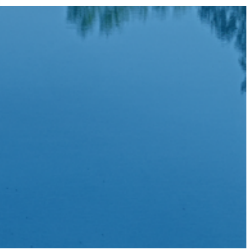
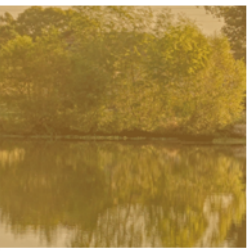
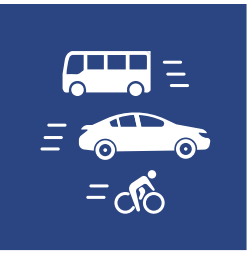


City of Columbia, Missouri

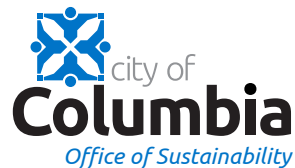
Columbia Climate Action & Adaptation Plan (CAAP) Annual Report


For Calendar Year 2022




City of Columbia, Missouri

Columbia Climate Action & Adaptation Plan (CAAP) Annual Report - 2022



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TTY (MoRelay) 711

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Columbia's CDP Score

In 2022, the City of Columbia's Climate Action and Adaptation Plan received an A- score from the Carbon Disclosure Project (CDP), which is the world's leading climate reporting platform. Columbia's A- score places us a top performer as it pertains to Climate mitigation and adaptation initiatives on both a regional and global scale.



Improving Sustainability Data Accessibility

The Office of Sustainability's webpage (CoMo.Gov/Sustainability) hosts a dashboard with Climate Action and Adaptation Plan (CAAP) related data. There are now downloadable and screen reader-friendly CSV tables of the data in the dashboard. There is also a CSV download option for the Municipal Benchmarking Dashboard. This download option expands who can explore our data and how the data can be explored.



1

Energy

- **A Cleaner Grid**
- **Energy Emissions**
- **Improving Energy Efficiency in the Columbia Community**
- **Energy Minute Monday**



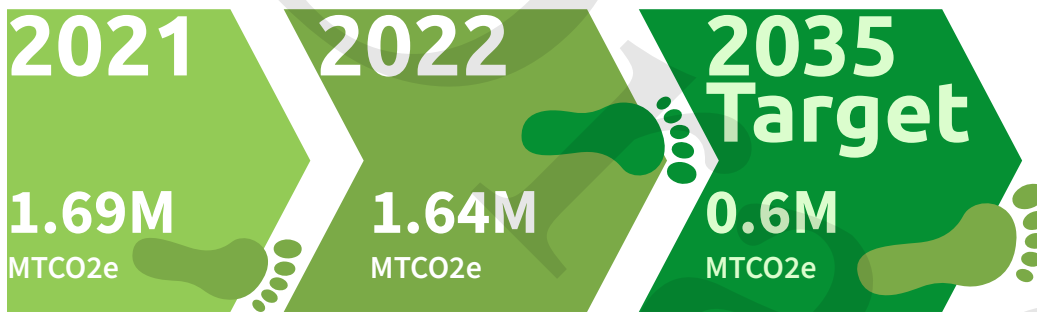
A Cleaner Grid

In 2022, 18.15% of the City of Columbia Utility’s energy was supplied by renewable energy, which is the highest percentage yet. This means that the electricity supplied from the electric utility was less carbon-intense than in previous years. Learn more about the City of Columbia’s renewable energy in the [City of Columbia Utilities 2023 Renewable Energy Plan](#).

Energy emissions have decreased by 2.5% from the 2015 baseline levels.

Visit CoMo.gov/Sustainability for more information.

Energy Emissions:



Improving Energy Efficiency in the Columbia Community

[Columbia of Columbia Utility energy efficiency programs](#) resulted in an estimated reduction of 3,065 MWhs of electricity, avoiding an estimated 2,160 metric tons of CO2 equivalent in the Columbia community in 2022. Community participation in energy savings programs is an important component of the success of this program.

Energy Minute Monday

In 2022, the Clean Energy CAAP team launched Energy Minute Monday, a social media campaign that features a weekly term related to renewable energy. These terms come from an internal renewable energy glossary for City staff. You can follow Energy Minute Monday in 2023 on the Office of Sustainability [Facebook](#) and [Twitter](#).

Savings by Program	kWh Savings	GHG Reduction
Home Performance with Energy Star (kWh)	309271	342
Residential Air Conditioner/Heat Pump Rebates	391269	276
Commercial Lighting Incentive Program	2158193	1522
Air Conditioner/Heat Pump Rebates	58081	41
Commercial Solar	48538	34
Residential Solar	1331143	939



2

Housing, Building and Development

•• Benchmarking Municipal Buildings

•• 2021 & 2022 Energy Emissions

Residential Energy Use

••

Municipal Municipal Building Energy Use Intensity

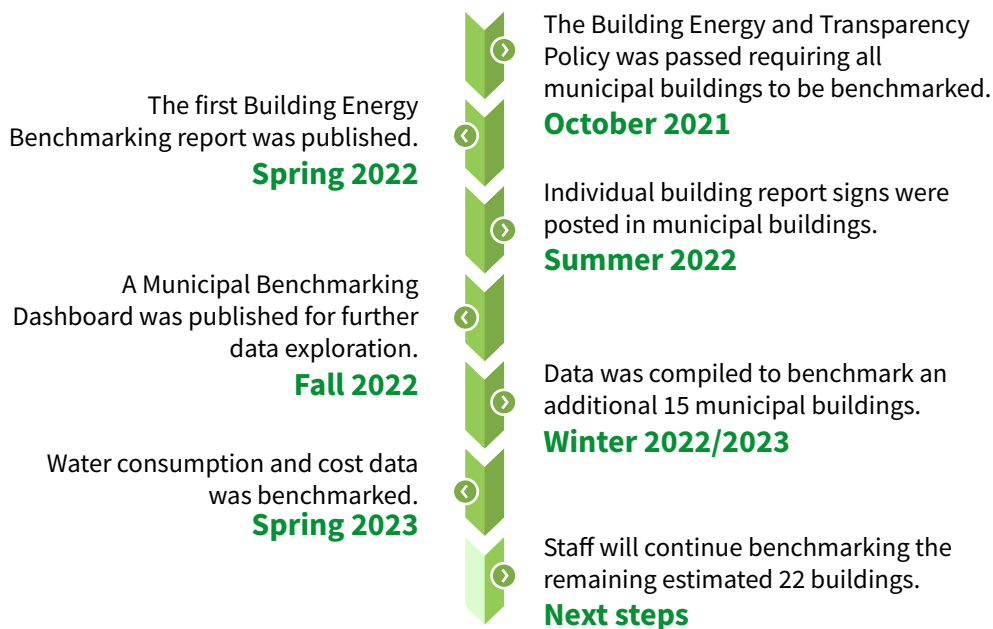
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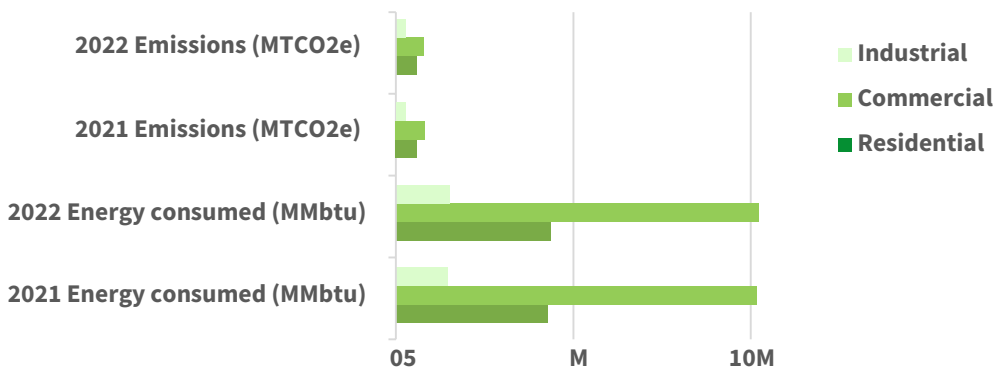
Housing, Building and Development

Benchmarking Municipal Buildings

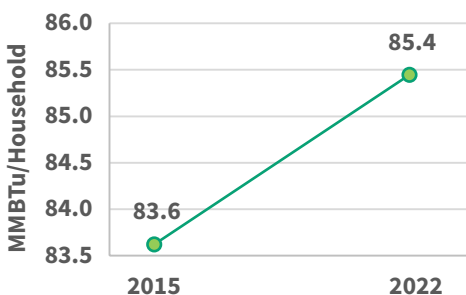
City staff has made progress on tracking and reporting energy performance and emissions of municipal buildings.



2021 and 2022 Energy Emissions by Sector



Residential Energy Use (MMBtu/Household)



Municipal Portfolio EUI Changes From 2015 Baseline

Awaiting Data



3

Transportation

- Drafting a Fleet Electrification Policy
- Improving Transit Sustainability
- Automatic Vehicle Locator (AVL) Data
- Community Transportation Emissions By Year
- Municipal Transportation Emissions By Year



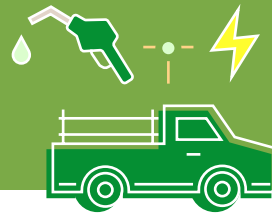


Transportation

Drafting a Fleet Electrification Policy

City staff have drafted a Fleet Electrification Policy that would require the replacement of internal combustion fleet vehicles with zero-emission vehicles to phase out fossil fuel use in the municipal fleet by 2040. The policy was presented to City leadership and the Climate and Environment Commission in 2022. City staff expect to have the drafted policy signed in 2023.

By 2028, this policy would result in 140 electric/hybrid vehicles, equivalent to 20% of the vehicle fleet. This would avoid an estimated 175 MTCO₂e per year with a 40% electric grid.



Transit



Adding Bus Shelters

In 2022, City staff planned the addition of three bus shelters in the Columbia community that will be added in 2023. These shelters provide relieve from traffic, heat, and other weather for transit riders.



Grant for Electrifying City Transit

A LoNo (low or no emissions) grant was received in 2022 to add six electric buses to the City's transit fleet. These buses will replace diesel buses and will result in a total of 10 electric buses in the City fleet and a 40% electric transit fleet. The new buses will seat more people and have an extended travel range compared to the City's existing electric buses.

Automatic Vehicle Locator (AVL) Data

AVLs were added to City fleet vehicles in 2021 to track vehicle data such as mileage and idling. 2022 was the first full year of data collection. This data will be analyzed in 2023 and used to improve fleet efficiency.

2022 Community Transportation Emissions:

609.6k MTCO₂e

↓ 8.7% from 2015

2022 Municipal Transportation Emissions:

12.2k MTCO₂e

↓ 21.5% from 2015





4

Waste

- [Resource Stewardship CAAP Team](#)
- [Spring Recycling Collection](#)
- [Household Hazardous Waste Events:](#)
- [Waste emissions by year](#)
- [2022 Waste Diversion](#)

Resource Stewardship CAAP Team

The Resource Stewardship CAAP team reorganized and added new members in 2022. They begin reviewing existing goals, strategies, and actions to reduce landfill waste and encourage water conservation.

Spring Recycling Collection

On May 7, 2022, the City of Columbia joined Boone County, the University of Missouri and the Mid-Missouri Solid Waste Management District in hosting a collection for tires and electronic waste. The event diverted 27.8 tons of electronic waste and over 19 tons of tires.

Household Hazardous Waste Events:

60.4
Tons Diverted
4,251
Total Vehicles
Attended



The City of Columbia hosts 15 annual household hazardous waste collection events to keep toxic waste out of landfills. Many of the materials collected are able to be reclaimed or recycled.



2022 Waste emissions:

32.6k MTCO₂e

↓ **38% from 2015**

2022 Waste Diversion:

8%
Recycled

11%
Composted

81% Landfill

5

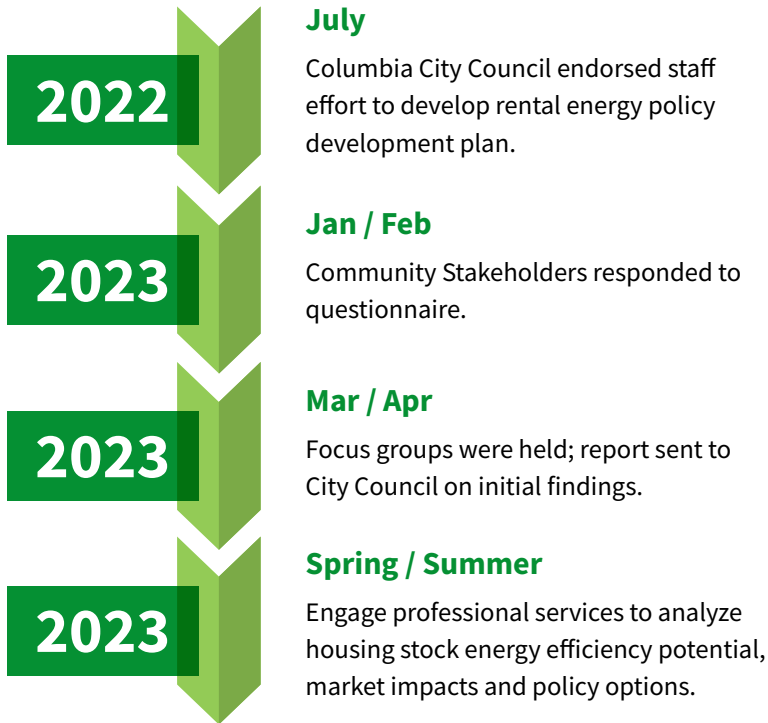
Health, Safety and Well-Being

•• Rental Energy Efficiency



Health, Safety, and Well-Being

Rental Energy Efficiency



In July 2022, City Council responded to a report provided by the Climate and Environment Commission by supporting an initiative to identify ways to improve energy efficiency in rental housing. The initial phase of this process concluded in March of 2023 and consisted of two activities: a stakeholder questionnaire and focus groups. Throughout the process, responses from tenants, property managers/owners, and community based organizations surfaced points of agreement and points of friction/tension in priorities. The top four priorities from the survey and focus groups were the cost of rental housing, quality of rental housing, cost of energy efficiency improvements, and cost of utilities.

The next phase of the project will involve the work of a third-party consultant to evaluate the energy efficiency improvement potential of the rental housing stock in Columbia, suggest actions/policies that could be implemented in our community, and analyze the potential impacts on all stakeholders in the rental housing market.



6

Natural Resources

- **Growing CoMo Wild Yards**
- **Biodiversity is Climate Resilience**
- **Prescribed Burns for Ecosystem Health**
- **Per Capita Water Consumption & Emissions**



Natural Resources

Growing CoMo Wild Yards

In late 2022, Office of Sustainability staff started to transition the ever-popular CoMo Wild Yards program to add exciting new partners and services. In cooperation with the U.S. Fish and Wildlife Service, the program will now be able to offer direct services to help support the installation of native landscaping on residential and commercial properties.

Biodiversity is Climate Resilience

A high level of biodiversity in the City provides a buffer for urban plant and animal populations when a flood, drought, or heat wave hits our town. Parklands are not large enough to maintain a high level of biodiversity, so the City of Columbia has begun restoring prairies, wetlands, and other Missouri natural communities in other urban areas.

Since 2019, the Public Works Department has converted and maintained 29.5 acres of mowed turf grass along roadsides, medians, and roundabouts to native prairie vegetation. In addition to improving the biodiversity of the City, this program also contributes to our carbon emissions reduction goals by removing carbon from the atmosphere and storing it in the soil. Roadside prairies are the first line of defense against stormwater runoff pollution, trapping trash and pulling pollutants from the water as it passes through the plant and soil.

Prescribed Burns for Ecosystem Health

In 2022, the City of Columbia obtained a Prescribed Burning Contract for all City departments to utilize. Prescribed fire mimics the historical presence of fire on the landscape that many Missouri native plants adapted to and now require to thrive. This burn contract allows the City to manage our natural resources better. Prescribed fire returns nutrients to the soil, promotes native plant growth, and keeps fire-adapted natural communities healthy.



Per Capita Water Consumption

42.6k Gallons

↑ 10.4% from 2015

↑ 0.9% from 2021

Per Capita Water & Wastewater Emissions

7.8k MTCO₂e

↑ 3.2% from 2015

↓ 45.6% from 2021



SHOW ME THE HEAT

Columbia Heat Map 2022

CAAP Implementation Spotlight: Community Heat Mapping Campaign

CAAP Implementation Spotlight: Show Me the Heat Campaign
Summer is already hot in Missouri, and climate change is making it hotter for longer. People living in cities are at greater risk of extreme heat because they have more heat-absorbing surfaces than suburban and rural areas as well as fewer trees. The lack of vegetation and high density of buildings trap heat in place, creating a heat island around the city.

Prioritizing communities that feel the heat the most is integral to preparing our community for future extreme heat events. To do that, we need to know where the urban heat islands in Columbia are located. The City and our community partners worked with CAPA Strategies, Inc. to identify where urban heat islands exist in Columbia by hosting a Heat Watch community science project called "Show Me The Heat."

On August 6, 2022, thirty-six volunteers collected thousands of data points by attaching sensors to their vehicles and driving six predetermined routes throughout Columbia on one of the year's hottest, driest, and most cloudless days. As a result, we now have heat distribution maps that show us how heat is distributed across the City. View the Show Me The Heat results at CoMoClimateAction.Org.

