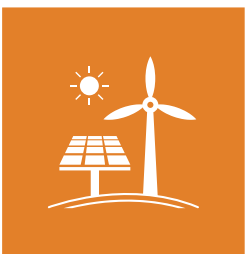
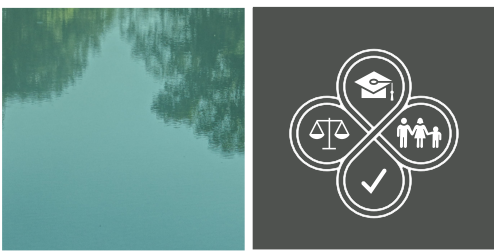
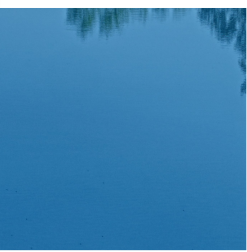
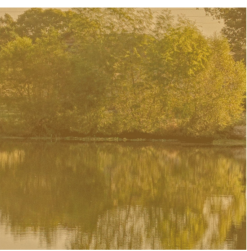



# Columbia Climate Action & Adaptation Plan (CAAP) Annual Report



# Columbia Climate Action & Adaptation Plan (CAAP) Annual Report - 2023



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## Implementation Update:

### Progress in the Process:

Meeting our City’s long-term sustainability goals requires teamwork, community connection and a commitment to integrating new processes. The following report demonstrates the progress of the Climate and Environment Commission and City of Columbia staff to identify new budget suggestions and support existing priorities

### Columbia’s CDP Score

The City of Columbia maintained its score of A- from the Carbon Disclosure Project. This score places the City above the regional and global averages for Adaptation measures. For Mitigation measures, the City’s score is on par with Regional peers and above the Global average score.

### Show Me the Relief:

The Office of Sustainability’s Show Me the Heat campaign has moved to the third phase of implementation now referred to as “Show Me the Relief”, where information is being gathered at in-person events, and the lived experiences of community members is used as data to assess what types of solutions to extreme heat are desired throughout our community, and what barriers exist to those solutions. See more about this work here: <https://comoclimateaction.org/category/show-me-the-heat>

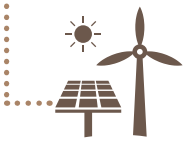
### Funding Opportunities:

In 2023, the Office of Sustainability pursued multiple funding opportunities. One of these opportunities was a formula grant awarded by the Energy Efficiency and Conservation Block Grant Program; these funds will be used for energy efficiency or renewable energy at City-owned facilities. The City’s Charging and Fueling Infrastructure grant application was selected in early 2024. The funds will be used to install Level II and DC Fast Charge stations across the community. Additionally, the Office of Sustainability worked with various departments throughout the City to determine a list of City-owned projects that would be fundable through EPA’s Climate Pollution Reduction Grant. On April 1, 2024, the Department of Natural Resources submitted an application that included a list of projects to be funded by the EPA.

# Energy

- **A More Resilient Grid**
- **Community Solar**
- **Energy Emissions Breakdown**
- **Improving Energy Efficiency in Columbia**





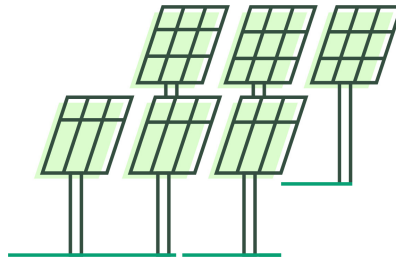
# Energy

## A Greener Grid

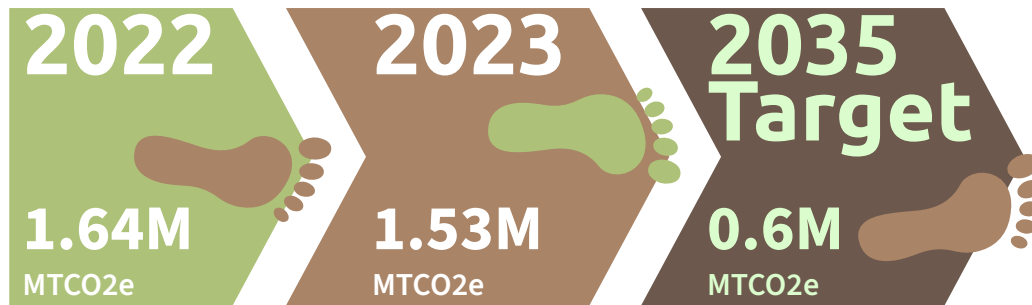
In 2023, the City of Columbia Utilities purchased or generated 21.84% of its total electric usage through renewable energy sources. This is a 3.69% increase from last year, which is the City's highest percentage to date. This means that the electricity supplied by the electric utility was less carbon-intensive than in previous years. Learn more about renewable energy goals in the [City of Columbia Utilities 2024 Renewable Energy Plan](#)

## Community Solar

A plan for a community solar program was taken to the City Council in November 2023 and became operational in January of 2024. Production for this program comes from the Truman and Bernadette Solar fields. In 2023, the Truman Solar facility produced 22,733 MWH of energy and the Bernadette Solar facility produced 317 MWH.



**2023 Energy emissions have decreased 7.2% from 2015 baseline levels.**



## Improving Energy Efficiency in the Columbia Community

Energy Savings from Efficiency Programs	Energy Savings (kWh)	GHGs Avoided (MTCO2e)
Free Home Energy Assessments	42,677	26.6
Home Performance with Energy Star	211,105	131.6
Residential Air Conditioner/Heat Pump Rebates	299,140	186.6
Commercial Lighting Incentive Program	1,552,094	967.4
Commercial Air Conditioner/Heat Pump	275,733	171.9
Commercial and Residential Solar	1,307,176	814.8

In FY 2025, Columbia Water and Light electric customers will be able to participate in a brand new suite of energy efficiency programs. See the latest programs here: [CoMo.gov/utilities/columbia-power-partners/](https://CoMo.gov/utilities/columbia-power-partners/)



# Housing, Building and Development

- **Benchmarking and Municipal Buildings**
- **2023 Energy Emissions and Consumption by Sector**
- **Municipal Building Energy Use Intensity**
- **Municipal Building Efficiency Improvements**

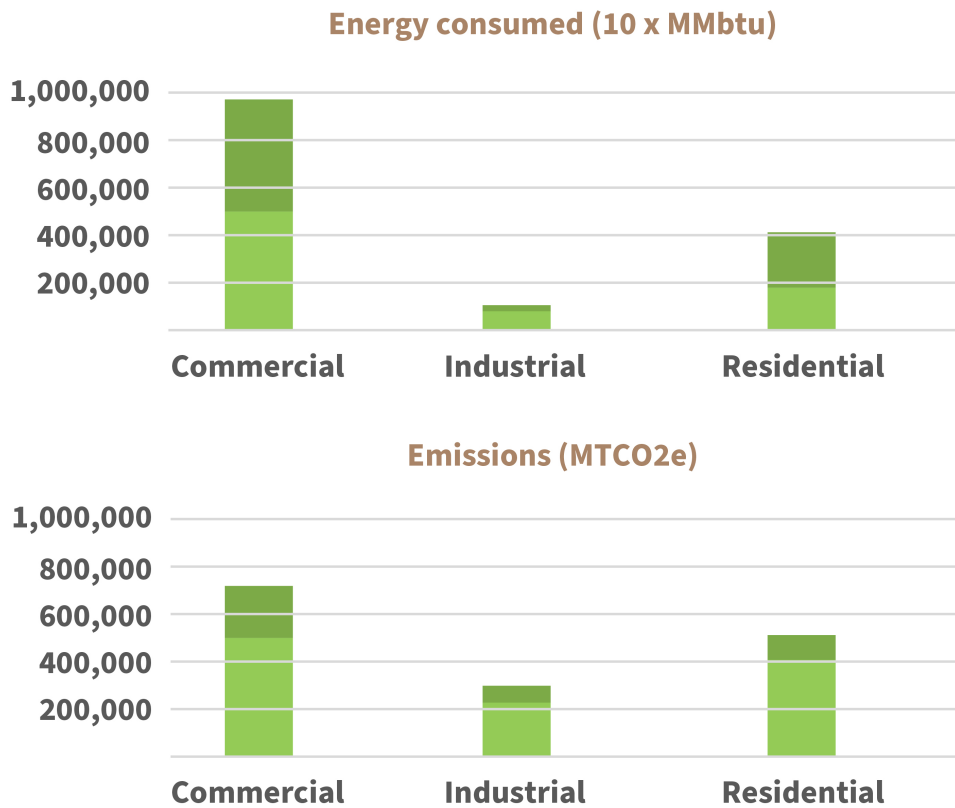


# Housing, Building and Development

## Benchmarking Municipal Buildings

In October 2021, the Building Energy and Transparency Policy was passed requiring all municipal buildings to be benchmarked. Since then, City staff have worked with local professionals to collect building information on 25 additional facilities. This information is uploaded to the EPA’s Portfolio Manager platform along with energy and water usage. Currently, utility usage at more than 90% of eligible City buildings is evaluated through this program.

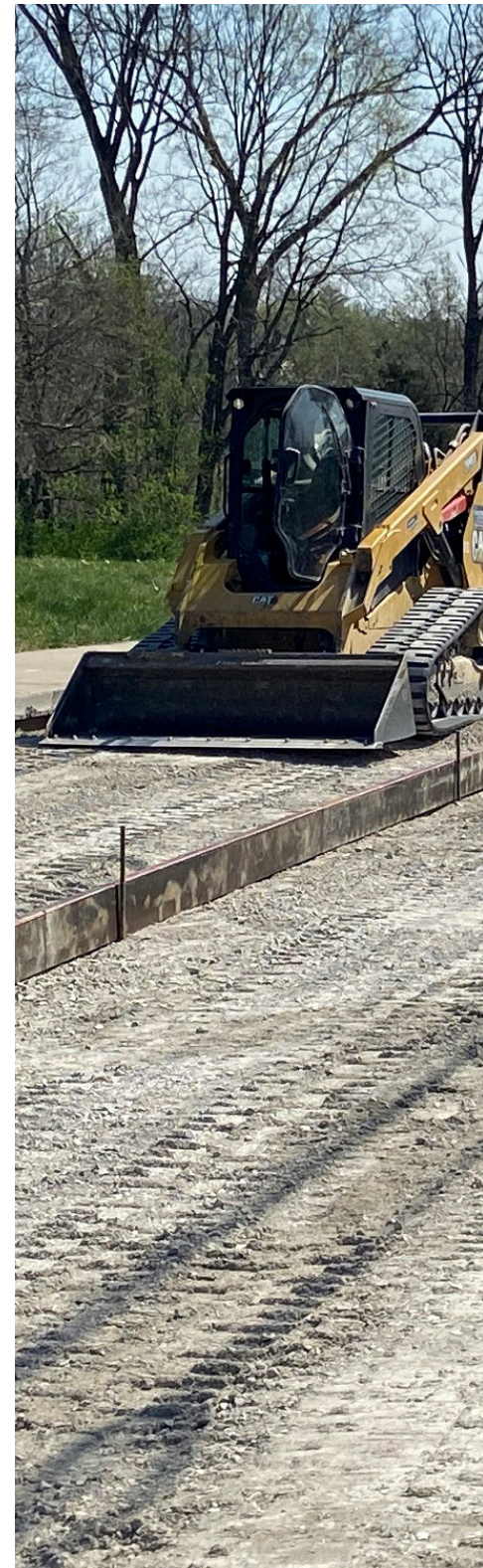
## Emissions and Consumption by Sector



## Municipal Building Energy Data

2023 The City of Columbia’s building portfolio energy use intensity was 20.2% higher than the National median for a similar portfolio. The emissions intensity of the portfolio is 19.4% higher than the national median intensity. In 2023, 8 more municipal facilities were audited and added to Portfolio Manager, enabling easier access to energy use, emissions, and performance data for Staff.

**Benchmarking efforts were 79% complete at the end of the calendar year.**

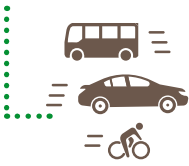




# Transportation

- .. Institutionalizing the Fleet Electrification Policy
- .. Charging Infrastructure





# Transportation

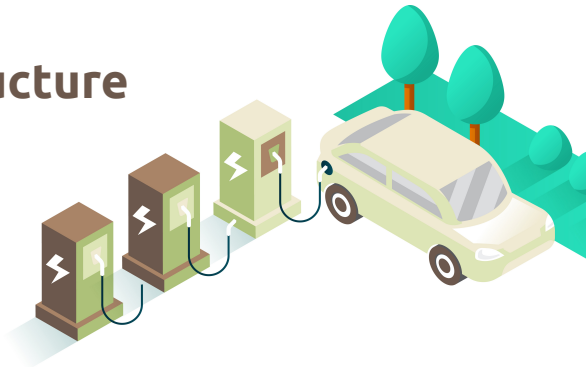
## Institutionalizing the Fleet Electrification Policy

Since the City's Fleet Electrification Policy was signed and adopted July 21, 2023, internal procedures have been developed to ensure that all City departments are prepared and equipped to transition their fleet vehicles to electric when appropriate.

With this new process in place, the City was able to replace several gas-powered fleet vehicles across multiple departments with seven Ford Lightnings and one Chevy Bolt EV.

## Charging Infrastructure

To meet the needs of the new electric fleet vehicles, planning, and construction for three City-owned charging stations began in January 2023.



In addition to making progress with electrifying fleet vehicles, the Office of Sustainability also made great strides in increasing access to EV charging stations in the community.

As a result of the Charging and Fueling Infrastructure grant application made in 2023, Columbia is slated to receive enough funding for Level II and DC Fast Charge EV charging stations at two downtown parking garages, the Daniel Boone Regional Library and the Columbia Regional Airport.

Water and Light also began offering rebates of up to 50% of the cost to install Level 2 EV charging stations at home, as well as incentives for a 240V NEMA outlet.

---

### From the website:

**Existing or new construction:** City of Columbia Utilities residential electric customers can install a Level 2 EV charging station that is eligible for rebates up to 50% of the project cost up to \$500.

**New construction:** Residential new construction projects in City of Columbia Utilities electric territory can install a 240V NEMA outlets for \$100 per outlet, maximum of one per household.





# Waste

- **Resource Conservation CAAP Team**
- **Household Hazardous Waste Events**

## Resource Conservation CAAP Team

In early 2023, the CAAP teams were reorganized to merge the former Good Stewards Buildings and Resource Stewardship into one team: Resource Conservation. This new team combines the city's top experts in waste and resource management.

## Household Hazardous Waste Events:

The Mid-Missouri Solid Waste Management District H held an e-Waste collection event in May 2023 at the Northeast Regional Park facility. 27.8335 tons of electronic waste was properly disposed of, repaired, repurposed or recycled.

The Solid Waste Utility hosts Household Hazardous Waste Collection for the community on the first and third Saturdays April through November at the Grissum Building at 1313 Lakeview Avenue. These events enabled the proper diversion, disposal, or recycling of nearly 61 tons of hazardous waste.

**299,681**  
Total Collected (pounds)

**121,621**  
Total Diverted (pounds)

**61**  
Total Diverted (tons)





# Health, Safety and Well-being

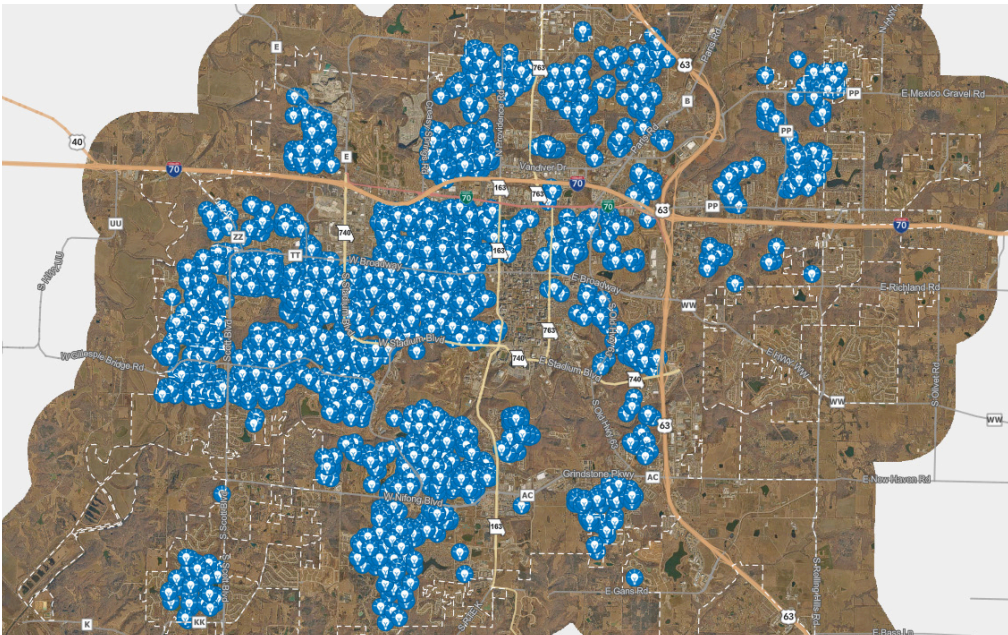
•• Rental Energy Efficiency



## Rental Energy Efficiency

In March 2023, the Healthy Housing team gathered feedback from tenants, property managers/owners, and community-based organizations regarding the Rental Energy Efficiency project. In response to this feedback, they have launched the second phase of the project, which includes a Rental Home Energy Score pilot program. This program allows rental properties to voluntarily request a free energy efficiency assessment. From this assessment, a Department of Energy Home Energy Score is added to an interactive, public-facing map of other homes that have received energy efficiency scores.

- You can view the map and learn more about **Home Energy Efficiency Scores** here: <https://experience.arcgis.com/experience/e0f021ac82e24508a86eedcfd5cf4455>



### Next steps:

- Work with tenants, landlords and property owners to score more properties.
- Inform/educate public about the Home Energy Score map as a tool for identifying energy efficient properties.
- Continue to pursue professional services to analyze housing stock energy efficiency potential.
- Coordinate with Boone County on the results of their housing study and how we might integrate the information collected.
- Use data gathered from pilot program and housing stock study to draft policy and establish a date by which all rental housing will be required to meet basic energy efficiency standards at license renewal.



# Natural Resources



## Rain garden at the City of Columbia Fire Station #9

These photos show the results of the natural capital maintenance funding. In addition to the improved appearance, this work restores this natural capital asset's capacity to retain, filter, and treat stormwater runoff.



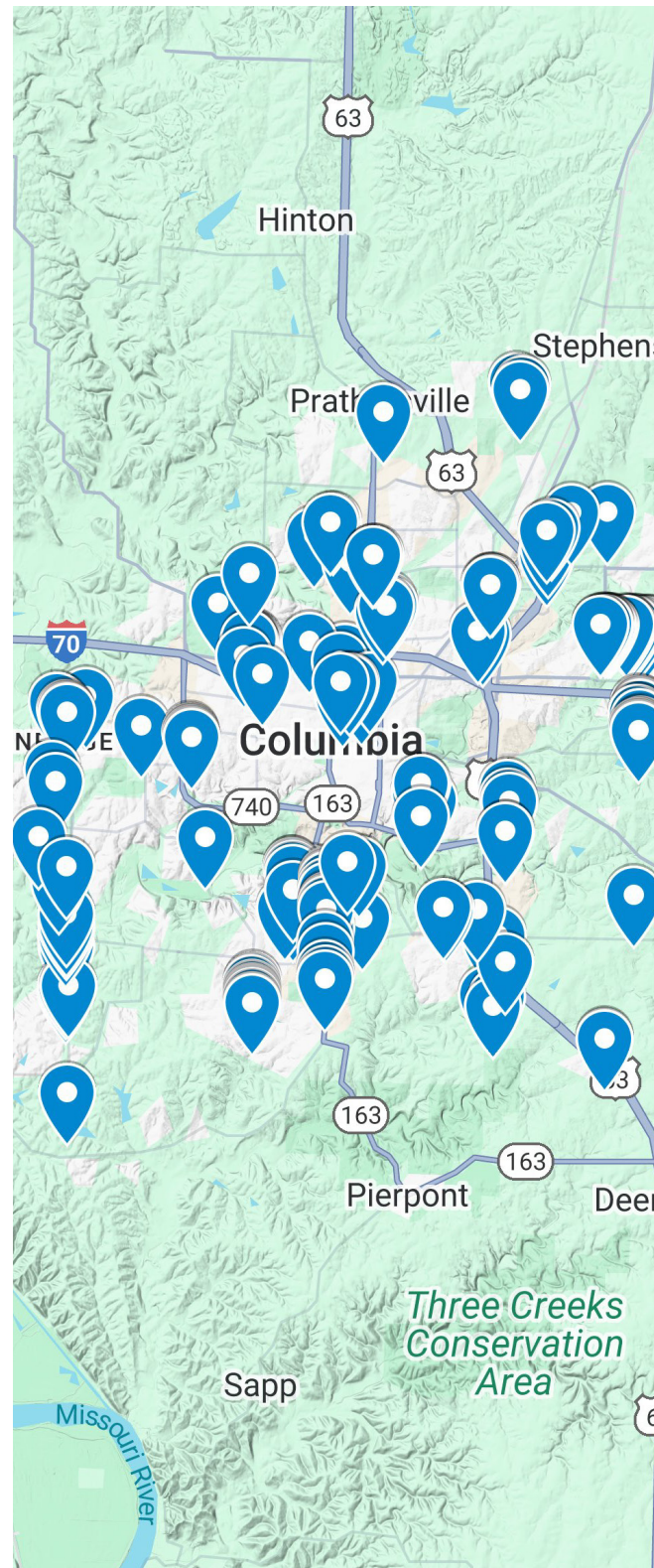
# Natural Resources

The Good Stewards - Natural Resources CAAP Team, as with others, is made up of staff across the organization. This team has made significant contributions to the improving quality of the City of Columbia's natural areas and natural resource management. The team works collaboratively across departments from Finance to Utilities to Parks and Recreation. Some highlights of their work include:

- **Forum Blvd. capital improvement project:** Good Stewards team members provided valuable advice to other city staff on the early design phases regarding green infrastructure of the project.
- **Arbor Day Foundation's Community Canopy Program.** Team members are collaborating with partners to develop a project aimed at increasing tree canopy coverage in neighborhoods with urban heat islands.
- **Missouri Department of Conservation:** Exploring support of the Boone County One Health Project and the Missouri Conservation Corps to identify programmatic needs and collaboration opportunities for community tree-planting and maintenance.

As part of the FY24 budget process the Good Stewards group requested an increase in funding the maintenance of City-owned natural capital\*. These funds will improve the City's capacity to maintain street trees, trees in parks, rain gardens, bioretention cells and more across Columbia. To guide the use of funds, members of the team developed a two-year plan for stormwater BMP maintenance and hired a local contractor to perform initial maintenance on sites in good condition to maintain their functional status. Initial maintenance includes removing trash, weeding, mowing and spot herbicide application. After which, the sites are evaluated for future work. Following this year's maintenance period, staff will reconvene to evaluate and prioritize BMPs for complete reconstruction in FY25.

\*The City of Columbia maintains roads, pipes, sidewalks, power lines and other capital infrastructure. Natural capital are the City's natural assets including geology, soil, air, water and all living things. Good Stewards team members are responsible for maintaining natural capital including roadside vegetation, park lands, trails and Green Infrastructure. These significant natural assets buffer streams from pollution, create shade over sidewalks, and provide healthy, low-cost opportunities for Columbia residents to access and enjoy natural areas.



# Climate and Environment Commission(CEC) 2023 Report

## A report from CEC Chair, Leanne Tippett Mosby

On behalf of the Climate and Environment Commission, I am pleased to report these highlights from calendar year 2023.



### Commission activities:

Collaborated with the Tree Board on items of mutual interest that were communicated to City Council.

Compiled and submitted recommendations to Council for the FY24 budget and developed a new process for FY25 to provide recommendations earlier in the process. This new process included more upfront communication and collaboration with staff.

Met with utilities' staff to discuss the City's natural gas usage and compiled a report and recommendation regarding incentivizing heat pumps that was sent to the Water & Light Advisory Board and Columbia Water & Light.

Provided input to staff on the Show Me the Heat campaign.

Reviewed commission procedures and Sunshine Law requirements.

Highlighted various pieces of state legislation of potential interest to the commission.

Reviewed the 2022 renewable energy report.

CEC and Building Construction Codes Commission presented consistent positions to Council on the 2021 building energy codes.

Developed and passed a recommendation to Council and the Water & Light Advisory Board urging them to request a summary of the effects of the new rate proposal on rate affordability for low-income residents and/or disparate impacts, and long-term total emissions.

Reviewed the 2022 GHG Inventory Report prepared by staff.

Developed a list of concerns about the community solar program that were forwarded to staff and developed a statement to the Council supporting the program and encouraging expansion through the development of additional solar fields.

### Presentations to the commission:

Melinda Hemmelgarn presented on pesticide risk and the Beyond Pesticides initiative.

John Simon, staff liaison to the Building Construction Codes Commission, presented on the 2021 building energy code.

Gregg Coffin, Water & Light Advisory Board, presented on the electric rate structure including the WLAB process and trainings, the utility's financial needs, findings of a cost of service and rate study, rate affordability, impacts of COVID, and the inverted block rate's ability to encourage energy conservation.

Jim Windsor presented an alternative electric rate structure proposal.

Brandon Renaud, utility services manager for Columbia Utilities presented the Renewable Energy Plan, noting the RE percentage for 2022 was 18.15%, surpassing the goal of 15%.

Danielle Fox and Corrina McClee with the City's Office of Sustainability, presented information on the Show Me the Heat campaign and the Neighborhood Resilience Forum.

Carolyn Amaran, representing a coalition of several groups, presented a proposal for an electric rate structure as an alternative to the structure approved by Council.

Todd McVicker, Columbia Utilities, presented on the community solar program.

Gabe Huffington, director of the City's Parks & Recreation department presented on the CPRD Pest Management Program.



## Collective and Individual Participation in community events, engagement, and collaboration with staff

The commission as a group and individual members exhibit dedication to issues affecting climate and the environment by participating in a wide range of activities. Members continue to be highly engaged in their networks and the community at large. Several examples follow:

CEC hosted an educational booth at Columbia's 2023 Earth Day celebration.

### Individual members:

- Participated in a coalition of partners convened by Missouri Energy Initiative to explore taking advantage of federal incentive programs.
- Met with staff and other commission members about the dashboard and Sustainability's social media.
- Toured the City landfill and associated energy production and materials recovery facility.
- Volunteered to participate in the Transit Study Steering Committee.
- Participated in a virtual information session related to the Missouri Department of Natural Resources' Air Pollution Control Program Climate Pollution Reduction Grant planning efforts.
- Continued to foster the sustainability message with stakeholders on Scope 3 impacts.
- Worked with their corporate ESG team on an internal training tool, establishing tentative funding for 2025 for development of Environmental Product Declaration forms for various products, and provided guidance/content for our blog topics.
- Facilitated introductions of City staff to a local middle school (Smithton) to help with their interest in returning part of their school property to a native grassland.
- Worked with HOA board to communicate resources to recover from a significant impact by the emerald ash borer.
- Took part in several webinar/training events - Southface Institute, MEEA, Missouri Greenbuildings, Keller Sustainability, Deep Foundations Institute Sustainability Committee, Carbon Leadership Forum/EC3 Tool.

# Climate and Environment Commission (CEC) 2023 Priorities



## Energy

Staff Priority List	CAAP Action	CEC Next Steps	Work Initiated?	Status
Y	E-1.3.2 – Codify through ordinance Columbia Water & Light’s responsibility to meet 100% renewable energy generation or purchase by 2035.	Next step is to work with the staff and the WL Advisory Board to propose a new ordinance.	Yes	CEC approved a recommendation to the IERMP task force that Columbia achieve 100% renewable energy from water and light by 2030. This is a change from 2035 to 2030. IERMP has been completed and has been presented to the City Council.
Y	E-1.2.1 – Include CAAP priorities in Columbia Water & Light’s long-range electric and water resource planning goals.	CEC will monitor the implementation of the IERMP and provide input or assistance as needed.	Yes	CAAP goals were included in the IERMP statement of work. CEC list of priorities was voted on at the September 2020 meeting and provided to W&L staff for inclusion in the IERMP.



## Housing, Building and Development

Staff Priority List	CAAP Action	CEC Next Steps	Work Initiated?	Status
	H-1.1.2 - Increase energy efficiency funding options for families (low-interest financing, on bill financing, Pay As You Save, PACE, etc.).	CEC will monitor and provide input on the Utility’s process of revising programs as needed.	No	
Y	H-1.1.3 – Establish a date by which all rental housing will be required to meet basic energy efficiency standards at license renewal.	CEC will continue to monitor the process and provide input as needed.	Yes	Staff from the offices of Sustainability, Neighborhood Services and Utility Services developed a plan, deployed in early 2023, to collect information from stakeholders in the community regarding rental energy efficiency.

Y	H-1.3.3 – Introduce a policy that requires all new and existing municipal buildings to meet and maintain energy and resource efficiency standards (ENERGY STAR, LEED, Home Energy Score or other).	CEC will continue to monitor the city CAAP team's progress and provide input as needed.	Yes	City CAAP teams are working on this.
Y	H-1.3.4 - Introduce a policy that requires all municipal buildings to be benchmarked with the current Energy Score rating, the energy use intensity (kBtu/sqft) and the energy reduction goal. These benchmarks and goals shall also be posted on the City's website.	CEC will monitor implementation of the benchmarking process and provide input as needed.	Yes	The City adopted the formal policy proposed by CAAP staff team and reviewed by CEC for benchmarking standards. Benchmarking of buildings is in progress.
Y	1.4.1 - Require that the City adopts the International Building Energy Conservation Codes for municipal, commercial and residential buildings as written.	On May 23, 2023, the CEC voted to accept a consensus position developed by members of the CEC and BCCC.	Yes	The CEC and BCCC formed a small ad hoc group to discuss building codes.
	1.5.1 - Incentivize switching space and water heating from fossil fuel-based to electric heat pumps.	CEC provided a recommendation to the Water & Light Advisory Board on incentives. CEC will monitor Utility Services review and update of rebates and incentives and provide input as appropriate.	Yes	Sustainability staff is involved in the Utility Services review and update of the electric and water efficiency rebates and incentives.



## Transportation

Staff Priority List	CAAP Action	CEC Next Steps	Work Initiated?	Status
Y	T-1.1.2 – Revise street design standards to prioritize people walking, biking and riding transit while also accommodating vehicles.	CEC will monitor the efforts of the Public Works Department study and provide input as appropriate.	Yes	The Public Works Department received grant funding to evaluate transportation safety issues.
Y	T-1.2.1 – Improve efficiency, convenience and reliability of bus service and infrastructure	CEC will monitor progress and provide input as needed.	Yes	The transportation team met with transit manager to understand current routes and challenges.

## Implementation

Staff Priority List	CAAP Action	CEC Next Steps	Work Initiated?	Status
Y	I-1.1.1 - Use recommendations in the annual report to identify budgetary priorities that support implementation of the CAAP.	CEC will move its discussion of budget priorities to early fall to provide timely input to align with the city manager's budget development process.	Yes	Upon recommendation of city staff, the CEC considered and provided input on budget priorities during the city manager's budget plan development process.
Y	I-3.3.1 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.	CEC will continue to collaborate with city staff on communications related to the CAAP and CAAP topics.	Yes	CEC will propose relevant outreach activities to City Staff for use in social media posts. And will continue to participate in public engagement opportunities.
Y	I-3.4.1 – Develop specific funding options for CAAP priorities	CEC will review communications about funding opportunities that the City could take advantage of; explore community partnerships.	No	
Y	I-3.5.1 - Use online dashboard to report on the status of the CAAP priority actions/KPIs (eg. 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).	Propose changes to the online dashboard to make it more up-to-date and relevant.  Support continued funding for maintenance of KPIs and dashboard.	No	In process - dashboard deployed with staff updates.
	I-3.5.2 - Host a community event every two years to celebrate the annual progress report on the implementation of the CAAP.	The CEC will explore community outreach events with city staff.	Yes	The CEC participated in the Juneteenth celebration at Cosmo Park, which is approximately the same time as the anniversary of the CAAP, but did not hold a separate event in 2022.



## Natural Resources

Staff Priority List	CAAP Action	CEC Next Steps	Work Initiated?	Status
Y	NR-1.1.1 - Manage publicly-owned natural areas to enhance and maintain diverse native communities.	Advocate for ecological planning for habitat improvement in City-led efforts such as the Natural Resources Inventory and upcoming Comprehensive Planning Process.	Yes	
Y	NR - 1.1.2 - Establish and effectively manage native-habitat corridors along trails and utility easement areas to restore and maintain landscape connectivity.	Draft a collaborative letter with the Tree Board encouraging holistic forest management or other suggested points of attention for the Comprehensive Planning Process.	Yes	
Y	NR - 2.1.1 - Complete change to rate structure to encourage reduced water use.	CEC will continue to collaborate with the Water and Light Advisory Board.	Yes	CEC collaborated with and provided input to the Water and Light Advisory Board on water rates.
	NR - 3.1.1 - Implement strategies to mitigate stormwater impacts due to development and redevelopment of properties currently exempted from stormwater management requirements.	Advocate for ecological planning for sensitive area protection in City-led efforts such as the Natural Resources Inventory and upcoming Comprehensive Planning Process.		
	NR - 3.2.2 - Perform detailed studies to identify areas that are at high risk for flooding and are maybe a prospect for property acquisition or mitigation.	Advocate for ecological planning for flood risk reduction in City-led efforts such as the Natural Resources Inventory and upcoming Comprehensive Planning Process.	No	

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