





August 29, 2024



Mr. De'Carlon Seewood City Manager City of Columbia Columbia, Missouri 65201

The City of Columbia Finance Department has prepared a Community Trends Manual since 2021. Prior to 2021, demographic and socioeconomic data were included in the 5-Year Trend Manual, which focused primarily on the City's financial strengths and weaknesses. The Community Trends Manual was created as a separate document in order to better align with our Strategic Plan and increase data transparency. The purpose of this document is to illustrate the demographic factors that affect the City's financial condition. All of these components are relevant to understanding our fiscal position and should be documented, accessible and engaging. This year's Community Trends Manual was prepared for FY 2019 through FY 2023.

The Community Trends Manual that follows is separated into six distinct sections: Demographics, Standard of Living, Local Economy, Fiscal Health, Community Services, and Environmental Indicators. In each section, you will find a description of the metric being observed, data from the current period (2019 – 2023), an analysis of that data, and citations of the sources used. By including environmental indicators, we will be better able to track our progress toward our goals outlined in the Climate Action & Adaptation Plan (CAAP).

Our goal with the Community Trends Manual is to assist stakeholders and policymakers, including City Council and City Management, in making informed decisions in alignment with our Strategic Plan.

Respectively Submitted,

Matthew Lue, Director of Finance

Debroth

Deepayan Debnath, Economist Supervisor

Table of Contents

Demographics	1
Population and Density	2
Population by Race	3
Population by Age	4
Standard of Living	5
Median Household Income	6
Adult Poverty Rates	7
Child Poverty Rates	8
Homelessness	9
Local Economy	10
Unemployment Rate	
Housing Market	
Fiscal Health	13
Local Tax Collection	
Federal and State Support	
Community Services	
Emergency Personnel – Budgeted	
Emergency Personnel – Actual	19
CARE (Career Awareness Related Experience) Program	20
Utility Assistance Program	
Sustainability	
Community Greenhouse Gas Emissions	23
Community Greenhouse Gas Emissions by Sector	24
References	25

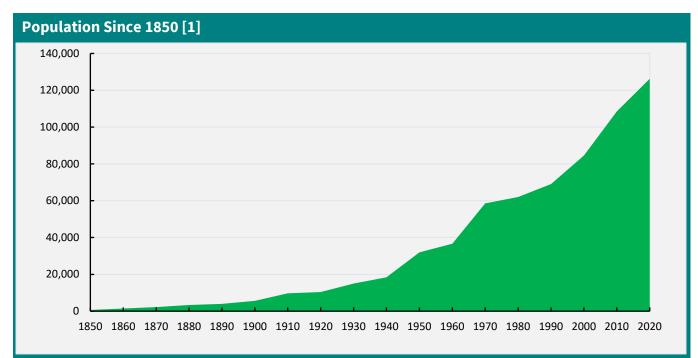


DEMOGRAPHICS

Demographics are statistical data that describe the characteristics of a population, including its size, density, racial composition, and age distribution. Population and density refer to the total number of people in a given area and how densely they are concentrated. Population by race categorizes individuals based on racial or ethnic identity, while population by age breaks down the population into various age groups, helping to understand the age structure of a community.

Demographics

Population and Density



Population and Density [2] [3]						
Year	Estimated Population*	Square Miles	Population Density			
2019	123,204	67	1,847			
2020	126,254	67	1,891			
2021	126,850	66	1,909			
2022	128,545	68	1,897			
2023	129,330	68	1,901			

*Total population for 2023 is sourced from the Population Estimates Program (PEP), while all other years are sourced from the American Community Survey (ACS).



The Population Estimates Program (PEP) projects total populations outward from the most recent Census count based on the known characteristics of a community. The American Community Survey (ACS) combines PEP estimates with regularly collected survey data to estimate various socioeconomic characteristics of a community. The total population can differ between them depending on the timing of the surveys administered.

Analysis

The first recorded population of Columbia, MO comes from the 1850 Census, which counted 651 Columbia residents. In 2023, the population in Columbia grew to about 129,330 people. From 2019-2023, Columbia's population has increased by 5.0%, for an average of 1.0% annually.

Population density is defined as the number of people per square mile of land area. A higher population density allows for closer proximity to community services such as fire, police, parks, and street maintenance. In the past 5 years, population density in Columbia has increased by 3.0%, with population and square mileage both increasing.

Demographics

Population by Race

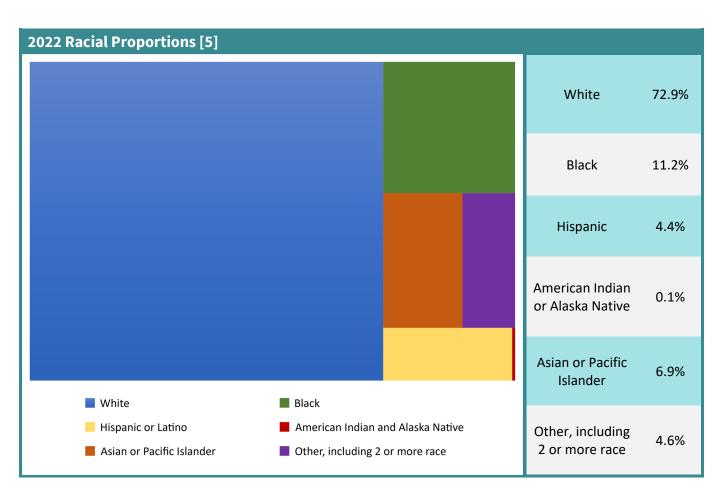
Diversity [4]

The 2020 Census diversity index measures the likelihood of two randomly selected individuals from the community being from different racial categories. Columbia's Diversity Index is 47.2%, 6.4% higher than Missouri's Diversity Index. The national Diversity Index in 2020 was 61.1%, making Columbia 13.9% less diverse than the nation as a whole.

Population by Race [5][17]

Year	Estimated Population	White	Black	Other
2018	123,182	97,048	11,041	15,093
2019	123,204	96,029	13,022	14,153
2020*	126,254	91,516	15,038	19,700
2021	126,850	93,859	15,892	17,099
2022	128,545	95,666	14,402	18,477





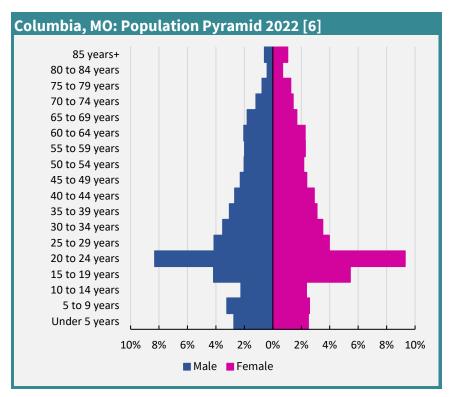
*The Census typically does not release ACS data until the fall, so some sections of this report will only include analysis through 2022.

Demographics

Population by Age

Population by Age

Due to the presence of three major educational institutions in Columbia, the population is overwhelmingly college-aged. However, the rest of the population pyramid shows a growing number of young adults, especially young women.



Minor and Elderly Population [6]						
Year	Percent of Population Age 17 and Under	Percent of Population Age 65 and Older	Total Percent of Population Age 17 and Under or Age 65 and Older			
2018	18.0%	10.2%	28.2%			
2019	18.5%	9.4%	27.9%			
2020	19.8%	10.7%	30.5%			
2021	19.2%	10.8%	30.0%			
2022	19.0%	11.1%	30.0%			

Analysis

People age 17 and under or 65 and older are typically communities with greater needs and reduced means to address those needs, so this metric communicates the needs of the community. From 2018-2022, the percentage of the population age 17 and under increased by 1.0%, while the percentage of the population age 65 and older increased by 0.9%. Collectively, these vulnerable populations increased by 1.8% over the period shown, demonstrating an increase in demand for social services targeted towards these groups.



STANDARD OF LIVING

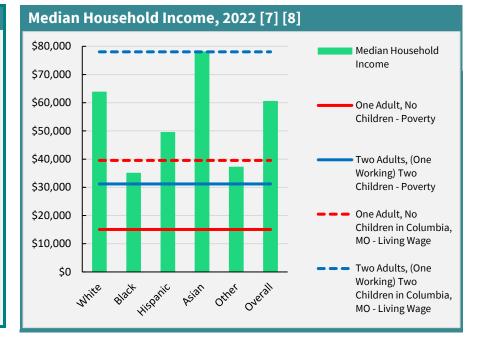
The standard of living refers to the level of wealth, comfort, and material goods available to a population. It is often assessed through indicators like median household income, which reflects the typical earnings of a household, and the living wage, which is the income necessary to meet basic needs. Poverty rates, both adult and child, measure the percentage of the population living below the poverty line, highlighting economic challenges. Homelessness rates indicate the prevalence of individuals without stable housing, providing a critical view of the lower end of the economic spectrum.

Median Household Income

Standards of Living

The poverty metrics used by MIT's Living Wage Calculator are based on the U.S. Department of Health and Human Services standardized guidelines for all 48 contiguous states.

The calculator adjusts these metrics using average prices of goods and services in mid-Missouri to determine the living wage for individuals in Columbia, providing a more specific measure of the income needed to thrive in this community.



Median Household Income [8] [9] **Median Household** Median Household Income Inflation Year White Black Gap Income (2018 Chained Dollars) \$49,277 2018 \$49,277 1.9% \$53,330 \$34,247 \$19,083 \$50,363 \$55,581 \$23,250 2019 \$51,276 1.5% \$32,331 2020 \$53,447 \$51,885 1.0% \$56,331 \$33,237 \$23,094 2021 \$57,463 \$53,251 5.1% \$59,814 \$37,958 \$21,856 2022 \$60,455 \$51,863 8.0% \$63,673 \$35,000 \$28,673

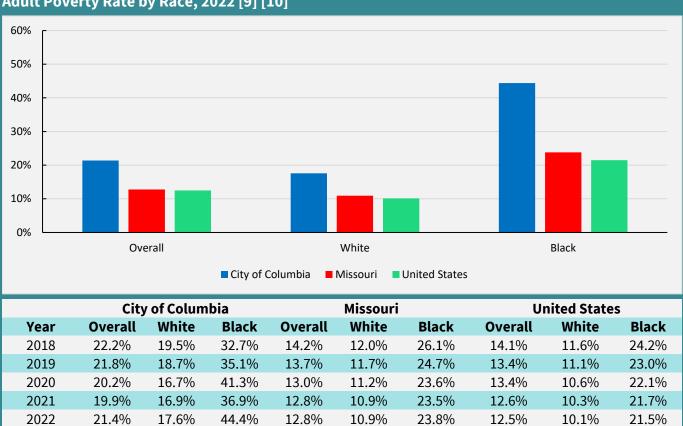
Analysis

Median household income increased by 22.7% from 2018 to 2022, with an average annual increase of 5.3%. During this time, the average annual inflation rate was 3.5%. In 2022, median household income in 2018 dollars decreased by nearly \$1,400, showing that inflation has begun to eclipse growth in wages. White median household income has increased by 19.4%, while Black median household income has increased by 2.2% from 2018-2022. The racial median household income gap has grown by 50.3% since 2018, a concerning trend. Additionally, Black median household income decreased by nearly \$3,000 from 2021 to 2022, exacerbating the racial disparities in these metrics.

Adult Poverty Rates

Poverty

As the level of poverty in a community increases, so do negative outcomes such as crime, disinvestment, and lower quality of education. Poverty is an important metric to track in a community because a significantly impoverished population often needs additional access to all areas of improvement: education, healthcare, economic advancement, and more.



Adult Poverty Rate by Race, 2022 [9] [10]

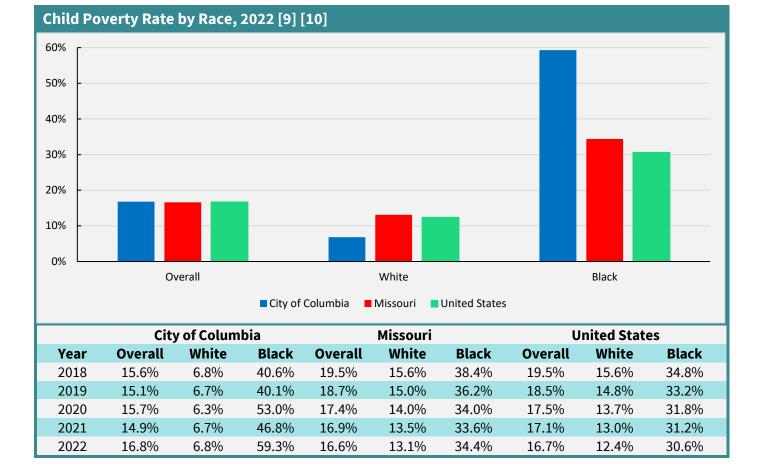
Analysis

The overall poverty rate for Columbia's residents has decreased 0.8% from 2018 to 2022. In the past, Columbia's poverty rate has been greater than the state of Missouri and the United States' poverty rates, and that trend has continued into 2022. Columbia's poverty rate is nearly nine percentage points higher than statewide and nationwide poverty rates. In Columbia, poverty among the white population has decreased by 1.9 percentage points, while poverty among the black population has increased by 11.7 percentage points.

Child Poverty Rates

Child Poverty

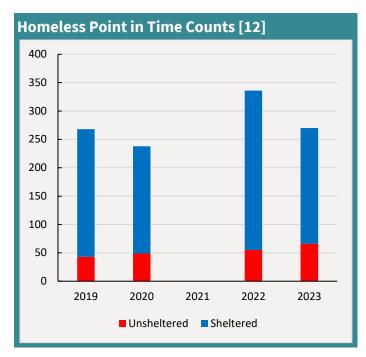
Similar to other forms of poverty, child poverty can have severe detrimental effects. These include behavioral and cognitive issues, higher rates of mental illness, and widening racial achievement gaps. It can also lead to higher incarceration rates upon entering adulthood, so there is a significant cost associated with high rates of child poverty. Supporting children growing up in poverty is essential to increasing community equity.



Analysis

The overall poverty rate for Columbia's children has increased by 1.2% from 2018-2022. The child poverty rate in Columbia is consistent with both Missouri and the United States, all at around 17%. While poverty among white children has hovered around 6.8% during the period shown, poverty among black children has increased by nearly 20%, a concerning trend. Columbia's poverty rate among white children is lower than both Missouri and the United States, but the poverty rate among black children is significantly higher, showing a lack of equity in outcomes for children in Columbia on the basis of race.

Homelessness



Tracking Homelessness [12]

The Missouri Balance of State (BoS) Continuum of Care (CoC) conducts a Point-In-Time Count throughout its 101 county geographic areas each year as required by the US Department of Housing and Urban Development (HUD). The count helps Missourians monitor trends in the homeless population and increases public awareness of homelessness.

In the last Point-In-Time Count, there were 323 persons found to be experiencing homelessness in Boone County.

Homelessness [12]

In 2024, the City of Columbia plans to spend at least \$1,044,435 on contracts for homeless services. This includes Turning Point, where people experiencing homelessness can shower and do laundry, and Room at the Inn, which was previously only open during the winter months but will now be open year-round.

Sheltered and Unsheltered Counts						
Year	Unsheltered	Sheltered	Total Homeless			
2019	43	225	268			
2020	49	189	238			
2021	-	-	-			
2022	55	281	336			
2023	66	204	270			

*The Point-In-Time Count was not conducted in 2021 due to the COVID-19 pandemic.



Point-in-time counts are conducted in the last 10 days of January and count the number of people experiencing homelessness on a single night. The homeless population likely fluctuates throughout the year, but point-in-time counts are the most reliable and consistent estimate of people experiencing homelessness in the United States. [11]



LOCAL ECONOMY

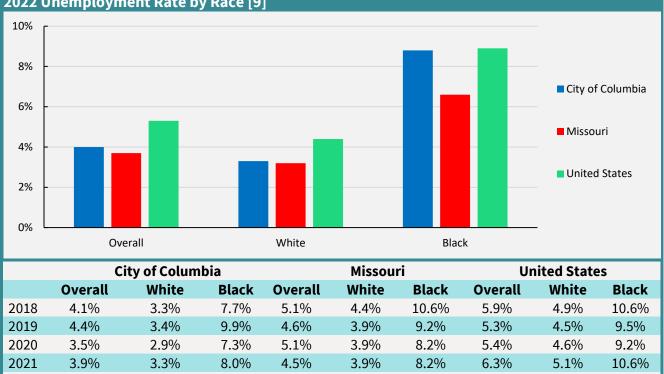
The local economy encompasses the economic activities and conditions within a specific area, often measured by key indicators such as the unemployment rate and the housing market. The unemployment rate reflects the percentage of the workforce that is actively seeking but unable to find employment, serving as a gauge of job availability and economic health. The housing market, including factors like home prices, availability, and sales trends, provides insight into the local real estate environment and overall economic stability.

Local Economy

Unemployment Rate

Unemployment [10]

According to the U.S. Bureau for Labor Statistics, unemployment is defined as people who "do not have a job, have actively looked for work in the prior 4 weeks, and are currently available for work." Therefore, the unemployed segment of the population is not just everyone who does not have a job, as it excludes those who are unable to work or are not currently seeking a job. High unemployment rates are correlated with higher poverty rates and other negative outcomes which require increased support from social services.



2022 Unemployment Rate by Race [9]

Analysis

4.0%

3.3%

8.8%

3.7%

2022

In 2022, Columbia had a slightly higher (0.3 percentage points) unemployment rate than the statewide unemployment rate, but a substantially lower unemployment rate than the national unemployment rate. This is due in part to the large number of jobs created by the education and healthcare workforce sectors in Columbia. Black unemployment in Columbia is 5.5 percentage points higher than white unemployment, more than double the white unemployment rate. This is similar to the racial gaps examined in the Standard of Living section above regarding median income and poverty rates.

3.2%

6.6%

5.3%

4.4%

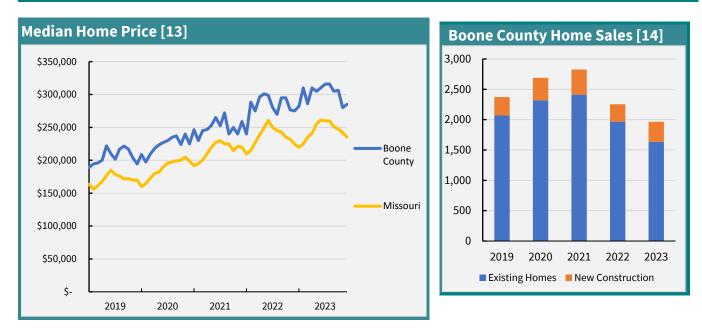
8.9%

Local Economy

Housing Market

The Housing Market [13] [14]

The housing market is one of the most important indicators of a community's economic well-being. In Boone County, median house prices have increased by 44.8% from 2018-2022, while total homes sold have decreased by 17.2% over the same time period. This decreasing supply of houses is leading to a substantial price increase for houses in Boone County.



Housing	g Market Data [14]		
Year	Median Price	Average Price	Homes Sold
2019	\$209,250	\$236,207	2,372
2020	\$225,000	\$256,986	2,689
2021	\$251,000	\$292,860	2,827
2022	\$287,250	\$328,319	2,254
2023	\$302,990	\$343,436	1,963

The Columbia Board of Realtors suggests some items to consider before purchasing a home. These include:



- Put the house in context of the neighborhood it is in (i.e. consider things like noise level and proximity to schools, parks, etc.)
- Make a list of top priorities and other items that are wanted but not necessarily needed.
 Start planning to get approved for a mortgage and do research on insurance before beginning the house hunting process. [12]



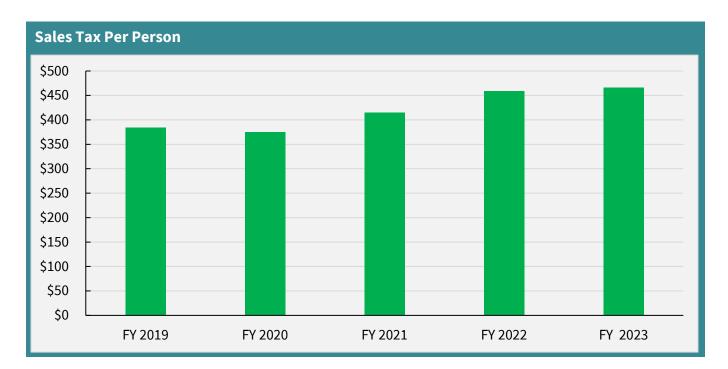
Fiscal health refers to the financial stability and sustainability of a local government, often measured by its revenue sources and financial support. Local tax collections, including sales tax, gasoline tax, and other levies, are primary sources of revenue that fund public services and infrastructure. Federal and state grants to the city provide additional financial support, enabling local governments to undertake projects and maintain services without solely relying on local tax revenue. Together, these factors indicate the city's ability to manage its finances and meet its obligations.

Fiscal Health

Local Tax Collection

Sales Tax

A general sales tax is levied on all persons selling tangible personal property or rendering taxable services on a retail basis within the City limits. The total sales tax paid to state, county, and city government in Columbia is 7.975%. Missouri imposes a 4.225% sales tax, Boone County an additional 1.750%, and the City of Columbia collects 2.000% of gross retail receipts. The City's sales tax collections accounted for 14.6% of total revenue for Columbia in FY 2023. From FY 2019 to FY 2023, sales tax revenue increased by nearly \$13 million or 27.5%, while the population increased by 5.0%. Sales tax collections per person have increased by \$82.20 or 21.4% over the period shown, due in part to the inflated post-pandemic cost of goods and services.



Sales Tax [3]			
Fiscal Year	Total Sales Tax	Population*	Sales Tax Per Person
2019	\$47,264,643	123,204	\$383.63
2020	\$47,278,467	126,254	\$374.47
2021	\$52,611,482	126,850	\$414.75
2022	\$58,955,232	128,555	\$458.60
2023	\$60,246,376	129,330	\$465.83

*Total population for 2023 is sourced from the Population Estimates Program (PEP), while all other years are sourced from the American Community Survey (ACS).

Fiscal Health

Local Tax Collection

Gasoline Tax

Gasoline taxes are dedicated funding sources as they provide funding for the construction and maintenance of roadways. For half of 2023, the motor fuel (gasoline) tax rate was \$0.220 per gallon, but on July 1st, 2023, the tax rate increased to \$0.245 per gallon. This rate will continue to increase until July 1, 2025, when the motor fuel tax rate will be \$0.295. That increase, combined with increasing gas prices in 2023, explains the nearly \$1 million increase in motor fuel tax revenue from 2022 to 2023. Over the period shown, motor fuel tax revenue has increased by around \$1.5 million or 51.2%, and per capita revenue has increased by \$10.48 or 44.0%.

Gasoline Tax Per Person						
Fiscal Year	Total Gasoline Tax Revenue	Population*	Gasoline Tax Per Person			
2019	\$2,934,503	123,204	\$23.82			
2020	\$2,766,311	126,254	\$21.91			
2021	\$2,899,920	126,850	\$22.86			
2022	\$3,439,866	128,555	\$26.76			
2023	\$4,436,183	129,330	\$34.30			

*Total population for 2023 is sourced from the Population Estimates Program (PEP), while all other years are sourced from the American Community Survey (ACS).

Hotel/Motel Tax

Hotel/Motel taxes are dedicated to promoting conventions, tourism, and economic development in the City. The City collects a hotel/motel tax at the rate of 5%. Currently, 20% of the tax is dedicated to planning and constructing airport terminal improvements. In previous iterations of the Community Trend Manual, this 20% was not included in the Total Hotel/Motel Tax figure, but all revenue is included in the table below. From 2019 to 2023, hotel/motel tax revenue increased by around \$610,000, or 17.9%. During this time period, the average tax per visitor has increased by \$0.93 or 20.7%.

Lodging Data [15]					
Fiscal Year	Occupancy Rate	Average Occupied Room per Night	Average Daily Rate	Average Tax per Visitor*	Total Hotel/Motel Tax
2019	57.5%	2,348	\$89.73	\$4.49	\$3,413,675
2020	40.5%	1,592	\$76.24	\$3.81	\$2,194,844
2021	56.0%	2,262	\$89.80	\$4.49	\$2,601,760
2022	61.2%	2,377	\$104.45	\$5.22	\$3,628,169
2023	59.6%	2,097	\$108.39	\$5.42	\$4,026,024

*Excludes visitors with Hotel/Motel tax exemption certificates.

Fiscal Health

Federal and State Support

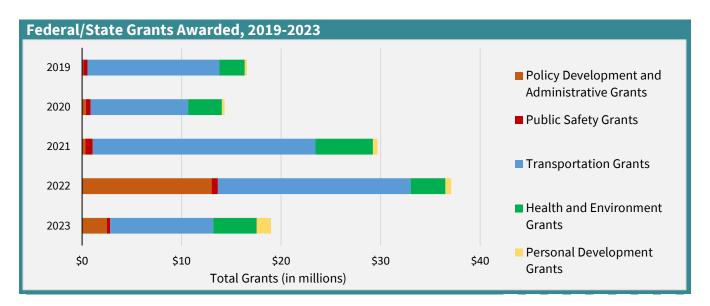
Federal and State Funding

Grant revenue included in this analysis comes from both the state and federal governments. State grants are focused on local issues such as health, transportation, public safety, or conservation. Federal grants include mass transit grants from the Department of Transportation, non-motorized grants, police grants, and economic stimulus grants. These government grants typically are awarded for a one- to three-year period.

Analysis

For the period shown, grant revenue increased by \$2.4 million or 14.6%. For the period in which the city was receiving federal funding in response to the COVID-19 pandemic, this source of revenue increased by nearly \$23 million. In 2023, the City saw a return to prepandemic levels of federal and state assistance, with grant revenue decreasing by over \$18 million, or 48.8%, from 2022. The majority of grants received by the City in 2023 were for transportation purposes. Even though the total amount of grant money decreased in 2023, both Health and Environment Grants and Personal Development Grants increased by nearly \$1 million each last year.

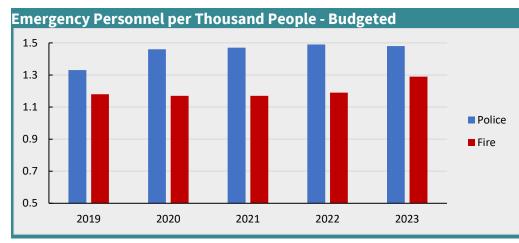
Feder	Federal/State Government Funding							
Fiscal Year	Policy Development and Administrative Grants	Public Safety Grants	Transportation Grants	Health and Environment Grants	Personal Development Grants	Total Grants		
2019	\$129,117	\$415,370	\$13,259,416	\$2,544,505	\$205,061	\$16,553,469		
2020	\$376,836	\$485,184	\$9,789,115	\$3,401,950	\$272,146	\$14,325,231		
2021	\$332,098	\$742,228	\$22,383,592	\$5,761,800	\$475,984	\$29,695,702		
2022	\$13,025,047	\$613,564	\$19,382,085	\$3,481,037	\$588,566	\$37,090,299		
2023	\$2,496,779	\$328,315	\$10,345,377	\$4,377,799	\$1,427,296	\$18,975,566		





Community services encompass the essential support and resources provided to residents to enhance their quality of life and well-being. Emergency personnel, such as police and fire services, play a crucial role in ensuring public safety and responding to crises. Programs, like CARE (Career Awareness Related Experience), offer young people opportunities for skill development and employment, fostering their growth and future success. Utility assistance programs provide financial help to residents struggling to pay for basic utilities, ensuring access to essential services like electricity, water, and heating.

Emergency Personnel – Budgeted





The City uses the standard FTE (full-time equivalent) for quantifying full-time, part-time, and other types of employees.

Police Per Thousand						
Fiscal Year	Number of Sworn Officers	Number of Civilian Positions	Total Number of Employees	Sworn Officers Per Thousand Population	Change in Number of Positions	
2019	164	50	214	1.33	-	
2020	184	41	225	1.46	11	
2021	187	52	239	1.47	14	
2022	191	57	248	1.49	9	
2023	191	59	250	1.48	2	

Police Department

From 2019-2023, the number of budgeted sworn officers in the Columbia Police Department increased by 27.0 FTE. As Columbia's population has continued to expand, so has the number of budgeted police officers, which is why the ratio of budgeted positions to thousand residents has increased by 0.15 since 2019.

Fire Department

From 2019-2023, the number of Fire Department employees increased by 22.0 FTE. Employees include firefighters and support staff. The 14.0 FTE increase from 2022 to 2023 was necessary due to the opening of Fire Station No. 11 in September 2023, which led to a 0.11 increase in Fire Department employees per thousand residents from 2022 to 2023. This new fire station is located at 6909 Scott Blvd. and will serve southwest Columbia.

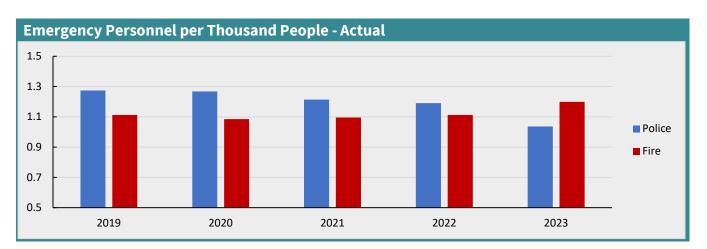
Firefighters per Thousand

Fiscal Year	Total Number of Employees	Employees Per Thousand Population	Change in Number of Positions
2019	145	1.18	-
2020	148	1.17	3
2021	148	1.17	-
2022	153	1.19	5
2023	167	1.29	14

Emergency Personnel – Actual

Actual Employment

Even though the City of Columbia budgets for a given number of police and fire positions each year, not all of these positions are filled. The actual employment metrics show how many emergency personnel positions were filled each year, and, especially in the case of police, can be different from the budgeted figures.



Police Officers per Thousand

Fiscal Year	Total Number of Sworn Officers	Sworn Officers Per Thousand Population	Change in Number of Positions
2019	157	1.27	-
2020	160	1.27	3
2021	154	1.21	-6
2022	153	1.19	-1
2023	134	1.04	-21

Police Department

From 2019-2023, the actual number of sworn officers in the Columbia Police Department decreased by 23. Due to this decline in officers, the ratio of sworn officers to thousand residents has decreased by 0.23 in the last 5 years.

Fire Department

From 2019-2023, the actual number of Columbia Fire Department employees has increased by 18. The number of fire employees has grown with the population, causing a 0.09 increase in the ratio of employees to a thousand residents during this period.

Firefighters per Thousand

Fiscal Year	Total Number of Employees	Employees Per Thousand Population	Change in Number of Positions
2019	137	1.11	-
2020	137	1.09	-
2021	139	1.10	2
2022	143	1.11	4
2023	155	1.20	12

CARE Program

CARE Program Operations		
Fiscal Total Year Expenses Site		# of Work Site Partners
2019	\$496,233	86
2020	\$354,897	73
2021	\$396,774	84
2022	\$407,753	81
2023	\$508,879	81

CARE Program

The City of Columbia's Career Awareness Related Experience (CARE) program hires 14-20-year-olds who live in the City and/or attend a Columbia school and places them in local businesses. The trainees gain much-needed real-world handson work experience while getting paid. CARE, which is administered through the City's Parks and Recreation Department, pays the trainees' wages in full. CARE's goals are for Columbia's youth to be ready to enter the workforce and become productive, self-sufficient citizens.

CARE Program Applications and Participation Statistics

Fiscal Year	Number of Applicants	# Applicants Placed	Percent Placed	% Minority Applicant	# Completed Program	% Completed Program
2019	567	184	32%	58%	180	98%
2020	332	144	43%	56%	143	99%
2021	438	154	35%	56%	152	99%
2022	250	136	54%	51%	136	100%
2023	357	129	36%	56%	125	97%

Analysis

Of the applicants that apply, the CARE program has only had enough funding to place less than half of the applicants most summers. FY 2020 expenses decreased due to budget cuts, a reduction in CARE trainees, and the elimination of the CARE Art Gallery Summer program. In FY 2021, expenses increased due to an influx of additional CARE trainees. The CARE Program is impacted more by minimum wage increases than any other General Fund program because over 60% of its total budget is for part-time temporary staff members. Every time the minimum wage goes up, the pay for CARE's trainees, interns, and job coaches increases as well. Missouri's minimum wage has increased from \$8.60 per hour in 2019 to \$12.00 per hour in 2023, which explains why fewer applicants were placed this year, even though the program had a funding increase of over \$100,000. Additionally, there were over 100 more applicants and 7 fewer applicants placed from 2022 to 2023, which led to a significant decrease in the percentage of applicants placed in 2023.

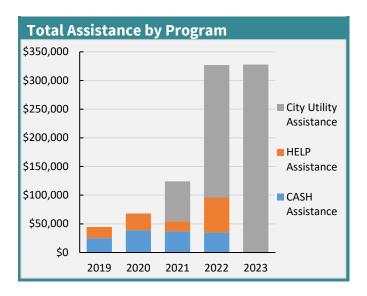
Utility Assistance Program

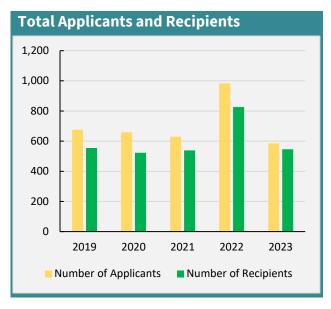
Utility Assistance Program

The City of Columbia offers utility assistance for seniors, persons with disabilities, and families with children aged 18 and younger who are at or below 200% of the federal poverty level. Prior to 2021, these services were primarily funded by donations to CASH (Citizens Assisting Seniors and Handicapped) and HELP (Heat Energy and Light Program). In FY 2021, the City Utility Assistance Program was developed, using contributions from the City general revenue fund. The Utility Assistance program provides the same services and has the same eligibility while affording more flexibility in implementation. As a result, the CASH and HELP programs have been eliminated, and donations now go directly to the City Utility Assistance Program. Total funding has increased by \$283,326 from 2019 to 2023, due in part to a Council-approved \$300,000 annual transfer from the general revenue fund, which led to disbursements in both 2022 and 2023.

Utility Assistance

Fiscal Year	Number of Applicants	Number of Recipients	CASH Assistance	HELP Assistance	City Utility Assistance	Total Assistance
2019	676	555	\$25,154	\$19,420	-	\$44,574
2020	659	523	\$39,008	\$28,912	-	\$67,920
2021	629	539	\$36,924	\$17,503	\$69,712	\$124,140
2022	983	826	\$34,747	\$61,274	\$230,988	\$327,009
2023	585	546	-	-	\$327,900	\$327,900







Sustainability focuses on the long-term health of the environment and community by addressing and reducing environmental impacts. Total community greenhouse gas emissions are measured from sources like residential energy use, transportation, and general waste, all contributing to the local carbon footprint. The Climate Action & Adaptation Plan (CAAP) outlines strategies to reduce these emissions, aiming to mitigate climate change by promoting energy efficiency, reducing vehicle emissions, and managing waste more sustainably.

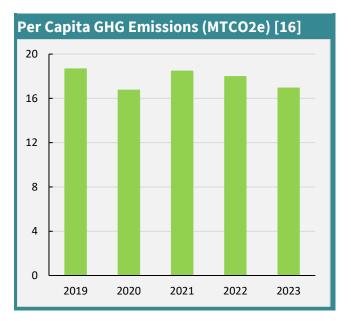
Sustainability

Community Greenhouse Gas Emissions

Total GHG Emissions [16]

The total community greenhouse gas (GHG) emissions of a community are comprised of residential, commercial, and industrial energy use as well as transportation, solid waste, wastewater, and process and fugitive emissions from natural gas within Columbia city limits. Emissions are measured in metric tons or CO2 equivalent (MTCO2e). The City of Columbia's Climate Action and Adaptation Plan (CAAP) outlines goals to reduce community greenhouse gas emissions to 1.5 million MTCO2e by 2035 and under 477,000 MTCO2e by 2050.

Per capita emissions are used to measure changes in emissions in relation to population. Factors such as improved energy efficiency in buildings, increased supply of renewable energy, and low-emission transportation vehicles can decrease per capita emissions. As Columbia's population grows, per capita emissions will need to decrease to achieve the emissions reduction goals outlined in the CAAP.



GHG Emissions (MTCO2e) [16]			
Year	Total Community GHG Emissions	Per Capita Emissions	
2019	2,299,713	18.67	
2020	2,114,303	16.75	
2021	2,341,420	18.46	
2022	2,308,872	17.97	
2023	2,189,333	16.93	

Analysis [16]

GHG emissions are influenced by changes in weather (e.g., colder winters, hotter summers), energy efficiency, and human behavior. Total community emissions fell by 4.8% over the period shown. With the population steadily increasing over the past 5 years, this has led to a 1.74 MTCO2e decrease in per capita GHG emissions. Per capita GHG emissions in 2023 nearly returned to 2020 levels, which were significantly lower due to decreased transportation during the COVID-19 pandemic. This trend shows Columbia's increasingly efficient use of energy over the last two years as the population grows.

Sustainability

Community Greenhouse Gas Emissions by Sector

GHG Emissions by Sector [16]

The residential energy, transportation, and waste sectors are all directly influenced by population size. Per capita emissions in these sectors are used to understand how emissions per sector are changing in relation to population changes. For each sector, the CAAP outlines plans and goals to reduce emissions. Successful implementation of the CAAP will decrease overall and per capita emissions in each of these sectors over time.

Per Cap	Per Capita GHG Emissions by Sector (MTCO2e) [16]				
Year	Per Capita Residential Energy Emissions	Per Capita Transportation Emissions	Per Capita Waste Emissions		
2019	4.52	5.18	0.27		
2020	4.44	3.69	0.34		
2021	4.66	4.64	0.32		
2022	4.47	4.75	0.25		
2023	4.01	4.79	0.31		

Analysis [16]

The residential energy sector represents emissions from natural gas and electricity use in Columbia homes. To reduce energy use in this sector, renewable energy generation must increase, and building energy efficiency must be improved. From 2019 to 2023, residential energy emissions per capita fell by 11.3%.

The transportation sector includes emissions from vehicles traveling within Columbia city limits. Transitioning to lower-emission vehicles, increased use of public transportation, and improving active transportation infrastructure are all methods to decrease this form of emissions. From 2019 to 2023, transportation emissions per capita decreased by 7.5%.

Waste emissions in the city of Columbia are generated from solid waste decomposition in landfills and wastewater processing. The active cells at the City of Columbia Sanitary Landfill are bioreactors, meaning they are designed and managed to decompose and stabilize the waste quickly. This also produces methane gas at a faster rate, some of which is used to generate electricity at the landfill site. Per capita waste sector emissions have remained at around 0.3 MTCO2e per resident for the last 5 years.

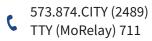
References

Sour	ces					
[1]	Missouri Population (All Incorporated Places)					
	https://mcdc.missouri.edu/population-estimates/historical/cities1900-1990.pdf					
[2]	Annexation History - City of Columbia					
	https://www.como.gov/Maps/documents/Annexation_History_current.pdf					
[3]	Quick Facts - Columbia City, Missouri; Missouri					
	ttps://www.census.gov/quickfacts/fact/table/columbiacitymissouri,MO/PST045221					
[4]	Exploring the Racial and Ethnic Diversity of Various Age Groups					
	https://www.census.gov/newsroom/blogs/random-samplings/2023/09/exploring-diversity.html					
[5]	US Census Bureau - American Community Survey Five-Year Estimates: Demographic and Housing Estimates					
	https://data.census.gov/table/ACSDP5Y2022.DP05?q=population&g=160XX00US2915670					
[6]	US Census Bureau - American Community Survey Five-Year Estimates: Age and Sex					
	https://data.census.gov/table/ACSDP5Y2022.DP05?q=population&g=160XX00US2915670					
[7]	Massachusetts Institute of Technology - Living Wage Calculation for Columbia, MO					
	https://livingwage.mit.edu/metros/17860					
[8]	2022 Poverty Guidelines: 48 Contiguous States					
	https://aspe.hhs.gov/sites/default/files/documents/4b515876c4674466423975826ac57583/Guidelines- 2022.pdf					
[9]	US Census Bureau - American Community Survey Five-Year Estimates: Poverty Status in the Past 12 Months					
	https://data.census.gov/table/ACSST5Y2022.S1701?q=poverty&g=160XX00US2915670					
[10]	US Census Bureau - American Community Survey Five-Year Estimates: Poverty Status in the Past 12 Months by Sex by Age					
	https://data.census.gov/table/ACSDT1Y2022.B17001?q=b17001&g=160XX00US2915670					
[11]	U.S. Bureau of Labor Statistics – How the Government Measures Unemployment					
	https://www.bls.gov/cps/cps_htgm.htm#unemployed					
[12]	Boone County Coalition to End Homelessness					
	https://www.bcceh.org/data					
[13]	St. Louis Fed - Housing Inventory: Median Listing Price in Boone County, MO					
	https://fred.stlouisfed.org/series/MEDLISPRI29019					
[14]	Columbia Board of Realtors - Statistics					
	https://www.midmohomefinder.com/page/Statistics					
[15]	Columbia Convention and Visitor's Bureau					
	https://www.visitcolumbiamo.com/					
[16]	Sustainability - City of Columbia					
	https://www.como.gov/sustainability/					
[17]	US Census Bureau - American Community Survey One-Year Estimate https://data.census.gov/table					



701 East Broadway, P.O. Box 6015 Columbia, MO 65205-6015

CITY OF COLUMBIA, MISSOURI - COMMUNITY TREND MANUAL REPORT 2023



City of Columbia, Mo. Government

f



