAP goals and actions, the City aims to implement actions in a manner that promotes equity and mitigates structural racism and historic inequality. Equitable implementation involves proactively mitigating unintended consequences and disproportionate impacts and dispersing the benefits of climate actions equitably–serving and benefiting disadvantaged communities first. On the following pages, we've included brief call-out boxes that highlight some key considerations for equitable implementation for each CAAP sector.

Energy

Energy use in buildings is the largest source of GHG emissions in Columbia, driven primarily by building energy demand and the energy fuel mix. Reducing emissions in this sector is essential to meeting community climate goals and improving long-term affordability and reliability. Key strategies include expanding renewable energy, reducing energy use through efficiency and demand management, and aligning utility planning with climate, equity, and resilience priorities.

Columbia has already made meaningful progress in this sector through Columbia Water & Light, increasing the share of electricity from renewable sources, investing in wind, solar, and landfill gas projects, and expanding energy efficiency and demand-side management programs that reduce both emissions and costs. Related initiatives that CAAP actions can synergize with include the advanced metering infrastructure (AMI) replacement program and Truman Solar project. CAAP actions can also build upon existing programs for community solar, demand-side management, energy efficiency, and electrification.

At the time of this CAAP update, the City of Columbia and its Electric Utility are reviewing the City's existing renewable energy standard ordinance (RES), including goals and evaluation metrics. Because the actions below are directly related to this ordinance and to support the alignment of community and CAAP priorities, these actions will be evaluated and updated in conjunction with the RES review.

- **Original CAAP action E-1.3.1:** Remove 3% rate cap to allow for increased investment by Water & Light in renewable energy resources.
- **Original CAAP action E-1.3.2:** Codify through ordinance Columbia Water & Light's responsibility to meet 100% renewable energy generation or purchase by 2035, including parameters for the use of Renewable Energy Credits (RECs) and equity and cost impacts.

EQUITABLE IMPLEMENTATION CONSIDERATIONS

- Prioritize critical sites for solar development and high-need residents for resilience projects.
- Ensure low-income households benefit from energy programs and infrastructure upgrades.

ENERGY ACTIONS

5-Year Actions:

Goal: Increase local renewable energy generation and procure renewable electricity.

- **Municipal building solar:** Install solar panels on all City buildings and sites, where feasible.

Ongoing Actions:

Goal: Increase local renewable energy generation and procure renewable electricity.

- **Water & Light planning integration:** Establish a process to have CAAP priorities considered during W&L long range resource planning processes.
- **Areas of focus may include:** energy efficiency, demand response, distributed generation and energy storage programming, rate-payer affordability and benefits to income-eligible households; virtual net metering; developing an approach to assess the value and potential of customer-owned solar; and enhancing energy infrastructure.

Goal: Maintain reliability of local energy supply and local distribution.

- **Advanced Metering Infrastructure (AMI):** Continue to install meters, including advanced meters, that financially incentivize and reward lower electricity use at peak hours.

Housing, Building, and Development

Homes, buildings, and new development shape both Columbia's GHG emissions and residents' exposure to climate risks such as extreme heat and flooding. Energy use in buildings is a major source of community emissions, while building design, location, and infrastructure decisions influence long-term affordability, comfort, and resilience. Reducing energy demand, improving efficiency, and guiding development away from high-risk areas are critical to lowering emissions and protecting people and property.

EQUITABLE IMPLEMENTATION CONSIDERATIONS

- Prioritize low-income households, renters, higher-need schools, and small/local businesses.
- Keep programs simple and accessible, and provide tech support and financial incentives to support compliance with new requirements.

Columbia continues to make progress in this area, including full benchmarking of eligible municipal buildings, adoption of high-performance facility design, and early efforts to improve energy efficiency in rental housing, such as the Rental Energy Efficiency Project and the Rental Home Energy Score Pilot. The actions in this plan build on that foundation by expanding efficiency programs to more buildings, strengthening support for renters and affordable housing, and refining development policies to better account for future climate risks.

HOUSING, BUILDING, AND DEVELOPMENT ACTIONS

5-Year Actions:

Goal: Reduce housing-, building-, and development-related energy consumption and improve resiliency.

- **Energy efficiency retrofits:** Evaluate the addition of new affordable energy efficiency incentive options for residents in addition to current utility programs.
- **Community Cost Share Fund:** Create and grow a Community Cost Share Fund for tax-advantaged donations that support renter-focused energy efficiency education and upgrades, paired with expanded flexible, non-utility financing options and targeted support to build CBO capacity to deliver these programs.
- **Residential energy performance rating program:** Continue to expand the City's current energy performance rating/labeling program to rental properties (e.g., upon rental license renewal).
- **Commercial building water/energy tracking:** Partner with building owners and managers to provide assistance to large commercial buildings in tracking energy and water usage for the purpose of identifying and supporting cost-effective resource conservation opportunities.
- **City building energy performance & benchmarking:** Set an updated goal for how efficiently City buildings use energy, and implement City benchmarking policy to inform improvements.
- **500-year floodplain policy evaluation:** Where policy exists to limit development in the 100-year floodplain or require infrastructure elevation, conduct a study to examine the costs and benefits of amending the policy to also include 500-year floodplain, including an evaluation of the type, extent, and impacts of development currently exempt from stormwater management requirements.

Ongoing Actions:

Goal: Reduce housing-, building-, and development-related energy consumption and improve resiliency.

- **School district energy efficiency:** Work with school districts to support energy efficiency programs, geothermal energy and solar energy installation.
- **Building Energy Conservation Codes:** Continue to evaluate and adopt the latest International Energy Conservation Codes for municipal, commercial and residential buildings.
- **Refrigerant use & disposal:** Continue to support training, certification, and education opportunities for professionals involved in the disposal and use of refrigerants.

Transportation

Transportation is a major source of community-wide GHG emissions in Columbia, driven largely by high rates of driving alone and dependence on personal vehicles. Reducing emissions in this sector requires cutting vehicle miles traveled by expanding strategies that make non-car travel safer and more convenient, along with transitioning to cleaner vehicles.

EQUITABLE IMPLEMENTATION CONSIDERATIONS

- Pair infill and density incentives with strong anti-displacement measures (e.g., affordability requirements, tenant protections).
- Ensure equitable deployment of pedestrian and bike safety improvements.

Columbia has begun shifting its transportation system through fleet electrification, investments in electric vehicles and charging infrastructure, and early planning to support cleaner travel options. The actions in this plan build on that momentum by prioritizing Complete Streets, improved transit service, walkable and transit-oriented development, and expanded electric vehicle charging. CAAP actions can also build on or align with current initiatives, including Bike and Pedestrian Master Plans, Vision Zero, EV incentive programs, and the Comprehensive Plan Update.

TRANSPORTATION ACTIONS

5-Year Actions:

Goal: Reduce travel by car.

- **Complete Streets policy:** Implement the Complete Streets policy to enhance safe and accessible travel for all modes, including building a connected bikeway network with protected bike lanes on higher-speed streets and bike boulevards on lower-speed streets.
- **Transportation funding:** Identify and align transportation funding opportunities with strategies that improve safety, expand travel options, and support increased use of transit, walking, biking, and carpooling.
- **Bus service improvements:** Improve efficiency, convenience and reliability of bus service and infrastructure (e.g., increase frequency, shorten wait times, construct bus stop shelters).
- **Pedestrian infrastructure expansion:** Accelerate construction of sidewalks, crosswalks, and other walking infrastructure in high-need areas, closing connectivity gaps from the Sidewalk Master Plan and adding universal-design features (e.g., pedestrian and audible signals) to ensure accessible crossings for all.
- **Infill and connected neighborhoods:** Increase infill, mixed-use, and transit-oriented development (e.g., through alternative code compliance, fee waivers, density bonuses, investment prioritization, development impact fees, tax benefits), to support walkable, connected neighborhoods. Prioritize connectivity near schools, transit, and new development, align with long-term mobility investments identified in the Comprehensive Plan, and preserve and enhance affordable housing to prevent displacement of vulnerable populations.
- **Residential density:** Explore initiatives to support and encourage increased residential density.
- **Parking requirements:** Expand existing shared parking policies and reduce or eliminate minimum off-street parking requirements, limit new surface parking, and allow developers to trade reduced parking for community benefits or sustainability amenities.

Goal: Reduce GHG emissions from vehicles.

- **Electric vehicle roadmap:** Create an electric vehicle roadmap to increase the number of electric charging stations in public parking areas (e.g., schools, parks, libraries, City-owned parking garages, near City Hall) and in commercial and high-density residential areas.
- **EV charging expansion:** Continue and consider expanding support for home and multifamily EV charging by increasing residential rebates, streamlining permits, and adding solutions for homes without garages, such as curbside or shared charging.

Waste

Managing **waste** and increasing diversion are important for reducing emissions and conserving resources, even though waste represents a small share of Columbia's overall community-wide GHG emissions. Effective waste systems—including recycling, composting, and household hazardous waste disposal—keep materials out of landfills, reduce methane emissions, and support a circular local economy.

Columbia has already achieved significant reductions in solid waste emissions compared to 2015 and has successfully diverted materials from the landfill through collection events and other programs. Columbia is rebuilding and rethinking its recycling infrastructure following the April 2025 tornado that destroyed the Material Recovery Facility, with interim recycling adjustments underway and plans advancing for a new, resilient facility.

WASTE ACTIONS

5-Year Actions:

Goal: Improve waste system management.

- **Waste program rebuild:** Rebuild the tornado-impacted waste program to maximize diversion, cut contamination, and create a durable and high-value system. Research potential for a glass recycling program and consider creating a permanent, staffed service center for household hazardous waste processing or other strategically important uses.

Goal: Increase diversion.

- **Waste communications strategy:** Develop a communications strategy to educate and inform the public of available recycling and composting programs such as household hazardous waste and yard waste.

Ongoing Actions:

Goal: Improve waste system management.

- **Waste composition study:** Conduct a comprehensive waste composition study every five years.

EQUITABLE IMPLEMENTATION CONSIDERATIONS

- Ensure waste diversion services are available and convenient for multi-family housing.

Health, Safety and Wellbeing

Climate change poses growing risks to **health, safety, and wellbeing** in Columbia, including extreme heat, poor air quality, flooding, and other severe weather. These impacts can strain public health systems, disrupt daily life, and threaten community wellbeing. Health, safety, and wellbeing actions focus on preparing residents, public health services, and emergency systems to respond to climate-related risks such as heat stress, air pollution, food insecurity, and mental health impacts.

EQUITABLE IMPLEMENTATION CONSIDERATIONS

- Avoid increasing cost burdens; coordinate with landlords and ensure upgrade costs are not passed on to tenants.
- Align with Climate Vulnerability Assessment findings to prioritize high-ridership bus routes and high-heat bus stops for bus shelter heat relief.
- Use health equity indicators to target communities with higher climate-related health risks.

Climate impacts are not experienced equally. Low-income households may have fewer resources to manage higher energy bills or recover from property damage, while children, older adults, pregnant people, outdoor workers, people with disabilities, and those without stable housing face heightened health and other risks during extreme conditions. By investing in health, safety, and wellbeing actions, Columbia can protect public health while ensuring climate action supports equity, safety, and affordability.

CAAP actions build on and align with existing City initiatives, including the Community Health Improvement Plan (CHIP), Boone County OEM emergency planning, existing utility assistance programs (CASH/HELP), and Show Me the Relief.

HEALTH, SAFETY, AND WELLBEING ACTIONS

5-Year Actions:

Goal: Prepare the community, public safety and health services for anticipated climate change impacts.

- **Funding for expanded utility emergency assistance:** Identify and secure additional funding for increased utility assistance for low-income residents, including emergency support and resources for energy efficiency projects, such as weatherization. Coordinate with the Health Department to expand existing assistance programs.
- **Bus shelter extreme heat relief:** Develop a plan to improve bus stop shelters' ability to provide relief from extreme heat (e.g., reflective materials, cooling fans).
- **Traffic health impact assessment:** Conduct a health impact assessment for areas that may have unsafe levels of air pollution from vehicle traffic, and use data to explore options for mitigating impact on residents.
- **Neighborhood-focused resilience:** Partner with community organizations, residents, and commercial entities and develop hyperlocal, neighborhood-focused resilience efforts (e.g., CoMo Canopy, resilience hubs, Show Me the Relief).

Ongoing Actions:

Goal: Prepare the community, public safety and health services for anticipated climate change impacts.

- **Community health integration:** Continue coordinating with community health improvement teams to incorporate climate change and CAAP goals into the Community Health Improvement Plan and Health Impact Assessment.
- **Emergency and evacuation plans:** Continue to review and effectively communicate emergency and evacuation plans on a regular basis to update for climate change forecasted data, paying particular attention to flooding, extended heat waves and tornadoes. Include food security in disaster planning, in coordination with public health staff.

Natural Resources

Protecting and enhancing **natural resources** helps Columbia increase climate resilience, store carbon, reduce heat impacts, and manage stormwater. This sector focuses on preserving and expanding green spaces, improving tree canopy, restoring native habitats, promoting water conservation, and integrating green infrastructure into public and private lands. Healthy ecosystems also support biodiversity and provide community benefits like cooler neighborhoods, improved air and water quality, and flood mitigation.

EQUITABLE IMPLEMENTATION CONSIDERATIONS

- Prioritize corridors that maximize climate and access co-benefits in underserved areas.
- Avoid pricing residents out of affordable housing; assess cost impacts early.
- Use Climate Vulnerability Assessment findings to identify priority neighborhoods and critical assets and integrate results into capital planning decisions.

Columbia has made progress through initiatives such as converting turf grass to native prairie vegetation, expanding urban tree canopy in heat-vulnerable neighborhoods, and engaging residents with the Show Me the Heat and Show Me the Relief programs to identify and respond to local extreme heat impacts. Partnerships with organizations like the U.S. Fish and Wildlife Service, Missouri Department of Conservation, Missouri Conservation Corps, Forest ReLeaf, and the Arbor Day Foundation support tree planting, habitat restoration, and ongoing maintenance of natural resources.

NATURAL RESOURCES ACTIONS

5-Year Actions:

Goal: Increase climate resilience and carbon sequestration potential of public and private lands.

- **Natural Areas Management Plan:** Develop an interdepartmental Natural Areas Management Plan/Framework to coordinate management of publicly-owned natural areas to enhance and maintain biodiversity, carbon storage, and climate resilience.
- **Landscape connectivity strategy:** Create a citywide a landscape connectivity strategy to:
  - Establish and effectively manage native-habitat corridors along trails and utility easement areas to restore and maintain landscape connectivity
  - Support assessments about purchase and preservation of greenspace in and surrounding the city
  - Evaluate opportunities for larger greenspace buffers
  - Develop a plan for funding corridor management
- **Tree preservation requirements:** Update current tree preservation requirements to include protection of tree root systems and large legacy trees during construction and for new development, including an option (e.g. fee in lieu of preservation, tree fund) for cases where tree preservation is not feasible or practical.
- **Native plants:** Prioritize the use of native plants in landscaping at City-owned properties and provide signs or other education materials to convey the benefits of native plant landscaping.

Goal: Reduce per capita water usage.

- **Water conservation and green infrastructure:** Evaluate (and create, if determined to be cost-effective) a utility services program that supports water conservation and green infrastructure measures (e.g., grey water infrastructure, drought-resistant landscaping, rain gardens) on properties smaller than one acre.

Goal: Reduce negative impacts from stormwater runoff and flooding.

- **Sustainable construction:** Adopt standards and incentives for using green infrastructure and recycled materials in new construction.
- **Flood risk assessment:** Support a countywide flood risk assessment using existing data (e.g., FEMA maps) and updated analyses of historical and projected precipitation to identify high-risk areas and critical infrastructure vulnerable to flooding, to inform mitigation, property acquisition, and resilience planning.
- **Stream buffer requirements:** Revise stream buffer requirements and related development standards to improve flood storage and reduce erosion risk. Include options—such as fee-in-lieu or mitigation banking—that allow or require developers to fund buffer restoration or greenspace expansion in priority areas where these investments provide greater community benefit than the cost of on-site improvements.

Implementation

Successful climate action **implementation** requires embedding CAAP goals into the City's planning, budgeting, and decision-making processes while building capacity to support community-wide action. This sector focuses on ensuring that mitigation, adaptation, and equity considerations are integrated across City operations, policies, and projects, with clear tracking of progress, performance, and funding. It also supports public engagement and education to strengthen community understanding and participation in climate initiatives.

Columbia has made strides in this area, including the Climate and Environment Commission's role in advising City Council, monitoring CAAP implementation, and engaging the community. The City consistently receives an A- score from the Carbon Disclosure Project, demonstrating strong performance in mitigation and adaptation.

For more details on implementation, see the ***Plan Delivery and Accountability*** section below.

IMPLEMENTATION ACTIONS

5-Year Actions:

Goal: Establish CAAP goals as priorities in the activities of the City of Columbia as an organization.

- **Climate assessment requirement:** Develop a process for requiring mitigation, adaptation and climate-equity impact assessments for all new policies and projects that meet threshold criteria, such as cost burden, vulnerability or increase to net emissions.
- **Project and budget integration:** At the direction of the City Manager, integrate annual CAAP goals into the budget review process and include a summary in the proposed budget of existing and proposed mitigation and adaptation projects.

Goal: Strengthen City capacity to support community climate action.

- **Community celebration events:** Host a community event every two years to celebrate the annual progress report on the implementation of the CAAP.

Ongoing Actions:

Goal: Establish climate action as a priority for the City Council and the community.

- **Budget priority identification:** Use recommendations in the annual report to identify budgetary priorities that support implementation of the CAAP.
- **Legislation identification:** Identify State and Federal legislative issues that support the goals of the CAAP and enable its implementation.
- **Annual progress report:** Prepare an annual CAAP progress report and recommendations for City Council.
- **City Council update:** Present annual CAAP progress report policy and budget priorities to City Council for acceptance.
- **Equitable implementation:** Identify opportunities and barriers to equitable implementation of CAAP strategies.

Goal: Establish CAAP goals as priorities in the activities of the City of Columbia as an organization.

- **CAAP Team:** Continue to convene the CAAP Action Group with representatives from across departments tasked with short- and medium-range planning of CAAP implementation activities.
- **Division head meetings:** Hold biannual meetings with division and department heads to highlight progress, plans and challenges related to projects with climate impacts.
- **City plan integration:** Integrate CAAP with other City plans, like the Urban Forest Master Plan, and support other City plans to further CAAP goals.

Ongoing Actions:

Goal: Strengthen City capacity to support community climate action.

- **Educational materials:** Design and promote CAAP educational materials to ensure full engagement of community members by using methods that are accessible and relevant to all.
- **Data management and reporting:** Maintain a data management and reporting system for key performance indicators of activities related to CAAP goals.
- **Annual staff report:** Create and distribute an annual municipal adaptation and GHG emissions report to staff to be used in assessment of current and proposed activities.
- **Annual GHG emissions inventories:** Conduct annual GHG emissions inventories, including identification of improved processes for quantifying net carbon sequestration and solid waste emissions.
- **Metric alignment:** Continue to align performance measurements of CAAP actions with existing planning metrics.
- **Equity metrics:** Develop and incorporate equity metrics in the evaluation of CAAP activities. This evaluation will be used as a criterion for the CAAP Action Group, Community Climate Commission and budget team during review of program cost, viability and success.
- **Educational program alignment:** Align existing City educational and engagement programs with CAAP goals and programs. Provide additional support to education and outreach for the CAAP and its individual actions.
- **Funding options:** Develop specific funding options for CAAP priorities.
- **Cost savings tracking:** Track cost savings associated with CAAP action across the City organization and allocate for use in supporting further mitigation and adaptation actions.
- **Staffing requirements evaluation:** Evaluate staffing requirements to ensure successful CAAP implementation and allocate required resources.
- **Online progress dashboard:** Continue using online dashboard to report on the status of CAAP priority actions/KPIs (e.g., progress of actions that have been initiated, implementation schedule of other actions not yet started, community and municipal GHG emissions, equity impacts of actions implemented).

Plan Delivery and Accountability

Sustaining Community Support

Throughout the original and updated CAAP development process, **community and stakeholder input** has been essential to informing CAAP priorities. Moving forward, individual actions will be necessary to meet community-wide emission reduction targets. The City will continue to foster conversations on climate change and climate leadership through public engagement by partnering with existing community groups, neighborhoods, and business groups in climate action.

To formally maintain public participation in CAAP implementation, the City will continue partnering with the **Climate and Environment Commission, a citizen climate commission**. This commission advises City staff on the preparation of the annual CAAP progress report and recommendations to City Council, supports equitable implementation of CAAP actions, and educates and engages with the community on CAAP actions and priorities.

Additionally, continuing to strengthen the **capacity and knowledge of the CAAP Executive Team and City staff** will help maximize the speed and impact of CAAP implementation. Internal staff development can include workshops on climate change, support for strategy implementation, and development of CAAP planning metrics.

Monitoring and Evaluation

City staff will continue to conduct ongoing monitoring, evaluation, and reporting on CAAP progress. This section outlines a high-level plan for these activities. Key aspects of monitoring and evaluation include:

- **Conducting greenhouse gas inventories** and report results to City Council. GHG inventories inform progress towards meeting reduction targets and highlight areas that need additional action.
- **Continue refining performance metrics and tracking structure,** as needed, for monitoring progress within City departments. Monitoring key performance indicators (KPIs) helps track progress on individual CAAP actions.
- **Evaluating and reporting progress.** Reporting the status of CAAP implementation to City Council annually ensures consistent progress.
- **Adapting strategies and actions.** The results of the GHG monitoring and evaluation of actions using key performance indicators will be used to update the CAAP as necessary to meet CAAP goals.

WHAT WILL BE TRACKED?

Two primary elements of the CAAP will be monitored:

- **Action progress:** more qualitative descriptions of progress City is making toward implementation of actions in the plan.
- **Key performance indicators:** quantitative metrics that indicate progress towards higher-level goals and target outcomes of the plan.

Action and indicator progress will be monitored by City Staff and be available to the public in the CAAP Annual Report and on Comoclimateaction.org.

HOW OFTEN WILL THE CAAP BE UPDATED?

The CAAP will be reviewed for potential updates every five years.

Implementation Matrix

The implementation matrix organizes all **5-year plan and ongoing CAAP actions** with key details, including lead staff, partners, and key next steps and timing considerations, to guide coordinated and transparent implementation of the plan. Internally, the City also tracks key performance indicators (KPIs), related initiatives, and other implementation and equity considerations.

ENERGY

Action short name	Action description	Timeline	Lead(s)	Partner(s)	Key next steps & timing considerations
Municipal building solar	Install solar panels on all City buildings and sites, where feasible.	5-year plan	OS, FWAME	3rd Party, City Utilities, OS, ESCO, PW	– Review 2023/2024 Solar Suitability Analysis of City owned property. – Incorporate consideration of solar installation into ESCO projects and new facilities construction.
Water & Light planning integration	Establish a process to have CAAP priorities considered during W&L long range resource planning processes. Areas of focus may include: energy efficiency, demand response, distributed generation and energy storage programming, rate-payer affordability and benefits to income-eligible households; virtual net metering; developing an approach to assess the value and potential of customer-owned solar; and enhancing energy infrastructure.	Ongoing	City Utilities	WLAB, Council, CEC, OS	
Advanced Metering Infrastructure (AMI)	Continue to install meters, including advanced meters, that financially incentivize and reward lower electricity use at peak hours.	Ongoing	City Utilities		– Begin evaluating peak-pricing and demand management pilots for customers with AMI meters.

HOUSING, BUILDING, AND DEVELOPMENT

Action short name	Action description	Timeline	Lead(s)	Partner(s)	Key next steps & timing considerations
Energy efficiency retrofits	Evaluate for the addition of new affordable energy efficiency incentive options for residents in addition to current utility programs.	5-year plan	City Utilities, OS	MEEA, Consultants, Smart Energy Solutions, HBA, Architects, Builders, Design Firms	– Demand Side Management programs and incentives will be evaluated on a 3 year cycle moving forward. – Lead and Partners will need to begin evaluation of current programs for consideration in 2027.
Community Cost Share Fund	Create and grow a Community Cost Share Fund for tax-advantaged donations that support renter-focused energy efficiency education and upgrades, paired with expanded flexible, non-utility financing options and targeted support to build community-based organization (CBO) capacity to deliver these programs.	5-year plan	OS		– Convene stakeholders and establish common goals for the use of the fund. – Research potential fund structures that meet needs/goals – Identify a lead, based on the constraints identified during process (legal, capacity, etc.)
Residential energy performance rating program	Continue to expand the City's current energy performance rating/labeling program to rental properties (e.g., upon rental license renewal).	5-year plan	ONS	PHHS, OS, RE Professionals, property managers, appraisers, Student Housing, larger owners, utility services, tenants union	– Align expansion with additional funding to effectively promote the current home energy score for rental properties program.
Commercial building water/energy tracking	Partner with building owners and managers to provide assistance to large commercial buildings in tracking energy and water usage for the purpose of identifying and supporting cost-effective resource conservation opportunities.	5-year plan	City Utilities, OS	DOE, energy professionals, REDI, Chamber of Commerce, NRDC Sustainability Commercial Partners/ Champions, Columbia Mall	– Align timing with adoption of updated energy codes; reassess feasibility after codes are finalized. – Identify business owners and manager that could be potential participants.
City building energy performance & benchmarking	Set an updated goal for how efficiently City buildings use energy, and implement City benchmarking policy to inform improvements.	5-year plan	Public Works	City Utilities , ESCO, OS	– Finalize policy and process to meet energy use goals in City facilities.

Action short name	Action description	Timeline	Lead(s)	Partner(s)	Key next steps & timing considerations
500-year floodplain policy evaluation	Where policy exists to limit development in the 100-year floodplain or require infrastructure elevation, conduct a study to examine the costs and benefits of amending the policy to also include 500-year floodplain, including an evaluation of the type, extent, and impacts of development currently exempt from stormwater management requirements.	5-year plan	OS	Stormwater Utility, CD, GIS, OEM	– Engage with City GIS office to review existing data and need for further analysis.
School district energy efficiency	Work with school districts to support energy efficiency programs, geothermal energy and solar energy installation.	Ongoing	CPS	OS, City Utilities	– Build a relationship between CPS and City in regards to new construction and facilities management.
Building Energy Conservation Codes	Continue to evaluate and adopt the latest International Energy Conservation Codes for municipal, commercial and residential buildings.	Ongoing	CD	BCCC , CEC, City Utilities, OS, REDI	– Continue to engage and support Community Development process for updating building codes.
Refrigerant use & disposal	Continue to support training, certification, and education opportunities for professionals involved in the disposal and use of refrigerants.	Ongoing	Solid Waste	OS	

TRANSPORTATION

Action short name	Action description	Timeline	Lead(s)	Partner(s)	Key next steps & timing considerations
Complete Streets policy	Implement the Complete Streets policy to enhance safe and accessible travel for all modes, including building a connected bikeway network with protected bike lanes on higher-speed streets and bike boulevards on lower-speed streets.	5-year plan	Public Works	Business districts and associations, Local Motion, CD, Developers, Home Builders	– Review the impact of the updated Complete Streets Policy on current and future CIP road projects. – Review impact of the updated Complete Streets Policy on roads constructed by developers.
Transportation funding	Identify and align transportation funding opportunities with strategies that improve safety, expand travel options, and support increased use of transit, walking, biking, and carpooling.	5-year plan	Public Works	Local Motion, Bike Ped Commission, CATSO	– Explore community support for generating the funds needed to meaningfully expand transit services. – Ensure current transit operations are as efficient and cost effective as possible.
Bus service improvements	Improve efficiency, convenience and reliability of bus service and infrastructure (e.g., increase frequency, shorten wait times, construct bus stop shelters).	5-year plan	Public Works	MU, CPS, CoC	– Explore community support for generating the funds needed to meaningfully expand transit services. – Ensure current transit operations are as efficient and cost effective as possible.
Pedestrian infrastructure expansion	Accelerate construction of sidewalks, crosswalks, and other walking infrastructure in high-need areas, closing connectivity gaps from the Sidewalk Master Plan and adding universal-design features (e.g., pedestrian and audible signals) to ensure accessible crossings for all.	5-year plan	Public Works, P&R	Local Motion, Bike Ped Commission, CATSO, OS, MODoT, FHWA, NHTSA	– Identify and prioritize development of projects for bike/ped improvements and maintenance.

Action short name	Action description	Timeline	Lead(s)	Partner(s)	Key next steps & timing considerations
Infill and connected neighborhoods	Increase infill, mixed-use, and transit-oriented development (e.g., through alternative code compliance, fee waivers, density bonuses, investment prioritization, development impact fees, tax benefits), to support walkable, connected neighborhoods. Prioritize connectivity near schools, transit, and new development, align with long-term mobility investments identified in the Comprehensive Plan, and preserve and enhance affordable housing to prevent displacement of vulnerable populations.	5-year plan	CD	Local Motion, Developers, OS, REDI, Housing CHA,	– Encourage and evaluate code changes intended to encourage development of smaller lots. – Engage with the Comprehensive Plan update in 2026. – Engagement with developers to identify opportunities for improvement.
Residential density	Explore initiatives to support and encourage increased residential density.	5-year plan	CD	PZC, HBA	– Evaluate the utilization of current code changes that were adopted to encourage greater residential density.
Parking requirements	Expand existing shared parking policies and reduce or eliminate minimum off-street parking requirements, limit new surface parking, and allow developers to trade reduced parking for community benefits or sustainability amenities.	5-year plan	CD	PZC, PW	– Visualize amount of unused parking to help communicate issue of over-building parking to the public and developers. – Evaluate approaches for encourage the construction of fewer parking spaces.
Electric vehicle roadmap	Create an electric vehicle roadmap to increase the number of electric charging stations in public parking areas (e.g., schools, parks, libraries, City-owned parking garages, near City Hall) and in commercial and high-density residential areas.	5-year plan	OS	Parking Utility, Large employers, City Utilities	– Monitor and evaluate city-owned EV charger usage. – Develop EV charging electric rate for customers. – Identify opportunities for community hosted stations
EV charging expansion	Continue and consider expanding support for home and multifamily EV charging by increasing residential rebates, streamlining permits, and adding solutions for homes without garages, such as curbside or shared charging.	5-year plan	Clean Transportation Team	City Utilities, CD, OS	– Evaluate impact and uptake of the current charging incentive during the 3 year review and update of DSM programs.

WASTE

Action short name	Action description	Timeline	Lead(s)	Partner(s)	Key next steps & timing considerations
Waste program rebuild	Rebuild the tornado-impacted waste program to maximize diversion, cut contamination, and create a durable and high-value system. Research potential for a glass recycling program and consider creating a permanent, staffed service center for household hazardous waste processing or other strategically important uses.	5-year plan	Solid Waste	Private sector, MMSWMD,	– Support a business case analysis to determine best approach for rebuilding waste diversion programs. – Implement interim communications to clarify current recycling, yard waste, glass, and HHW options while long-term system decisions are underway (see “waste communications strategy”).
Waste communications strategy	Develop a communications strategy to educate and inform the public of available recycling and composting programs such as household hazardous waste and yard waste.	5-year plan	Solid Waste	ONS, OS, CCUA, TRP	– Create a working group with Solid Waste, ONS, OS, and Utility Communications. – Engage national partners for advice (TRP).
Waste composition study	Conduct a comprehensive waste composition study every five years.	Ongoing	Solid Waste	OS	– Determine material types to measure, hire a consultant or use staff to conduct waste composition study.

HEALTH, SAFETY AND WELLBEING

Action short name	Action description	Timeline	Lead(s)	Partner(s)	Key next steps & timing considerations
Neighborhood-focused resilience	Partner with community organizations, residents, and commercial entities and develop hyperlocal, neighborhood-focused resilience efforts (e.g., CoMo Canopy, resilience hubs, Show Me the Relief).	5-year plan	ONS, PHHS, OS	DBRL, OEM, PHHS, First Response Agencies, Non-profits, Columbia Tenants Union	– Continue to develop and expand the Como Canopy Program. – Pursue community event partnership with CPS.
Funding for expanded utility emergency assistance	Identify and secure additional funding for increased utility assistance for low-income residents, including emergency support and resources for energy efficiency projects, such as weatherization. Coordinate with the Health Department to expand existing assistance programs.	5-year plan	PHHS	OS, City Utilities, Finance, Community Relations, CMCA, Community Foundations 4 Eric Saffington	– Identify sources for additional funding. – Identify meaningful ways to connect assistance program recipients with DSM programing.
Bus shelter extreme heat relief	Develop a plan to improve bus stop shelters' ability to provide relief from extreme heat (e.g., reflective materials, cooling fans).	5-year plan	GoCOMO, OS	PHHS, Local Motion, Property Owners w/ bus shelters	– Start with low-cost options that could be managed by the current Show Me the Relief program. – Identify bus shelters on City property that would benefit the most of heat reduction strategies.
Traffic health impact assessment	Conduct a health impact assessment for areas that may have unsafe levels of air pollution from vehicle traffic, and use data to explore options for mitigating impact on residents.	5-year plan	PHHS	OS, Local Motion	– Identify an area to assess. – Request PHHS assistance in performing assessment.
Community health integration	Continue coordinating with community health improvement teams to incorporate climate change and CAAP goals into the Community Health Improvement Plan and Health Impact Assessment.	Ongoing	PHHS, OS	Health Care System, social services agencies	
Emergency and evacuation plans	Continue to review and effectively communicate emergency and evacuation plans on a regular basis to update for climate change forecasted data, paying particular attention to flooding, extended heat waves and tornadoes. Include food security in disaster planning, in coordination with public health staff.	Ongoing	OEM	Public Safety agencies, PHHS, health care system partners, and other traditional first responders, Red Cross	

NATURAL RESOURCES

Action short name	Action description	Timeline	Lead(s)	Partner(s)	Key next steps & timing considerations
Natural Areas Management Plan	"Develop an interdepartmental Natural Areas Management Plan/Framework to coordinate management of publicly-owned natural areas to enhance and maintain biodiversity, carbon storage, and climate resilience.	5-year plan	OS	P&R, Public Works, GIS, USFWS, MDC	– Collect data on current inventory of natural areas – Account for funds currently allocated to natural area management.
Landscape connectivity strategy	Create a citywide a landscape connectivity strategy to: – Establish and effectively manage native-habitat corridors along trails and utility easement areas to restore and maintain landscape connectivity – Support assessments about purchase and preservation of greenspace in and surrounding the city – Evaluate opportunities for larger greenspace buffers – Develop a plan for funding corridor management	5-year plan	OS	"Sustainability, National Wild Turkey Federation, Missouri Department of Conservation, Quail/ Pheasants Forever, all utilities, U.S. Fish and Wildlife Service	– Collect GIS data to assess existing habitat connectivity and identify the promising opportunities for corridor development.
Tree preservation requirements	Update current tree preservation requirements to include protection of tree root systems and large legacy trees during construction and for new development, including an option (e.g. fee in lieu of preservation, tree fund) for cases where tree preservation is not feasible or practical.	5-year plan	CD	MODOT, City Streets, Neighborhood Associations, Landscaping Companies, MCC, COMAC"	– Evaluate current tree preservation requirements, develop goals or metrics.
Native plants	Prioritize the use of native plants in landscaping at City-owned properties and provide signs or other education materials to convey the benefits of native plant landscaping.	5-year plan	OS	OS, Tree Board	– Utilize the City's Native Vegetation Management contract to convert additional public ROW to native vegetation. – Identify funding needed to convert identified mowed turf areas to native vegetation (payback for conversion takes 5-7 years).

Action short name	Action description	Timeline	Lead(s)	Partner(s)	Key next steps & timing considerations
Water conservation and green infrastructure	Evaluate (and create, if determined to be cost-effective) a utility services program that supports water conservation and green infrastructure measures (e.g., grey water infrastructure, drought-resistant landscaping, rain gardens) on properties smaller than one acre.	5-year plan	City Utilities	Public Works, P&R, Communications	– Evaluate implementation of irrigation ordinances.
Sustainable construction	Adopt standards and incentives for using green infrastructure and recycled materials in new construction.	5-year plan	OS	OS, Boone County, Boone Femme Watershed Initiative, USFWS	– Define incentives and set minimum requirements. – Research and catalog materials and products that meet the City's qualifications for green infrastructure and recycled content.
Flood risk assessment	Support a countywide flood risk assessment using existing data (e.g., FEMA maps) and updated analyses of historical and projected precipitation to identify high-risk areas and critical infrastructure vulnerable to flooding, to inform mitigation, property acquisition, and resilience planning.	5-year plan	Stormwater Utility	CD, Stormwater Utility	– Communicate with OEM on their interest in assessing flood risk.
Stream buffer requirements	Revise stream buffer requirements and related development standards to improve flood storage and reduce erosion risk. Include options—such as fee-in-lieu or mitigation banking—that allow or require developers to fund buffer restoration or greenspace expansion in priority areas where these investments provide greater community benefit than on-site improvements.	5-year plan	Stormwater Utility	CD, OEM	– Engage Stormwater Utility and Community Development. – Explore the merits of pursuing this program and work to develop a plan for moving forward as warranted.

IMPLEMENTATION

The Office of Sustainability will coordinate with relevant City commissions, departments, and staff to ensure completion of implementation actions.

Action short name	Action description	Timeline	Key next steps & timing considerations
Climate assessment requirement	Develop a process for requiring mitigation, adaptation and climate-equity impact assessments for all new policies and projects that meet threshold criteria, such as cost burden, vulnerability or increase to net emissions.	5-year plan	– Develop project charter in consultation with Project Management Office and City Management.
Project and budget integration	At the direction of the City Manager, integrate annual CAAP goals into the budget review process and include a summary in the proposed budget of existing and proposed mitigation and adaptation projects.	5-year plan	– Evaluate current state of the existing budget item information and collection process. Identify next steps needed to generate a report meeting the requirements of the action.
Community celebration events	Host a community event every two years to celebrate the annual progress report on the implementation of the CAAP.	5-year plan	– Assess what level of community event is attainable given current staff, funding and community capacity.
Budget priority identification	Use recommendations in the annual report to identify budgetary priorities that support implementation of the CAAP.	Ongoing	
Legislation identification	Identify State and Federal legislative issues that support the goals of the CAAP and enable its implementation.	Ongoing	
Annual progress report	Prepare an annual CAAP progress report and recommendations for City Council.	Ongoing	
City Council update	Present annual CAAP progress report policy and budget priorities to City Council for acceptance.	Ongoing	
Equitable implementation	Identify opportunities and barriers to equitable implementation of CAAP strategies.	Ongoing	
Division head meetings	Hold biannual meetings with division and department heads to highlight progress, plans and challenges related to projects with climate impacts.	Ongoing	
CAAP Team	Continue to convene the CAAP Action Group with representatives from across departments tasked with short- and medium-range planning of CAAP implementation activities.	Ongoing	

Action short name	Action description	Timeline	Key next steps & timing considerations
Data management and reporting	Maintain a data management and reporting system for key performance indicators of activities related to CAAP goals.	Ongoing	
Annual staff report	Create and distribute an annual municipal adaptation and GHG emissions report to staff to be used in assessment of current and proposed activities.	Ongoing	
Annual GHG emissions inventories	Conduct annual GHG emissions inventories, including identification of improved processes for quantifying net carbon sequestration and solid waste emissions.	Ongoing	
Metric alignment	Continue to align performance measurements of CAAP actions with existing planning metrics.	Ongoing	
Equity metrics	Develop and incorporate equity metrics in the evaluation of CAAP activities. This evaluation will be used as a criterion for the CAAP Action Group, Community Climate Commission and budget team during review of program cost, viability and success.	Ongoing	
Educational program alignment	Align existing City educational and engagement programs with CAAP goals and programs. Provide additional support to education and outreach for the CAAP and its individual actions.	Ongoing	
Educational materials	Design and promote CAAP educational materials to ensure full engagement of community members by using methods that are accessible and relevant to all.	Ongoing	
Funding options	Develop specific funding options for CAAP priorities.	Ongoing	
Cost savings tracking	Track cost savings associated with CAAP action across the City organization and allocate for use in supporting further mitigation and adaptation actions.	Ongoing	
Staffing requirements evaluation	Evaluate staffing requirements to ensure successful CAAP implementation and allocate required resources.	Ongoing	
Online progress dashboard	Continue using online dashboard to report on the status of CAAP priority actions/KPIs (e.g., progress of actions that have been initiated, implementation schedule of other actions not yet started, community and municipal GHG emissions, equity impacts of actions implemented).	Ongoing	
City plan integration	Integrate CAAP with other City plans, like the Urban Forest Master Plan, and support other City plans to further CAAP goals.	Ongoing	

Appendices

The following appendices provide supplemental information about the CAAP process and analyses. To view the appendices, please visit the City's website at https://beheard.como.gov/caap-update.

- Appendix A: CAAP Implementation Summary
- Appendix B: Focus Group & Interview Summary
- Appendix C: Long-Term and Removed CAAP Actions
- Appendix D: Original CAAP Action Implementation Matrix