



MEMORANDUM

TO: Mayor and Council Members

FROM: Zach Baumer, Interim Chief Sustainability Officer 

DATE: September 19, 2023

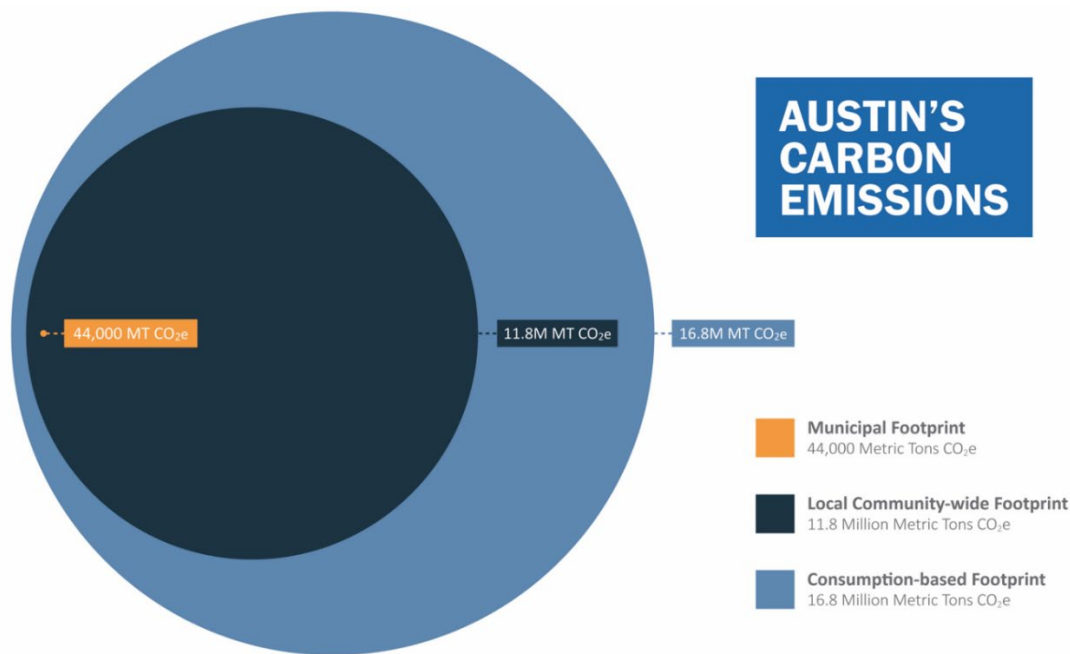
SUBJECT: **20210930-110: EPA Grant and Carbon Footprint Update**

[Item 96](#) on the September 21, 2023, Council Agenda authorizes the acceptance of a \$1,000,000 U.S. Environmental Protection Agency grant to lead an effort to develop and implement a regional plan for reducing greenhouse gas emissions and other harmful air pollution. Through a consensus-based decision-making process, regional partners have agreed that the City of Austin will lead and manage this program. The program will lead towards the delivery of a Priority Climate Action Plan for the region in 2024, a Comprehensive Climate Action Plan for the region in 2025, and a Status Report in 2027. This program presents an excellent opportunity to engage our region in climate planning and implementation as well as supports the Austin Climate Equity Plan's overarching objective of regional collaboration.

Background

In September 2021, the Austin City Council adopted the [Austin Climate Equity Plan](#) with the ambitious goal for our city to achieve net-zero community-wide greenhouse gas emissions by 2040. The Office of Sustainability continues to track progress toward our net-zero goal by annually calculating the carbon footprint of our municipal operations as well as our community's carbon footprint.

The Office of Sustainability also commissioned a study on consumption-based emissions in our community. Instead of only accounting for the emissions produced locally in Austin, this new consumption-based inventory calculates the climate impact associated with the production and distribution of all the goods and services consumed by Austinites. This approach to emissions tracking more fully captures the full climate impact of our lives by recognizing that the global supply chains for products and services often involve emissions produced in other cities, states, or countries.

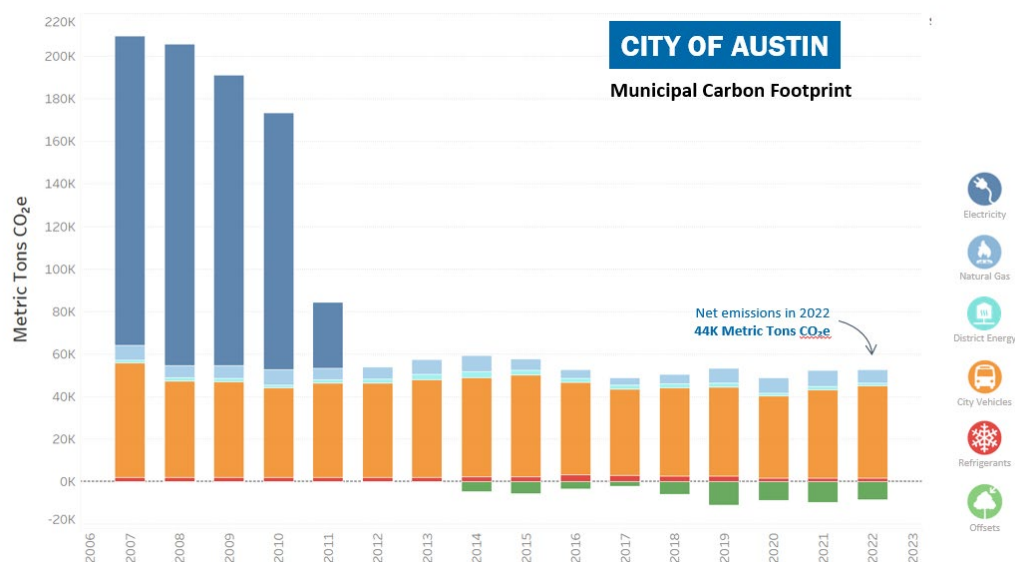


When used together, traditional and consumption-based inventories can offer a clearer picture of our community's carbon footprint and a more comprehensive understanding of where our emissions are coming from.

Summary of Austin's Carbon Emissions

- **The City of Austin Municipal Footprint:** Accounts for greenhouse gas emissions released by the day-to-day operations of the City government, like our fleet vehicles and the energy used in our buildings.
- **The local Community-wide Footprint:** Includes emissions that occur locally here in Austin across the community, including transportation, energy in buildings, and waste. This footprint tracks progress towards the Climate Equity Plan's net-zero by 2040 target.
- **The new Consumption-based Footprint:** Estimates emissions from the production and delivery of the goods and services consumed by everyone in Austin. Emissions may not occur in Austin but can come from anywhere in the world, such as a factory overseas.

City of Austin Municipal Carbon Footprint

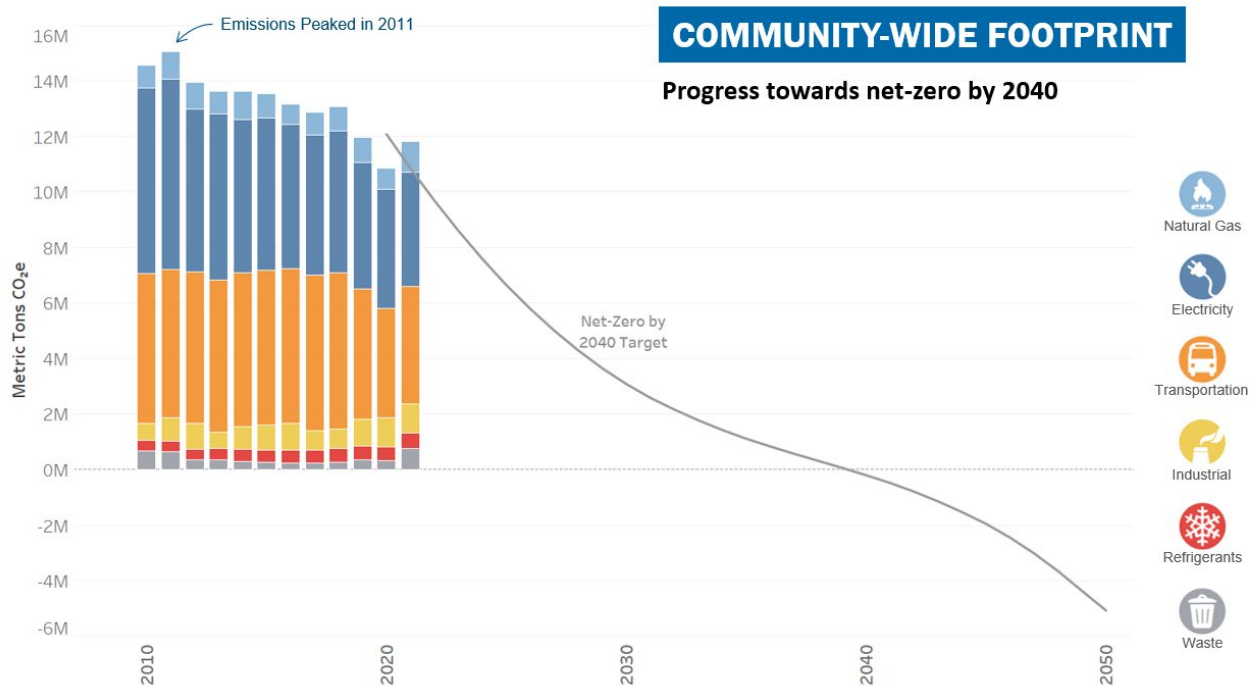


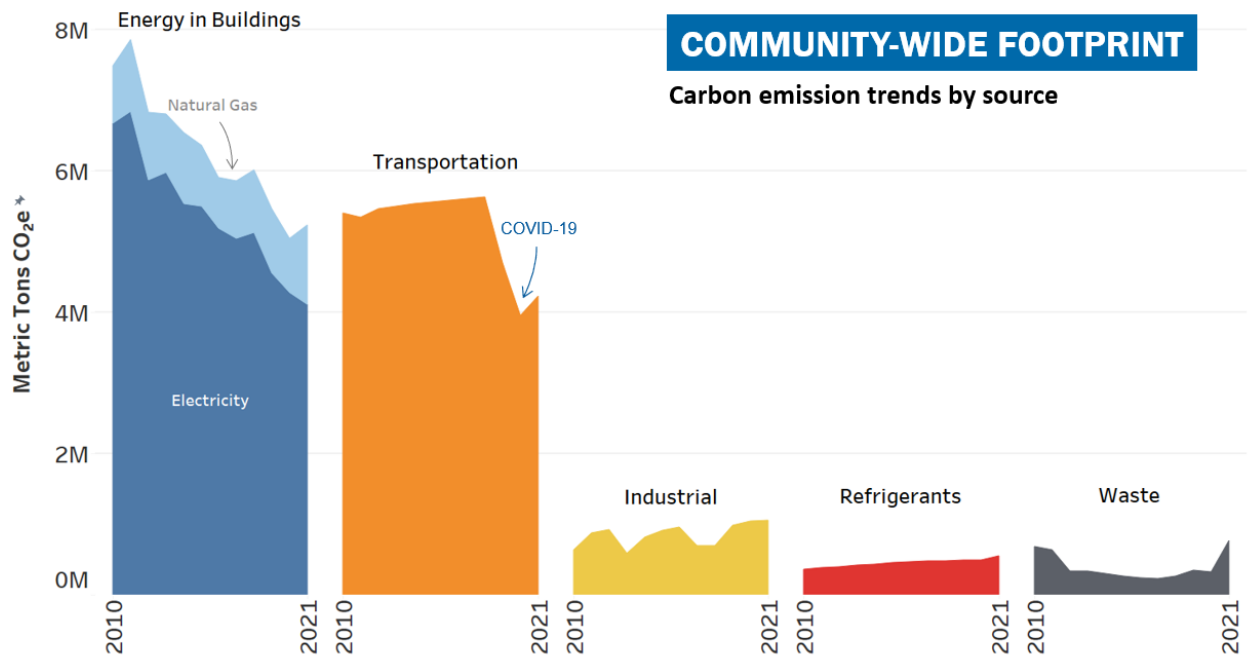
In 2022, the City of Austin Municipal Carbon Footprint was about 44,000 metric tons (MT). That includes 53,000 MT of direct emissions minus 9,000 MT of offsets from local tree plantings and other carbon offsets. These offsets are primarily purchased by the Aviation Department and the Austin Convention Center to demonstrate their environmental stewardship to visitors.

Since we began measuring it in 2007, the City’s operational footprint has decreased by almost 80%, mostly due to the use of 100% renewable GreenChoice electricity at all City of Austin facilities. GreenChoice electricity has prevented an estimated 1.7 million MT of emissions from City buildings since 2007. Today, the largest sources of emissions are gasoline and diesel used in the City of Austin vehicle fleet and natural gas used in our buildings. We can further reduce these emissions by transitioning fleet vehicles to electric and continuing to decarbonize our buildings.

In 2007, the Austin City Council adopted [Resolution No. 20070215-023](#), setting the goal of “making all City fleets, facilities, and operations carbon neutral by 2020.” Over the past 16 years, we have made significant progress, dramatically reducing our emissions, but are not currently carbon neutral. Most organizations that claim carbon neutrality are for-profit businesses that focus on achieving it for reputational value through buying external carbon offsets. City management has prioritized directing our resources toward initiatives that have direct, tangible benefits for Austin residents rather than spending large sums on offsets from outside our region. Our journey towards carbon neutrality continues as we take action to reduce emissions, monitor results, purchase some local offsets, and remain accountable to our stakeholders.

Local Community-wide Footprint





Austin’s local emissions come primarily from five areas: Electricity, Transportation, Industrial, Refrigerants, and Waste. On-road transportation and electricity used in buildings are our largest sources of emissions. But in the last 10 years, building emissions have fallen by nearly a third, even as Austin’s population grew by a third over the same timeframe. This reduction is mostly due to Austin Energy’s investment in renewable energy generation.

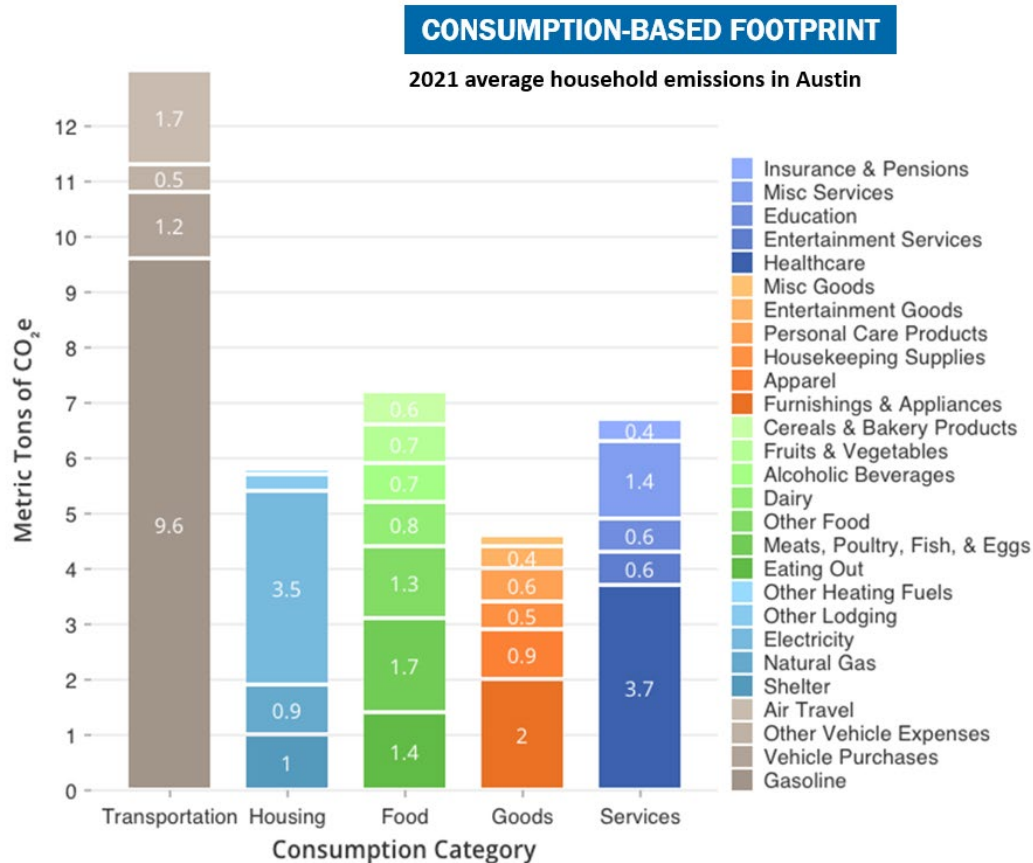
Transportation will soon become our number one source of local emissions since electricity in our city is becoming cleaner. Despite a brief decrease during the COVID-19 pandemic, transportation activity is returning to pre-2020 levels and could increase even more as the population in the Austin area continues to grow. City efforts to address these emissions include improving access to public transit, supporting safe walking and biking through infrastructure improvements, incentivizing electric bicycles and home charging for electric vehicles, and more.

Industrial emissions come primarily from Austin’s local semiconductor facilities. Semiconductor manufacturing processes can be extremely greenhouse gas intensive, and the Office of Sustainability works with local stakeholders to support the implementation of strategies to voluntarily reduce emissions in this sector.

Refrigerant emissions are a relatively new area of study, and Austin is a national leader in estimating the greenhouse gas impact of those emissions at the community scale. In the coming year, the Office of Sustainability will work with industry experts to develop a refrigerant management plan for City assets and begin working on strategies for community-wide mitigation.

Emissions from waste in Austin come from solid waste in our local landfills and wastewater treatment. Despite some fluctuations, these emissions are estimated to be relatively stable, thanks to methane capture procedures in place at our landfills and wastewater treatment facilities.

Consumption-based Footprint



Austin’s new Consumption-based Footprint calculates the greenhouse gas emissions related to the consumption behavior of our entire community. The approach is similar to estimating the carbon footprint of an individual household but instead accounts for all households in Austin combined. The inventory considers emissions from the production and delivery of the goods and services purchased and consumed by Austinites, even though those items may have been produced in different parts of the world.

This type of inventory is created by considering various local factors like income levels and vehicle ownership which influence the types and amounts of goods and services people consume. It aims to understand the environmental impact of Austin’s consumption patterns and how they contribute to global greenhouse gas emissions. The graph on page 4 provides an overview of Austin’s average per-household emissions.

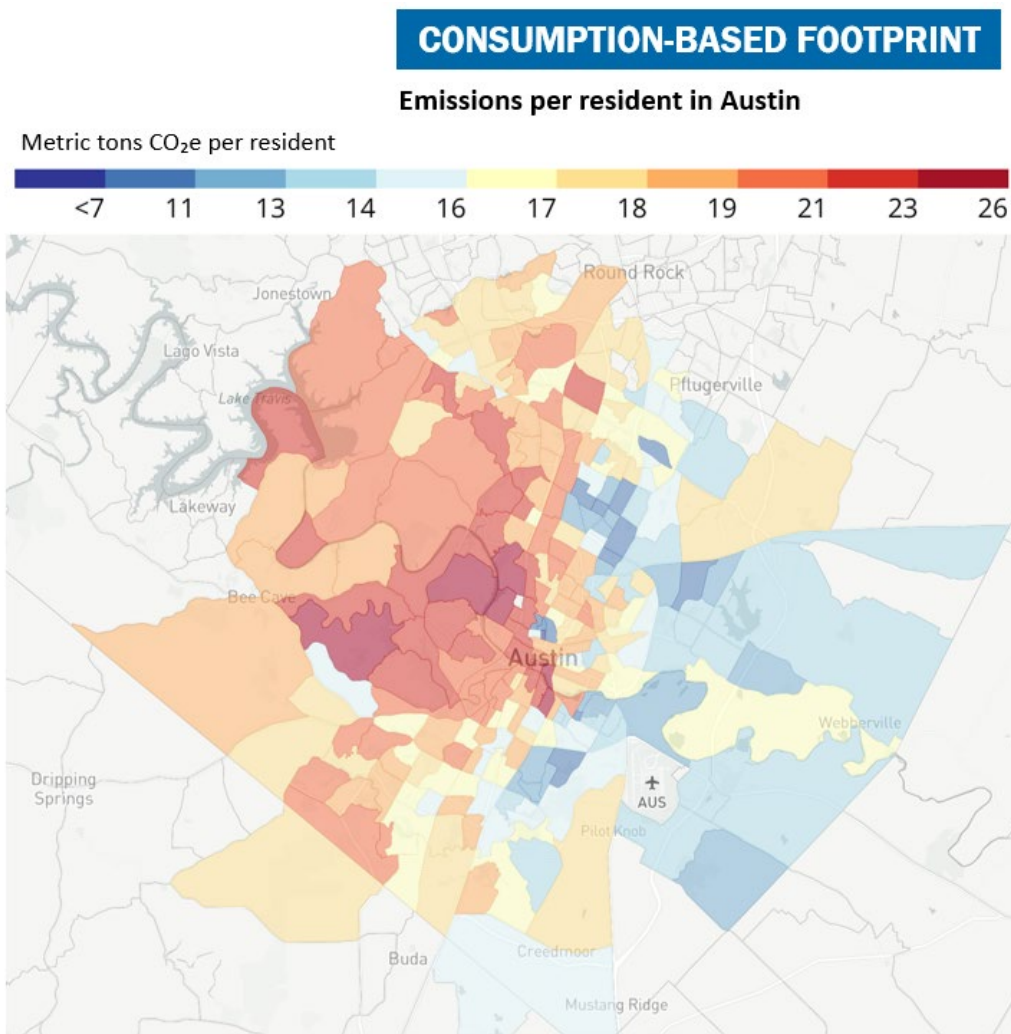
Since 2007, the average household consumption-based emissions in Austin have steadily trended downward. This is caused by a number of factors, like the decarbonization of our electricity. Additionally, over the last decade, the average home size has decreased due to the number of multi-family housing units that have been built. Smaller homes have led to fewer occupants per household, which has led to fewer vehicles per household.

The average household in Austin produced about 37 metric tons (MT) of carbon emissions from their purchasing and consumption patterns in 2021. This means that our city, with about 450,000 households, produced a total of 16.8 million MT of consumption-based emissions. The three biggest categories of emissions in Austin are transportation, food, and services.

- **Transportation** is the largest source of emissions in Austin, accounting for one-third of total emissions. This is similar to the traditional community-wide carbon footprint. The majority of these emissions come from gasoline consumption.
- **Food production and distribution** is the second-largest source of emissions in Austin, accounting for one-fifth of total emissions.
- **The services category** accounts for about one-fifth of all emissions in Austin. The biggest contributor to services emissions is healthcare.

Other notable takeaways:

- Emissions from the “Housing” sector in Austin are 23% lower than the national average, mostly due to the low-carbon electricity provided by Austin Energy.
- Air travel is a smaller source of emissions in Austin, accounting for 4.7% of total emissions. However, air travel emissions can be significant for individual households, and they vary depending on income.



The Consumption-based Footprint approach uses detailed local demographic data to estimate emissions geographically throughout the community. Above is a snapshot map of Austin’s “Emissions per resident”. Historic land use plans and the resulting built environment today have major effects on the household characteristics most closely linked to consumption-based emissions. These characteristics include income, vehicles per household, rooms per household, and ownership of large, detached, single-family homes with

yards and setbacks. A deeper discussion of the correlation between demographics and emission within the City can be found in the [City of Austin 2021 Consumption-Based Emissions Inventory](#).

Next Steps

The new Carbon Footprint information is [available on our website](#). In the coming months, Office of Sustainability staff will present information on the Consumption-based Footprint to City Boards and Commissions for further discussion of the results and next steps.

For information about the implementation status of all 74 strategies in the Austin Climate Equity Plan, visit the [Climate Equity Plan Implementation Dashboard](#). Staff are working with department representatives and partner organizations to update information in this dashboard, which will be completed later this year.

If you have any questions regarding the information included in this memo, please contact Zach Baumer, Interim Chief Sustainability Officer, at Zach.Baumer@austintexas.gov.

cc: Jesús Garza, Interim City Manager
Susana Carbajal, Chief of Staff