CHARLOTTESVILLE
Acting on Climate Together

Climate Action Plan

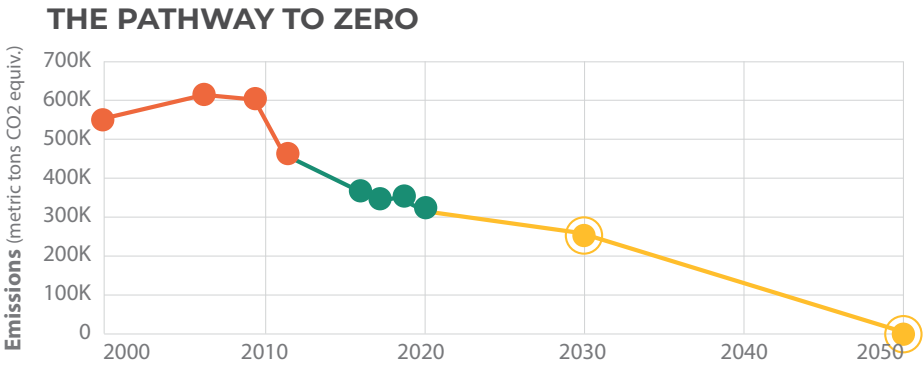
– SUMMARY –

Get the full plan: www.charlottesville.gov/climateplan

Climate Action for our Community

Climate change is an increasing concern for the world, and for our city. As the planet continues to warm, Charlottesville will face drastic shifts in temperatures, precipitation, and seasonal patterns.

In 2019, the City adopted updated greenhouse gas (GHG) emissions reduction goals of **45%** by **2030** and **carbon neutrality** by **2050**.

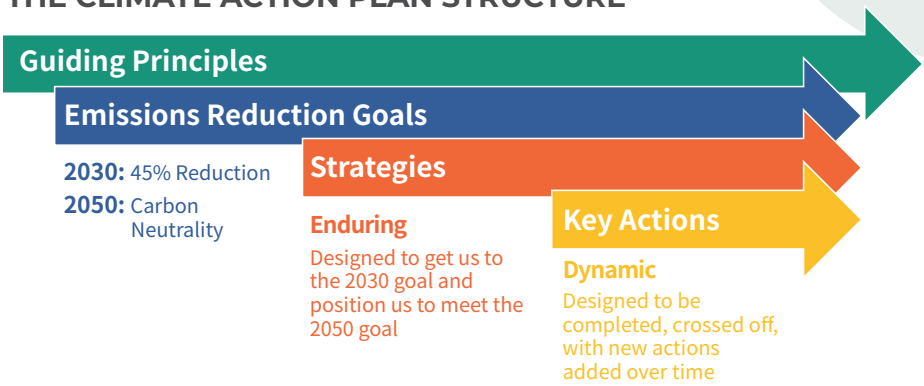


In 2023, Charlottesville developed and adopted a comprehensive community Climate Action Plan (CAP) that will serve as our guide.

This plan provides a framework for how our city can achieve our emissions reduction goals. It explains where emissions come from and presents strategies and actions we can take to reduce them.

The CAP contains a set of guiding principles that were developed with input from the community, including residents, businesses, nonprofit organizations, City boards and commissions, and subject matter experts.

THE CLIMATE ACTION PLAN STRUCTURE



Continuing to reduce emissions is a huge challenge, but it also presents our community with an opportunity. Working together to implement this plan can ultimately make Charlottesville a healthier, more resilient, and more equitable place to live.

ESCALATING COSTS
Significant investment will be needed whether or not Charlottesville pursues climate action. The impacts of climate-related events are increasing in severity, frequency, and cost.

This booklet is a summary overview of the Plan's main components and key takeaways. On the following pages, you'll find:

- **Highlights, statistics, and important details** about several of the CAP's key areas of emphasis
- **Helpful examples** of CAP goals, strategies, and potential solutions
- **CAP Facts** - interesting data and relevant information for residents to consider

Guiding Principles of the Climate Action Plan

Prioritize actions that **increase financial stability** of Charlottesville households and businesses

Ensure that the transition to a low carbon future is **effective, affordable, equitable and inclusive**

Develop pathways of meaningful (impactful & attainable) action in both **owner-occupied and rental properties**

Prioritize actions that have **intersectional benefits** with other climate and City priorities

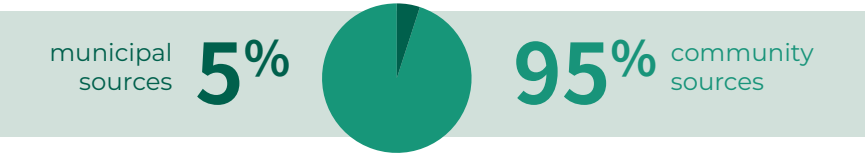
Take actions that **front-load reductions** to accelerate reaching adopted climate goals

Direct resources and programs to address **racial and community inequities**

Prioritize **financial incentives and assistance** to support low-income and mid-income households

Our Collective GHG Emissions

Greenhouse gases (GHGs) in Charlottesville come from both community and municipal sources.



The **community source** emissions come from four main sectors:

There are three primary methods for reducing emissions:

REDUCE	SWITCH	DRAWDOWN
the amount of energy used or emissions intensity	to a lower or zero carbon fuel or processing method	the amount of carbon in the air. Also called carbon removal

EMISSIONS BY SECTOR

Buildings & Energy

The energy we use to power, heat, and cool our homes and businesses makes up approximately two-thirds of Charlottesville's GHG emissions.

WHAT ARE OUR STRATEGIES?

- Move new construction closer to net-zero
- Increase energy efficiency and onsite renewable use in existing buildings
- Support the transition to a carbon-free energy supply

HOME / OFFICE IMPROVEMENTS
Consider installing solar at the same time. It can pay for itself more quickly than ever with **incentives, rebates, tax deductions,** and **reduced utility bills**.

WHAT ARE ADDITIONAL COMMUNITY BENEFITS?

- Energy efficiency means using less energy, and that means saving money on utility bills
- Burning fewer fossil fuels improves air quality, which in turn improves public health by reducing chronic and acute respiratory disease
- Energy efficient homes are more comfortable
- Multi-family homes and mixed-use developments are energy efficient, have reduced infrastructure and transportation costs, and increase access to services
- On-site power generation, when paired with battery storage, means increased energy security

ELECTRICITY
Electricity represents **more than two-thirds** of GHG emissions within Charlottesville's building and energy sectors.

WHAT ARE SOME EQUITY CONSIDERATIONS?

- Incorporate solar- and EV-readiness during the design and construction of affordable and low-income housing projects to avoid the increased cost of adding these technologies in the future.
- Many of the proposed renewable energy or increased energy efficiency options available require ownership of the building and/or systems where they might be installed.
- Renters – especially seniors and lower income citizens – may not be financially able or allowed to make changes to their homes or businesses without approval of property owners.

WHAT DOES THIS LOOK LIKE?

Energy efficient appliances & equipment

Weatherization

Solar panels

LED lighting

ELECTRIFICATION

BUILDINGS & ENERGY SECTOR GOALS

10% energy consumption reduction across all buildings by 2030

10% of Charlottesville's rooftop solar potential built out by 2030[1]

[1]In 2021, approximately 2.5% of rooftop potential was used. (CAP, pg 54)

EMISSIONS BY SECTOR

Transportation

Transportation contributes approximately 30% of Charlottesville's total community-wide greenhouse gas emissions. Almost all emissions from this sector come from using gasoline and diesel fuels to power vehicles.

WHAT ARE OUR STRATEGIES?

- Increase walking, biking, and transit use
- Support the use of high-efficiency and zero emissions vehicles
- Develop a community-wide EV charging network
- Encourage alternative travel behaviors

TRANSPORTATION
America's per-capita GHG **emissions are double** those of a person in Germany or Japan, largely due to our dependence on cars.[1] In Charlottesville, nearly **70% of us** commute to work alone.[2]

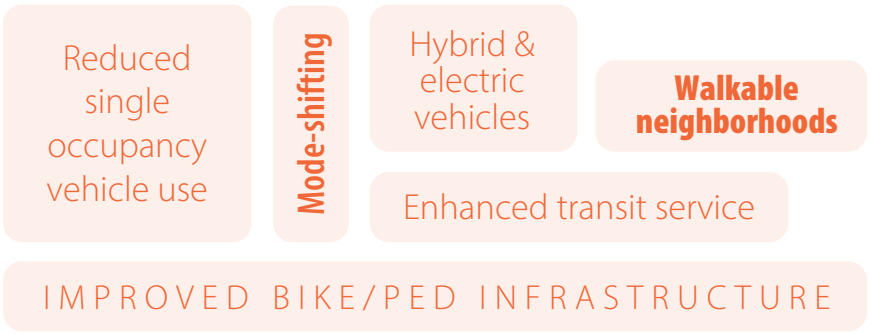
WHAT ARE ADDITIONAL COMMUNITY BENEFITS?

- Shifting away from travel in single-occupancy vehicles will help improve Charlottesville's air quality and reduce traffic congestion
- Encouraging safe, accessible public transit, bike, and pedestrian options will connect destinations in a secure, reliable manner
- Improving transportation options will increase access to healthy foods, recreation, jobs, and many important services
- Spending less money on fuel means more for other needs

WHAT ARE SOME EQUITY CONSIDERATIONS?

- Electric vehicles (EVs), once primarily used only by higher-income owners, are now more affordable, with pre-owned models available and tax credits provided to many buyers through the recently passed Inflation Reduction Act.
- Federal incentives, state level grants and partnerships for EVs and charging points can be utilized to help meet the growing need for more energy efficient transportation.
- Maintaining transit access for those who rely on public transportation will be important.
- EV charging infrastructure must be accessible and available throughout the community.
- When planning transit routes, access and connections to healthy food options must be considered.

WHAT DOES THIS LOOK LIKE?



TRANSPORTATION SECTOR GOALS

Increase transit ridership
Increase travel mode share
Increase access to EV charging for renters

[1]https://ourworldindata.org/co2-and-other-greenhouse-gas-emissions
[2]American Community Survey (ACS) 5-Year Estimates (2014-18)

Waste

Everything we put in our garbage bins ends up in the landfill. Once in the landfill, it breaks down, releasing methane and CO_2 – two greenhouse gases that are significant contributors to climate change.

Reducing the amount of waste that enters the landfill will have an immediate impact on greenhouse gas emissions. Ways to keep this waste out of the landfill include composting, reusing, and recycling.

In Charlottesville waste accounts for 5% of community emissions. 70% of this waste is inorganic material and 30% is organic matter. Inorganics include plastics, glass, metals, and other materials. Organics consist of yard waste, food scraps, and biodegradable food containers.

WASTE
More food is thrown away in the United States than any other country. **30-40% of our food** – about **80 billion pounds** – is thrown away each year.[1]

WHAT ARE OUR STRATEGIES?

- Develop a sustainable materials management platform
- Reduce food and other organic-based materials waste
- Divert organics from the landfill

WHAT ARE ADDITIONAL COMMUNITY BENEFITS?

- Reducing waste results in financial savings
- Composting organic waste creates material for healthy soils
- Systems that prevent food waste help increase food access

METHANE
Over a 20 year period, one ton of methane (e.g. from a landfill) has a **global warming potential** that is around **85 times greater** than carbon dioxide.[2]

WHAT ARE SOME EQUITY CONSIDERATIONS?

- Residents who do not have access to municipal recycling and composting facilities may benefit from expanded curbside pick up.
- Renters may not have landlord support or access to yard space to compost.
- Composting requires some knowledge and skills, as well as time.
- Expanded education services and curbside compost pick-up can help to alleviate these concerns.

WHAT DOES THIS LOOK LIKE?

Reduced food waste

UPCYCLING

COMPOSTING

REPAIR

Resource conservation

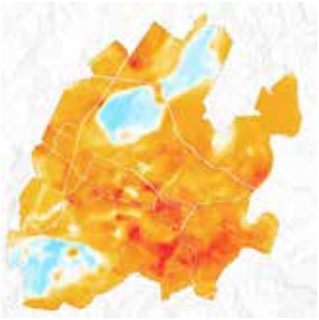
WASTE SECTOR GOALS

20% reduction in total waste by 2030
50% reduction in organic waste by 2030
90% total waste reduction by 2050

[1]EPA Facts and Figures on Materials, Waste, Recycling
[2]Methane Matters, NASA EarthObservatory

Nature-Based Solutions

Nature-based solutions involve increasing vegetation and tree cover within the city. This helps reduce GHG emissions, improve air quality, and provide shade. Areas with vegetation are cooler and more habitable, and shaded buildings require less energy to cool.



One of Charlottesville's top climate risks is extreme heat over longer durations of time. This is made worse by the urban heat island effect - when cities experience higher temperatures due to large areas of concrete or pavement and lack of tree cover.[1]

Tree cover and increased vegetation reduce both GHGs and the urban heat island effect. Charlottesville currently has less than 40% tree cover[2] and is on a decreasing trend.

WHAT ARE OUR STRATEGIES?

- Maintain a robust urban forest on City-owned land
- Encourage increased tree canopy on private land
- Integrate greenspaces and shade throughout the urban landscape

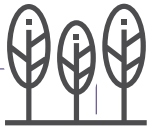
DRAWDOWN

On average one acre of forest can draw down (remove) **2.5 to 3 metric tons of CO_2** — as much as the amount emitted by two cars driven for 12 months.[3]

[1]https://www.charlottesville.gov/1469/Urban-Heat-Island-Mapping-Campaign
[2]State of the Urban Forest FY2021, Charlottesville Tree Commission
[3]sarpo.net/how-much-carbon-does-a-tree-absorb

WHAT ARE ADDITIONAL COMMUNITY BENEFITS?

- Preserving ecosystems improves biodiversity. For example, increased connectedness between green spaces allows for natural movement of animals, while preserving their natural habitat.
- Increasing tree canopy cover reduces building energy demand, improves air quality, shades bikeable, walkable, and transit-accessible routes, absorbs stormwater, and reduces erosion and flooding.
- Greenspaces help manage stormwater and can lessen urban flooding.



TREES
Planting the right tree in the right place can **improve survival** of the tree and **minimize upkeep**.

WHAT ARE SOME EQUITY CONSIDERATIONS?

- Older and less wealthy neighborhoods have noticeably fewer trees and greenspaces than other areas of Charlottesville.
- Residents have raised concerns about trees being close to their homes and potential costs for maintenance, damage from downed limbs, and roots impacting utility lines.
- Working with the community to understand their desires, their site, and how they tie into the constrained urban landscape will be key to progress.

WHAT DOES THIS LOOK LIKE?

Invasive species management

SHADE TREES

NATIVE HABITAT

Urban food gardens

Financing and Funding

Achieving carbon neutrality will require significant levels of investment. Charlottesville will need to access financing and funding beyond local government sources in order to achieve the scale and scope of action required to meet our climate goals.

SEVERAL TYPES OF FUNDING, EACH WITH PROS & CONS

- **Grants:** widely available, but funds are often limited and once spent are gone
- **Loans:** receive money quickly; but can come with stipulations, interest and limited availability
- **Revolving Loans:** an ongoing source of funding, often with lower interest rates; can require upfront capital
- **Power Purchase Agreements (PPAs):** provide energy to customers below market rate, typically for a fixed period of 10-25 years

WHAT ARE OUR STRATEGIES?

- Leverage outside funding sources
- Evaluate and improve processes for connecting residents to programs and financing
- Support innovative financing mechanisms to enable and leverage private investment

WHAT ARE ADDITIONAL COMMUNITY BENEFITS?

- Green financing programs can support community climate investments into the future
- Many emission reducing actions, once paid for, generate substantial cost savings
- Funding can help citizens purchase renewable energy and energy saving upgrades they could not otherwise afford

Low Hanging Fruit

Here are some suggestions of affordable actions everyone can take to help reach our goals.

- switch to LED lights
- carpool or take public transit
- reduce food waste
- plant a tree
- insulate & weatherize your home
- conserve water
- compost food scraps
- install energy efficient electrical appliances
- install solar panels
- switch tools and appliances to electric models
- advocate for climate-friendly policy at local, state, and federal levels

SIGN UP FOR OUR **CLIMATE ACTION NEWS FLASH**

1. Go to www.charlottesville.gov/list.aspx
2. Sign in with your email address
3. Look for the **News Flash** list
4. Select **Climate Action**

Climate Action Plan
– SUMMARY –

CHARLOTTESVILLE
Acting on Climate Together

Important next steps we are working on include collaborations, partnerships, and increased communication between the community, the City, and local and regional partners.

TOGETHER WE CAN ACHIEVE OUR GOALS

Review strategies and key concepts in this booklet

Sign up for announcements

Learn more at our website

This Plan and the actions flowing from it aim to engage and serve all residents regardless of race, age, gender, ability, income, sexual identity and expression, country of origin, neighborhood, religious affiliation, or other personal characteristics.

The full Climate Action Plan is available at **www.charlottesville.gov/climateplan**