

Climate Action & Resilience in Great Falls

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According to [climate opinion polls](#) conducted by George Mason University and Yale University in 2021, 73% of residents in the Metro DC region are worried about climate change.

The good news is that there's a lot of action and opportunity regionally to slow warming and adapt to a changing world, while creating healthier and more connected communities.

This resource will share information about policies and projects at the county level along with practical actions Great Falls residents can take. As initiatives, resources, and circumstances evolve, updated versions of this content will be published.

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How Climate Change is Impacting Great Falls and the Metro DC Region

- Climate change is [already impacting the DC region](#).
- Washington, DC is coming off its hottest decade on record.
- Flash floods are becoming more frequent as superstorms dump large amounts of water in a short period of time, flooding local streams. These floods can impact properties, disrupt commutes, and strand cars, especially in lower-lying and denser areas of Fairfax County and Washington, DC.
- Stronger storms have led to more tree damage, increasing power outages, safety risks, and clean-up costs for homeowners and HOAs in Great Falls.
- Fairfax County reports that a [single severe storm in 2019 cost Fairfax County taxpayers \\$14 million](#).
- Climate change is also impacting local ecosystems. The heat is warming the Potomac River, impacting wildlife. Unusually warm days in winter can cause a “false spring” where plants emerge too early, upsetting the normal sync of plant and animal cycles.

How the Changing Climate is Projected to Impact Us in the Future

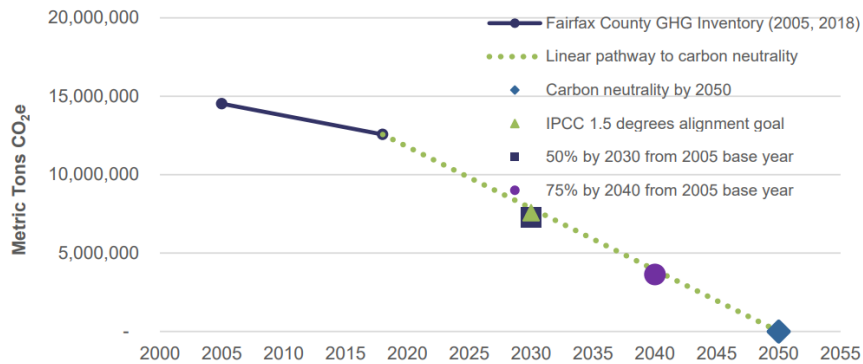
- The number of extremely hot days (heat index over 95 degrees F) in Washington, DC is projected to [increase from 30 days to 70-80 days by 2050 and 75-105 days by 2100](#).
- Local storms are expected to intensify and droughts will last longer.
- Sea levels are [rising more rapidly in the mid-Atlantic than elsewhere](#). Depending on how quickly we collectively lower greenhouse gas emissions, the Potomac River could rise 1-3 ft by 2050. With our current warming trajectory, a significant portion of neighborhoods, businesses, and national landmarks along the Potomac could be permanently underwater by 2100, within the lifetime of children born today.
- The natural landscape of Great Falls and the relatively low density of development helps to absorb rainwater. The tree canopy also provides a local cooling effect.
- However, development infill in Great Falls increases each year. And in more dense areas, like our village center and nearby towns where many of us work and shop like Reston, Herndon, Sterling, Tysons, and DC, heat and flooding are expected to be significantly worse as global temperatures rise.
- Health concerns include impacts from rising temperatures, such as heat strokes and weather conditions that are ideal for mosquitos and ticks (increasing the prevalence of Lyme disease).
- [Fairfax County](#) has published a [Climate Projections Report](#) and a [Climate Vulnerability and Risk Assessment](#) to help evaluate local vulnerability and guide county investments.
- These local impacts do not include disruptions to global supply chains, agricultural systems, migration, and emerging infectious diseases that will also impact Northern Virginia in the future as the planet warms.

Mitigation & Resilience Goals, Plans, and Initiatives at the County and Regional Level

Greenhouse Gas Reduction Goals

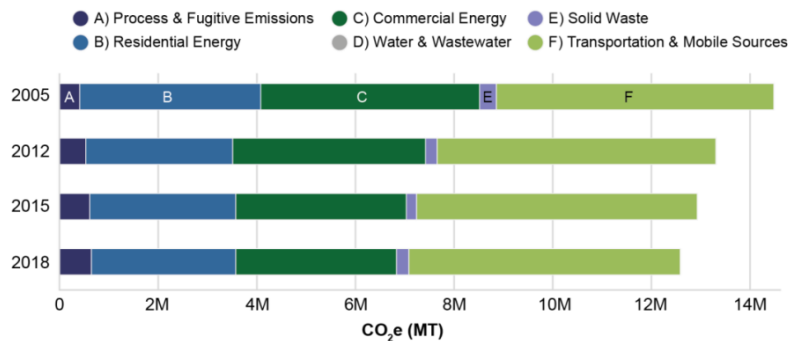
- Globally, we have already passed 1°C warming and are currently on track for over 3°C of warming by the end of the century. For the best shot of staying within a safer 1.5°C of warming, the Intergovernmental Panel on Climate Change (IPCC) has stated that we need to **half annual emissions by 2030, and achieve net zero emissions by 2050**.
- The [Metropolitan Washington Council of Governments](#) (with representatives from DC and the surrounding counties in Maryland and Virginia) has set climate action goals to reduce emissions as a region, in alignment with the IPCC recommendations.
- In Fairfax County, the county (working with local community groups) set goals in the [Community-wide Energy and Climate Action Plan \(CECAP\)](#) of **halving emissions (from 2005 levels) by 2030, cutting 75% by 2040, and achieving carbon neutrality by 2050**. (Image Source: CECAP)

Figure ES-3: Fairfax County GHG Emissions Reduction Goals



- Greenhouse gas emissions have been tracked in Fairfax County since 2005. The most recent data is from 2018. (Image Source: CECAP)

Figure ES-1: Fairfax County GHG Emissions by Activity Over Time



² CO₂ equivalent (CO₂e) is the basic unit of measure used to sum different GHGs by comparing their respective relative global warming effect to an index unit, namely the global warming effect of carbon dioxide.

³ 2018 is the most recent year for available data for a GHG inventory for Fairfax County.

- **93% of the emissions** created within the county are carbon dioxide from fuel combustion for **residential and commercial building energy and transportation**.
- 5% are process and fugitive emissions (ie. leaks) from sources like industrial facilities, natural gas distribution systems, water treatment, agriculture, refrigerants, and air conditioners.
- The remaining 2% are greenhouse gas emissions from municipal solid waste combustion (ie. trash incineration).
- Only 5% of the total emissions in the county are from county infrastructure and operations. The rest are from private residences, businesses, and other institutions.
- The good news is that from 2005-2018, Fairfax County's emissions dropped by 13%, even with a population growth of 15%. This result was mainly due to a less carbon-intensive electric grid, decreased commercial electricity intensity, and cleaner cars.
- Within Fairfax County, the Board of Supervisors approved the CECAP in 2021. In December 2022, the CECAP team presented a draft implementation plan to further outline their strategy.
- Achieving these goals requires aggressive, urgent action, but fortunately, most of the solutions we need are accessible and affordable today.

Fairfax County Government Climate & Energy Initiatives Relevant to Great Falls

- Plans & Metrics
 - [Community-wide Energy and Climate Action Plan \(CECAP\)](#) - Covers county emissions, reduction goals, and a range of strategies to reduce emissions
 - [Fairfax County CECAP Implementation Plan](#)- Lists county-run programs to address the CECAP goals
 - [Resilient Fairfax](#)- Describes local risks and vulnerabilities to help prioritize county climate adaptation projects
 - [Climate Action Dashboard](#) - Compiles current metrics related to overall greenhouse gas reductions in the county and progress on specific mitigation and adaptation strategies
- Educational campaigns
 - [Carbon-Free Fairfax](#)
- County projects that will address local emissions
 - Solar panels on schools
 - Electric school buses
 - Switching to non-fossil fuel based lawn equipment for county properties (including parks and schools)
 - Food Waste Composting
 - Farmer's Market Compost Pickup (the closest pilot was at the Herndon farmer's market)
 - The Department of Public Works and Environmental Services is exploring expanding support for composting at scale
 - Tree Commission Recommendations- but implementation has stalled
 - Green Building Codes for new construction
 - Green Business Partners and C-PACE (for businesses and commercial property owners)

Relevant VA State Policies

- Passed
 - Virginia Clean Economy Act
 - Regional Greenhouse Gas Initiative (RGGI)
 - Advanced Clean Cars standard

Summary of Actions for Great Falls Residents

Category	Strategy	Actions
Residential Energy	Switch to Electricity Generated by Renewable Energy	<input type="checkbox"/> Install rooftop solar and/or <input type="checkbox"/> Support build out of new renewable energy generation in VA
	Electrify Home Appliances & Tools	<input type="checkbox"/> When it is time to replace heaters, dryers, stoves, or lawnmowers, switch from gas to electric alternatives
	Improve Energy Efficiency & Conservation	<input type="checkbox"/> Conduct an energy audit <input type="checkbox"/> DIY or contract energy efficiency improvements
Transportation	Shift to Low-Carbon Transportation	<input type="checkbox"/> Purchase or lease an EV or Hybrid <input type="checkbox"/> Support Great Falls Trail Blazers initiatives aimed to increase access to safe walking trails
	Reduce Miles Traveled per Week	<input type="checkbox"/> Enjoy local community spaces, events, shops, restaurants, and parks <input type="checkbox"/> Telecommute a few days a week (if possible)
Natural Systems & Home Landscapes	Protect & Regenerate Natural Carbon Sinks & Biodiversity	<input type="checkbox"/> Join GFCA efforts to preserve and restore the local tree canopy <input type="checkbox"/> Implement low-carbon landscaping practices at home and in HOA common areas
Waste	Reduce Amount of Waste Going to Landfill, Waste-to-Energy Facilities, and the Local Environment	<input type="checkbox"/> Borrow or purchase secondhand <input type="checkbox"/> Switch to reusable, plastic-free alternatives <input type="checkbox"/> Compost food scraps <input type="checkbox"/> Learn more about what can and cannot be recycled in Fairfax County
Agriculture	Support Local Agriculture	<input type="checkbox"/> Purchase from local farmers <input type="checkbox"/> Grow food at home
Climate Resilience	Build Local Resilience	<input type="checkbox"/> Prepare your property for potential storm or flooding damage and power outages <input type="checkbox"/> Participate in local resilience discussions and planning
Advocacy	Learn More & Advocate for Policy Impacting our Community	<input type="checkbox"/> Join GFCA committee meetings for further information and actions <input type="checkbox"/> Volunteer with GFCA or other non-profits working on these issues

Action Deep Dives

Residential Energy

Residential energy usage makes up about 25% of the total carbon emissions in Fairfax County. There are a number of ways that Great Falls can reduce our contribution.

Switch to Electricity Generated by Renewable Energy

The Virginia Clean Economy Act passed in 2020 set goals for VA to move to 100% clean energy by 2050 (Dominion by 2045). Dominion Energy is building out more solar and wind capacity to displace natural gas and plans to retire coal-only units, but the current energy mix is mainly natural gas, followed by nuclear, and renewables. To support a faster transition to renewable energy, there are a few resources and options.

- Install Rooftop Solar
 - Many Great Falls residents in sunny locations have opted to install rooftop solar panels in recent years.
 - The [Solarize program](#), offered by the Local Energy Alliance Program and Fairfax County, provides a simple way to evaluate if solar panels are a fit for your property and to enter a contract with a discounted and verified vendor.
 - Installing solar can be a large upfront investment but most homes suitable for solar will recoup their costs (due to energy savings and SRECs) long before the end of the life of the panels. With the tax credits and rebates, overall costs are similar to other home upgrades in the region.
- Support Build Out of New Renewable Energy Generation in VA
 - Not every house is ideal for solar. Many properties in Great Falls are surrounded by mature trees, [making solar panels a less viable option](#).
 - Dominion offers a few [Renewable Energy Certificate \(REC\)](#) programs.
 - Purchasing RECS essentially means that you can claim to power your home with renewable energy, even if Dominion's energy supply still contains fossil fuels.
 - These programs only take a few minutes to sign up for online and there are no physical changes required for your home to participate in the REC market. [Dominion Energy](#) and [Arcadia](#) (a DC-based company) both offer these types of programs.
 - Unfortunately, other than providing some additional money to existing renewable energy facilities and signaling your support for renewables, given the way the programs are structured in Virginia, participating is unlikely to dramatically move the needle on building out more renewable energy capacity.
 - A more direct way to support the construction of new solar capacity in Virginia is to help fund or move forward a local solar installation (such as on a commercial, non-profit, or faith community building, or a neighbor or family member's house),

or to support groups working with the VA General Assembly on legislation that would expand access to renewable energy.

- [Give Solar](#) is a non-profit that installs solar panels on Habitat for Humanity homes in Virginia.
- The [Virginia Conservation Network](#) is a good resource for following clean energy policies that communities around the state are advocating for (there are over 150 organizations in their network).
- Options for community solar in Virginia are currently limited but are expected to increase and become more economically viable in the future. Community solar programs allow participants to reap some of the same financial benefits as rooftop solar users without needing to install panels on their own home.

Electrify Home Appliances & Tools

Obtaining electricity from a cleaner source will have a large impact on your home's carbon emissions. If you have any gas-powered appliances or equipment on your property, switching over to electric appliances will further lower your home's emissions and improve air quality.

Most homes in Great Falls are already using electric heating, but some have natural gas hookup and others may be using propane for certain tasks. Electrifying home and water heaters will have the biggest impact on home emissions.

- [Rewiring America](#) offers tips for electrifying your home and recommendations to help prioritize projects.
- Dominion Energy and the recently passed Inflation Reduction Act (IRA) provide some economic incentives and rebates for making the switch. Eligibility requirements vary and some include an income cap.
- When evaluating HVAC contractors, ask about their experience installing heat pumps. Heat pumps are more energy efficient than traditional electric heaters and air conditioners.
- Check with an electrician before purchasing appliances to determine if you need to make any upgrades to your electrical panel or wiring first. HOAs may be able to negotiate bulk discounts with contractors if multiple homes in the community are electrifying.

Improve Energy Efficiency & Conservation

Reducing the energy our homes consume is a direct way to make an impact on emissions in the short term. Lowering the demand for energy also means fewer resources and emissions will be needed to build more or larger power plants. As an added bonus, energy efficiency can help save some money on your energy bill and improve the comfort of your home in the winter and summer.

- Energy Audits & Weatherization
 - The [LEAP program](#) provides an independent energy audit to help prioritize further investments. [Dominion Energy](#) also provides some auditing services and product rebates.
 - Local companies like Home Energy Medics also offer energy audits as a precursor to providing weatherization services.
 - If you'd like to DIY an energy audit, the Fairfax Library system offers [thermal cameras](#) as well as a [Conserve Kit](#) to borrow.
- Energy Efficiency
 - [Energy Action Fairfax](#) offers additional tips and resources

Transportation

According to the CECAP, 44% of emissions in Fairfax County are from transportation. Given the semi-rural nature of Great Falls, owning a car is often necessary, but there are still some changes we can make to lower our transportation emissions, and improve local air quality at the same time.

Shift to Low-Carbon Transportation

- Purchase or lease an EV or Hybrid
- Support [Great Falls Trail Blazers](#) initiatives aimed to increase access to safe walking trails through Great Falls, including a trail along the entirety of Georgetown Pike

Reduce Miles Traveled

- Telecommute a few days a week (if possible)
- Enjoy local community spaces, events, shops, restaurants, and parks
- Fly less often

Natural Systems & Home Landscapes

The natural beauty of our community is also a major asset for sequestering carbon and adapting to a warming world. Decisions we make on our properties can further support climate mitigation and adaptation goals.

The [existing trees in Fairfax County sequester half a million metric tons](#) of CO₂ equivalent per year, or about 5% of the annual greenhouse gas emissions in the county. Trees also provide a

shading effect, reduce the amount of power we need to cool our homes, and absorb floodwater. Shrubs, perennials, and even healthy soil can also help absorb carbon and excess water.

Protect & Regenerate Natural Carbon Sinks & Biodiversity

- Join GFCFA efforts to preserve and restore the local tree canopy
- Implement low-carbon landscaping practices at home and in HOA common areas
 - Plant more native plants and trees - [Plant NoVA Natives](#) and [Plant NoVA Trees](#) provide additional resources and support
 - Swap gas-powered machines for electric or manual equipment
 - Eliminate use of chemical fertilizers, herbicides, and pesticides (which require fossil fuels to make) in favor of organic and natural methods to save money and support local wildlife
 - Leave the leaves on your property instead of bagging them up in the fall for free fertilizer and mulch
 - Reduce lawn coverage
 - Register your actions on [“Watch the Green Grow”](#) and [“Homegrown National Park”](#)

Agriculture

While most of the food consumed in Fairfax County is not grown here, industrial agricultural practices are a major contributor to global emissions. The global food system, including all of the emissions required to grow, process, package, and transport food, makes up about [a third of human-caused greenhouse gas emissions](#).

Support Local Agriculture

Great Falls has a rich farming history and many of our homes were built on farmland. There are multiple ways to support local farms or perhaps consider setting up a few containers or a garden at home to enjoy fresh seasonal herbs and produce. Supporting local regenerative farms is a great alternative to industrial agriculture, which is heavily dependent on fossil fuels.

Local resources:

- [Great Falls Farmer’s Market](#)
- [Potomac Vegetable Farm CSA](#)
- [Beanstalk Farms](#)
- Vegetable Gardening at Home
 - [Great Falls Garden Club](#)
 - [Love & Carrots Garden Installation & Coaching](#)
 - [Resources for establishing a community garden](#)

Waste

Every item that we use has a carbon footprint. Resources and energy were consumed to create and ship the item. At the end of an object's life, recycling and even disposing of items creates additional waste.

In 2021, 52% of waste generated in Fairfax County went to landfill/incineration and [48% was recycled](#). 2% of the greenhouse gas emissions in Fairfax County are due to waste incineration.

In the CECAP, Fairfax County set a goal of achieving zero waste (>90% recycling rate) by 2040.

Reduce Amount of Waste Going to Landfill, Waste-to-Energy Facilities, and Local Environment

There are a number of local opportunities to support transitioning to zero waste and a circular economy.

- Borrow or purchase secondhand
 - Great Falls Library
 - Friends of Great Falls Library Book Sales
 - Community swaps, Buy Nothing, and Freecycle
 - Antique stores, estate sales, yard sales, Facebook Marketplace, and Nextdoor
 - There are additional secondhand stores and events selling books, toys, clothes, children's items, home furnishings, and hobby equipment in Herndon, Reston, and Sterling.
- Switch to plastic-free alternatives
 - Most of the litter alongside Great Falls roads, and in our neighborhoods, parks, and streams is single-use plastic packaging. [Earthhero.com](#) is one place to purchase more eco-friendly versions of common plastic items.
- Compost organic waste
 - Compost at home
 - Sign up for curbside compost pickup
 - Veteran Compost and Compost Crew are two options
- Learn more about what can and cannot be recycled in Fairfax County
 - Local recycling resources can be found [in this GFCA article](#) and on Fairfax County's [Department of Public Works and Environmental Services website](#)

Climate Resilience

Build Local Climate Resilience

- Prepare your property for potential storm or flooding damage and power outages
- Participate in local resilience discussions and planning

Advocacy

Learn More & Advocate for a Cleaner, Cooler Future

- Read the monthly GFCA newsletter for updates
- Message GFCA about your interests, ideas, and concerns for our community
- Join GFCA Environment & Parks committee meetings for further information and actions
- Subscribe to Fairfax County and non-profit newsletters on related topics that interest you
- Volunteer with GFCA or other non-profits working on these issues
- Follow VA state environmental legislation and message our representatives with your support or feedback
- Donate to or invest in non-profits and businesses developing solutions
- Divest from [banks supporting fossil fuels](#), in favor of [fossil-fuel free options](#)

Additional Resources

- [Carbon-Free Fairfax](#) offers additional educational content and events
- [Bright Action](#) is a free platform for creating a custom action plan for your household
- [Rewiring America](#) provides more information about electrifying home appliances
- [350 Fairfax](#) hosts monthly informational webinars about environmental topics relevant to Northern Virginia
- The Climate Reality Project, NOVA Chapter gives presentations about the climate crisis and the relevant provisions in the 2022 Inflation Reduction Act (IRA)
- The Master Gardeners of Northern Virginia has a [series of videos](#) about climate conscious gardening
- [Faith Alliance for Climate Solutions](#) provides additional resources for faith communities