OFFICE OF
**Environmental and
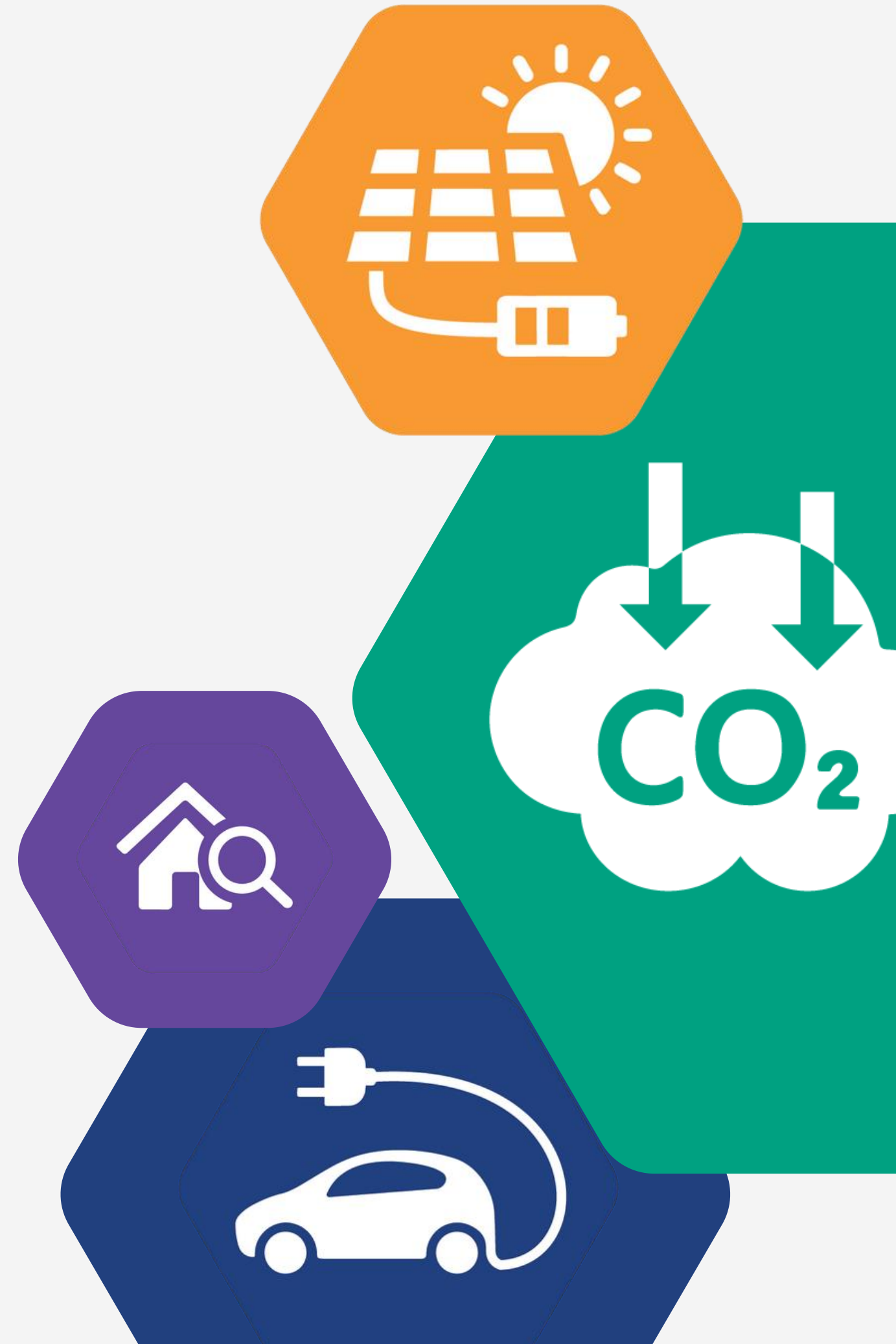Energy Coordination**
FAIRFAX COUNTY

Personal Climate Action

To save money, reduce emissions, and build resilience

The Office of Environmental and Energy Coordination (OEEC)

Environmental Administration & Policy

Environmental...

- Legislative tracking
- BOS initiatives
- BAC staffing
- Funding allocations
- Grants for county
- Incentives for the community
- Progress reporting
- Awards & recognitions

Making County Gov Operations Greener

- **Operational Energy Strategy**
- **Green buildings for county facilities**
- **Solar energy for county**
- **Energy efficiency improvements**
- **Electric vehicle chargers**
- **County government energy tracking**

Community Programs & Innovation

Climate Planning

- **Emissions Reduction:**
  - Community-wide Energy and Climate Action Plan (CECAP)
  - Reducing emissions in the community
- **Adaptation & Resilience:**
  - Resilient Fairfax
  - Severe storms, Extreme Heat, Flooding

## Environmental Coordination & Communications across:

County Departments, County Partners, Elected Officials, State & Federal Government, Other Jurisdictions, Regional Groups, Non-profits, Utilities, Community Groups, General Public

Agenda

- Climate Basics
- Actions to Lower Emissions
- Actions to Build Resiliency
- How to Get Involved
- Resources

Climate Basics

- There is a difference between climate and weather

- Human activity is driving climate change and other long-term changes to Earth's climate.

- The burning of fossil fuels and other industrial practices result in greenhouse gas (GHG) emissions, which have risen exponentially since the start of the Industrial Revolution.

- These emissions have impacted the Earth's natural greenhouse effect. Just as a greenhouse allows sunlight in and holds heat within its walls, **the greenhouse gases in our atmosphere trap heat and cause the Earth to warm.**

- Four major gases contribute to the greenhouse effect, but we tend to focus on **carbon dioxide (CO2) as the biggest contributor to warming.**
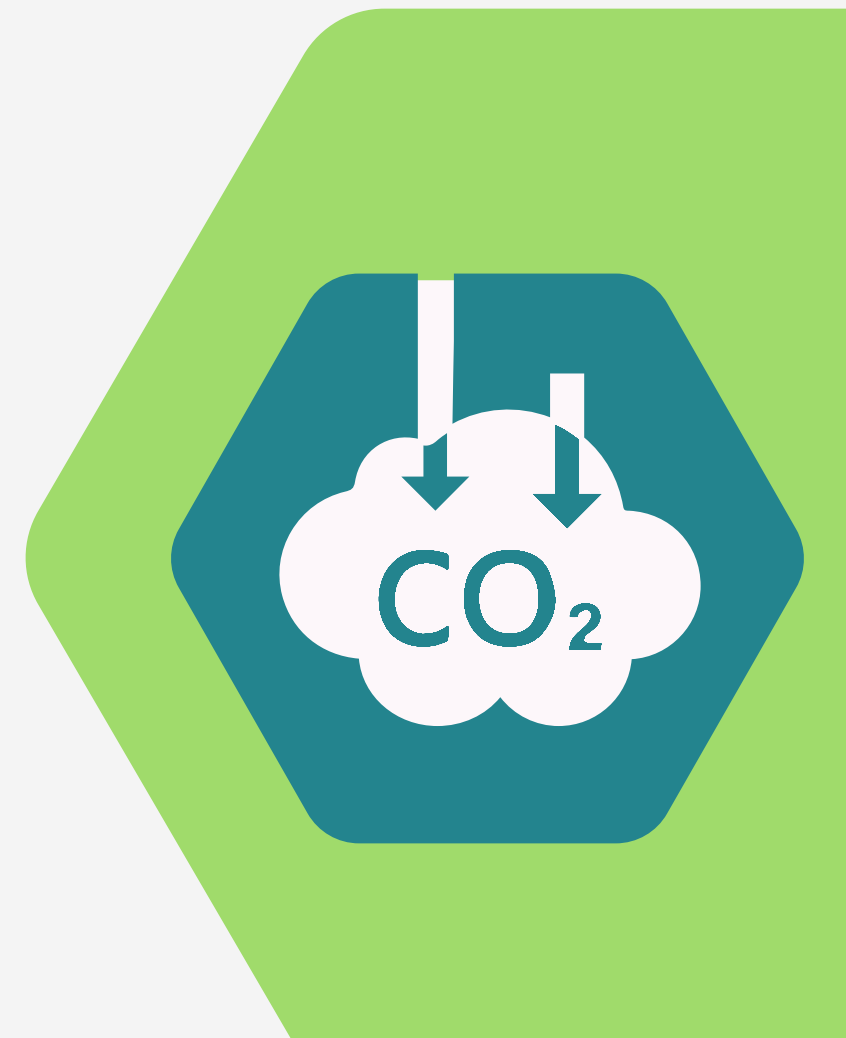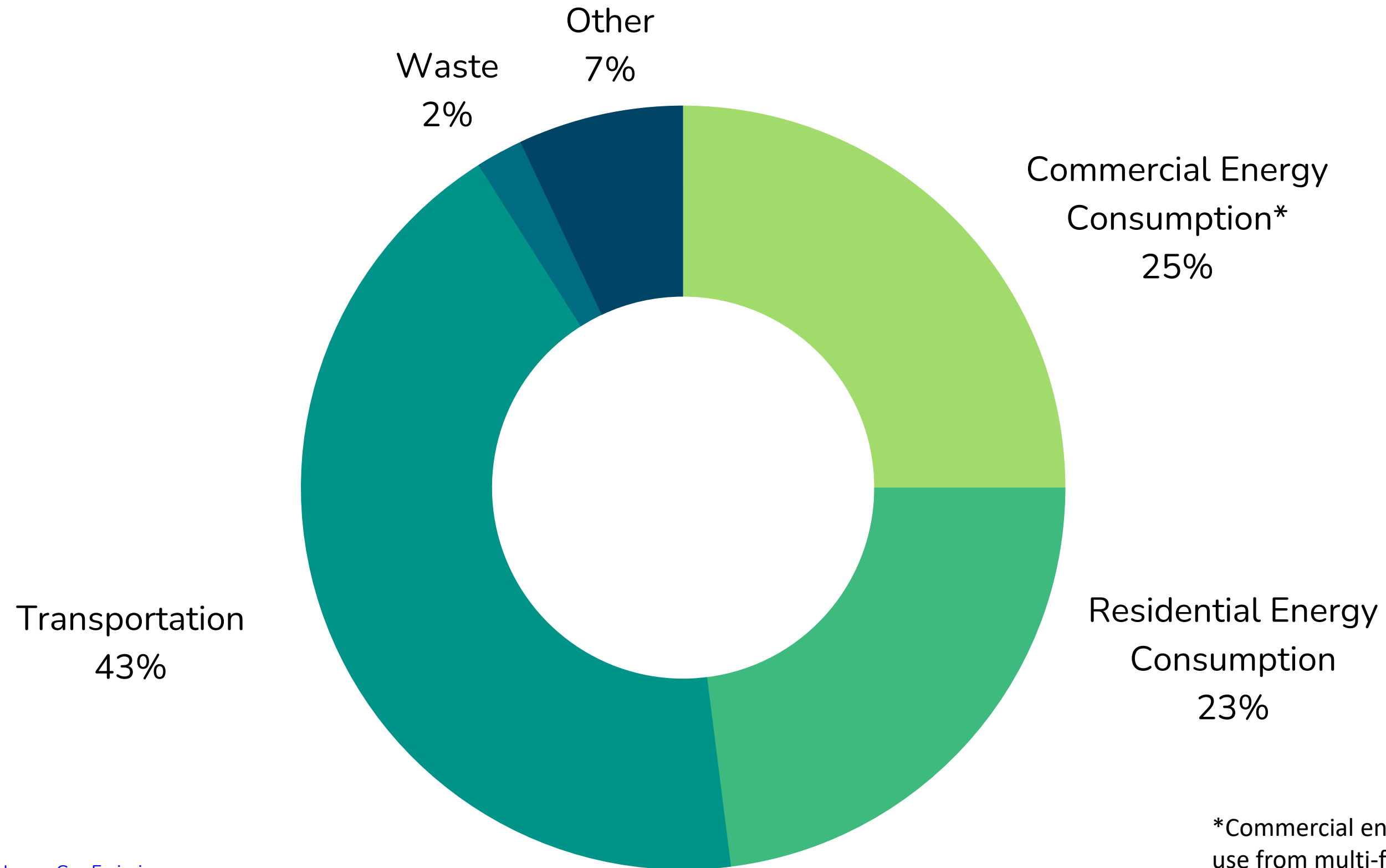
The Greenhouse Effect
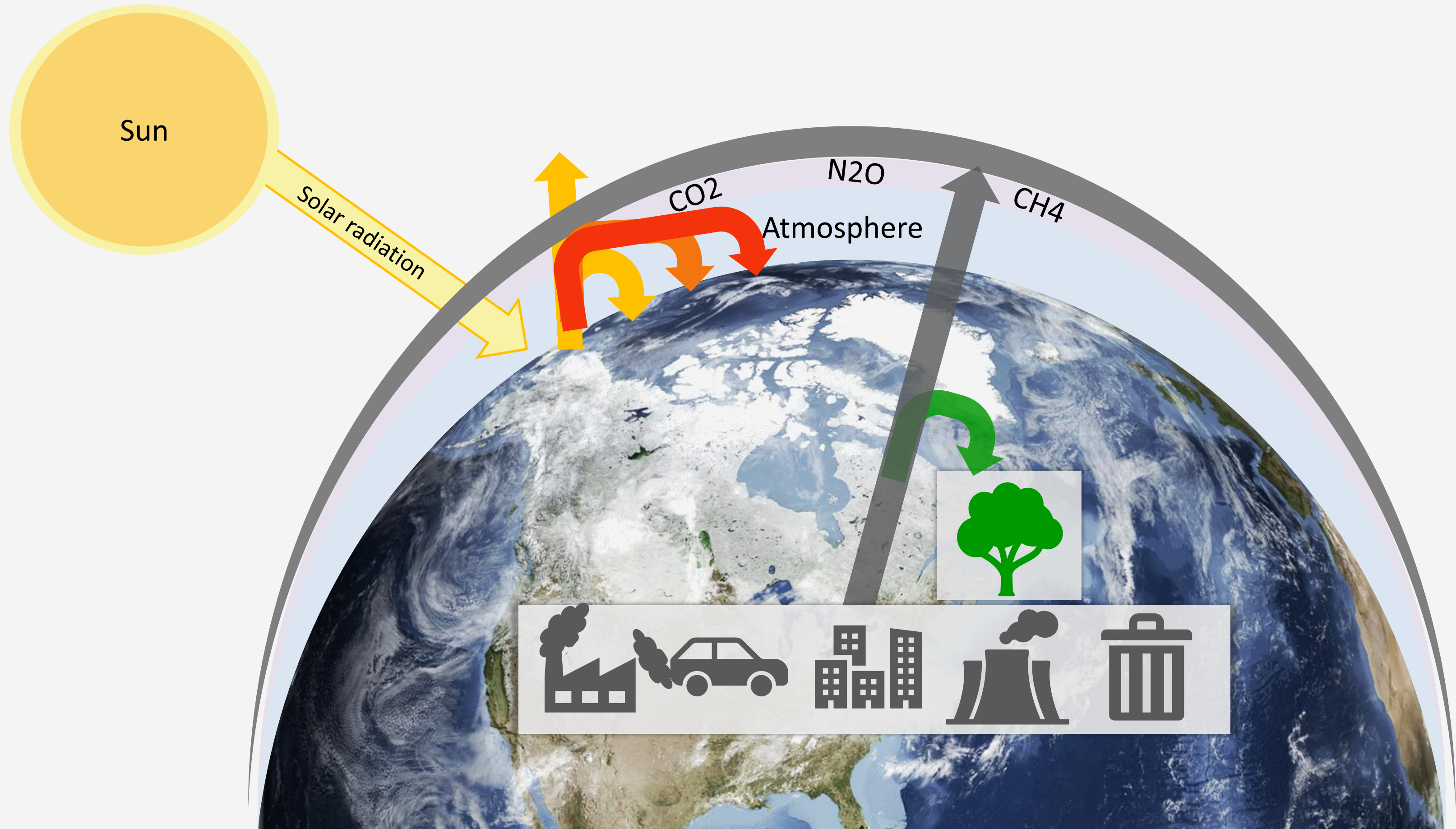
How Do I Contribute to Climate Change?

- In the U.S., most greenhouse gases come from the burning of fossil fuels (coal, oil, natural gas) for energy, transportation and industrial needs.

- Industrial agriculture, deforestation and other land use changes also play a role.

- While we, as individuals, are not the biggest emitters, we do produce or contribute to GHG emissions by:
    - Using electricity, heating oils, or natural gas in our homes;
    - Driving a vehicle that uses gasoline or diesel;
    - Eating carbon-intensive foods, such as beef, lamb, shellfish, and cheese;
    - Purchasing and disposing of manufactured goods.

Fairfax County's GHG Emissions Inventory (2020)

Other
7%

Waste
2%

Commercial Energy
Consumption*
25%

Transportation
43%

Residential Energy
Consumption
23%

*Commercial energy consumption reflects energy use from multi-family dwellings and apartment buildings as well as other commercial buildings.
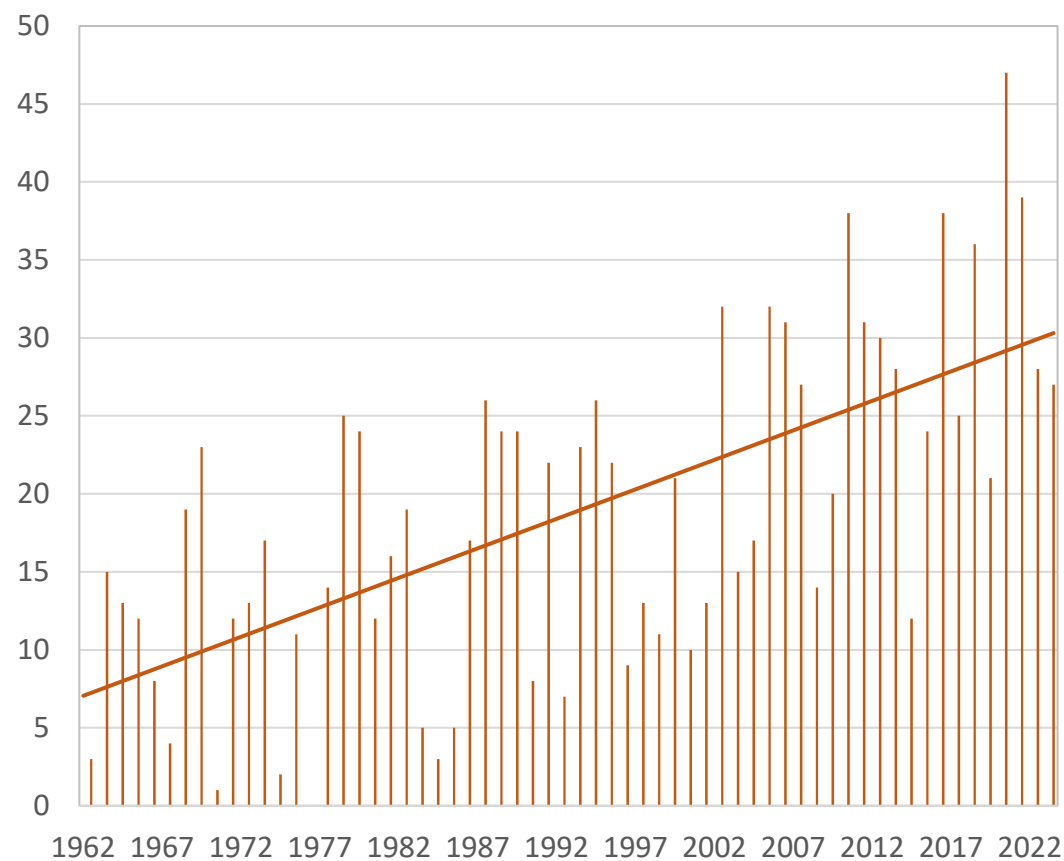
Source: Community-Wide Greenhouse Gas Emissions Inventory Summaries | Metropolitan Washington Council of Governments (mwcog.org)

Our Climate is Getting...

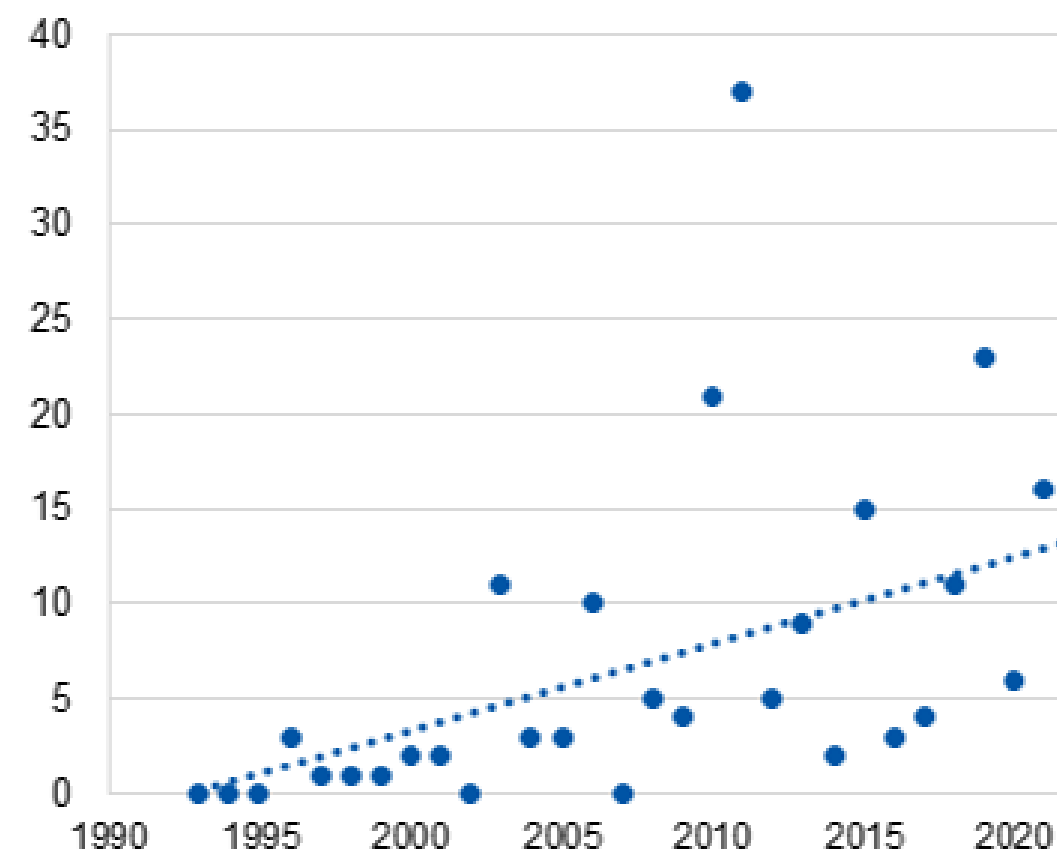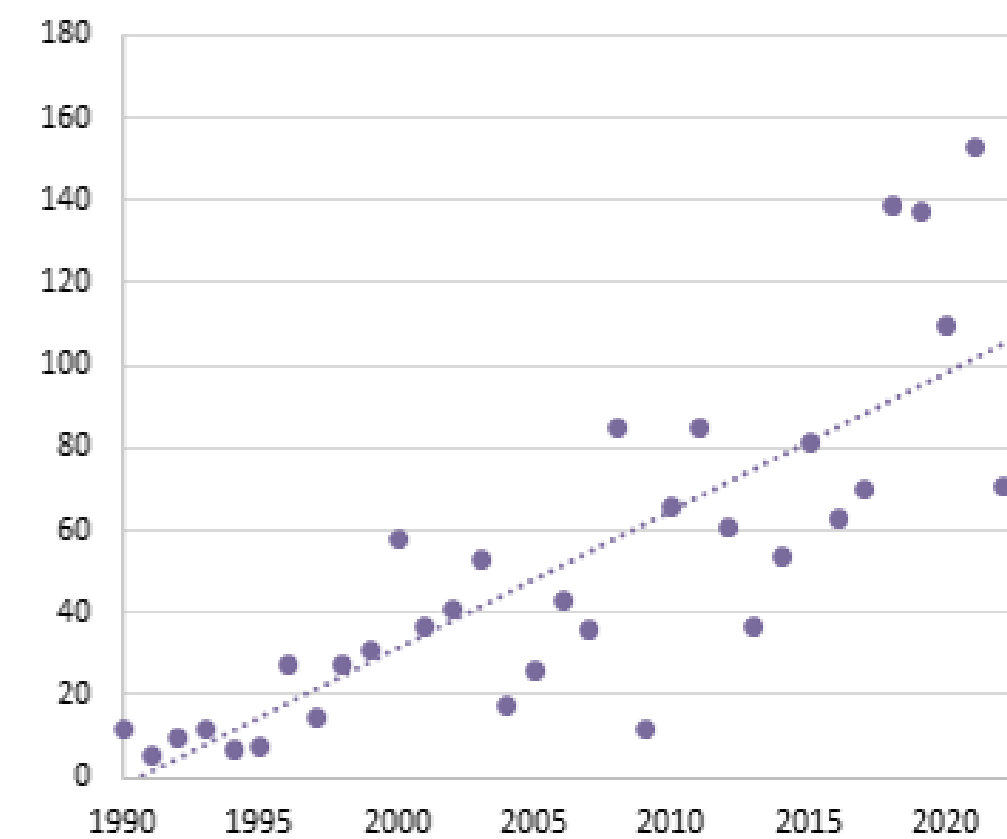| WARMER	WETTER	WEIRDER

Number of Nights Per Year Above 70 F
in Fairfax County, VA

Number of Flash Flood Events Per Year
in Fairfax County, Virginia

Number of Storm Events Per Year
in Fairfax County, Virginia

Fairfax County Climate Projections

| WARMER	WETTER	WEIRDER
Annual temperatures **have already risen +4 °F since 1962** in Fairfax County. They are **projected to rise an additional 4.4 – 8°F by 2085**.	Total annual **precipitation events** are projected to **increase 3-4 inches** by 2085.	We can expect **more frequent and severe storms** like tropical storms, hurricanes, derechos, and nor'easters.
Extreme **heat days to increase from 7 to 68** days per year by 2085.	**Rain events** are projected to become **heavier** (by 8 – 20%).	Periods of **no precipitation followed by sudden, very intense precipitation** are anticipated.
The **urban heat island effect** will cause certain areas of the county to experience even warmer conditions, on top of a temperature increase.	By 2050, our area is projected to see **1-3-feet of sea level rise** in the Potomac River and associated water bodies.	We will continue to experience **unseasonably warm/cool temperatures.**

Why Should I Care About Climate Change?

Warmer, wetter, weirder climate conditions can result in:

- **Adverse health impacts** due to an increase in heat stress and pollen season.
- Increased range of **disease-carrying vectors** (e.g. ticks, mosquitos) and rates of Lyme disease, West Nile virus, and more.
- **Increased energy demand and costs**, which can threaten the reliability of energy supply and raise household expenses.
- Increased threat of **flooding and damage** to personal property.
- **Altered biodiversity** and wildlife habitat.

People with **health issues, children, older adults and low-income populations**, are most at risk from climate impacts.
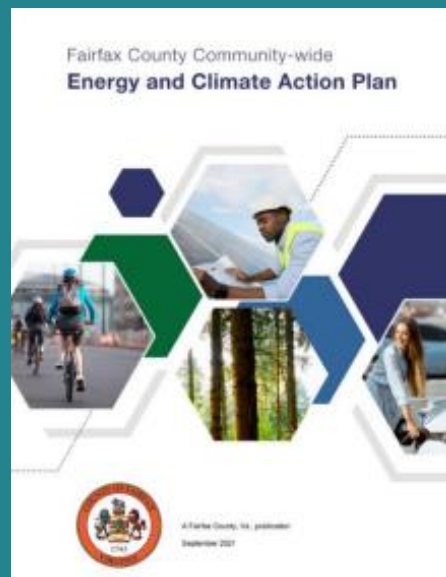
How is Fairfax County Responding to Climate Change?
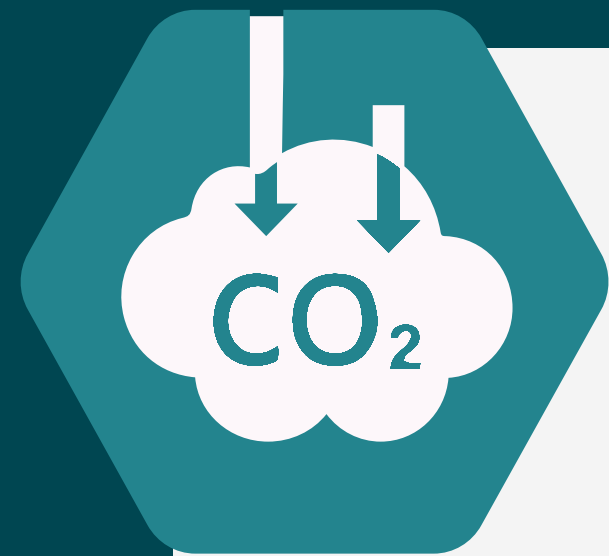
Addressing the Cause:
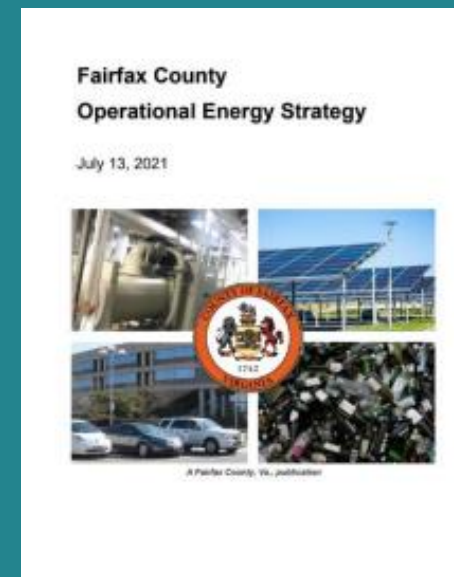**by doing our part in the global effort to reduce emissions**

CECAP
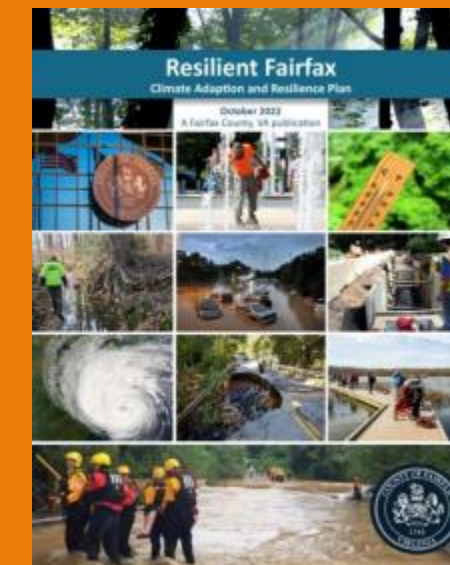(*Community-wide*)

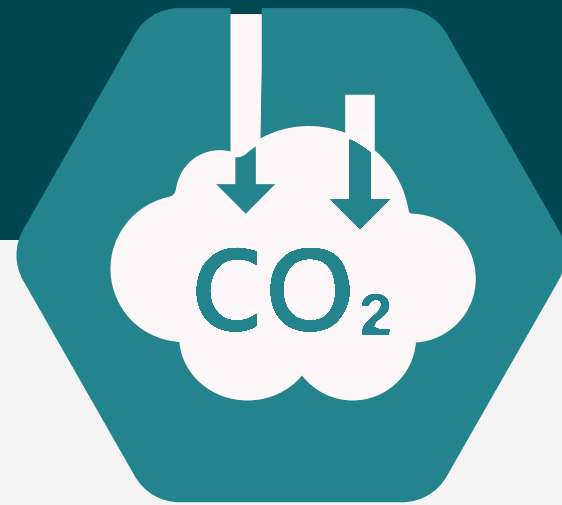### Operational Energy Strategy
(*Government operations only*)

Addressing the Effects:
adapting/building resilience to the impacts we experience locally

Resilient Fairfax
(*Government and community*)

Fairfax County Community-wide
Energy and Climate Action Plan

**Fairfax County
Operational Energy Strategy**

July 13, 2021

Resilient Fairfax
Climate Adaption and Resilience Plan

What Can *You* Do?

Reduce Your Emissions

- Address the "cause" of climate change
- Reduce emissions that feed into global climate change
- Help get the county to energy carbon neutrality by 2040 and the community to carbon neutrality by 2050
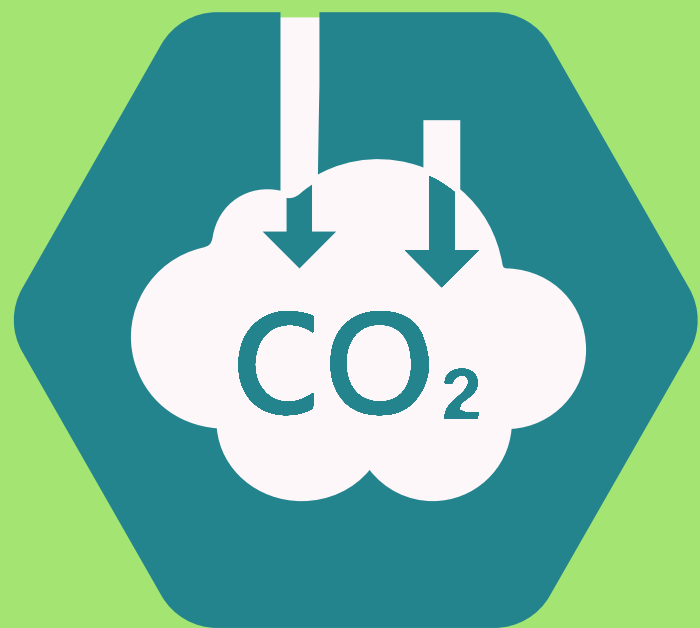
Build Climate Resilience

- Address the "effects" of climate change
- Adapt and build resilience before, during and after climate hazards such as extreme temperatures, severe storms and flooding

Get Involved

- Become a community champion, pass along what you've learned
- Follow the OEEC's newsletter and social media platforms

Actions to Lower Emissions

Know Your Numbers

Learn the numbers behind your personal choices and habits. **You can use your personal numbers to calculate how certain actions can reduce your emissions (and save you money)**.

Where to evaluate your personal numbers:
- Review your utility bills and average energy use;
- Evaluate your car's fuel bills, vehicle miles traveled, and average mileage;
- Use the **EPA's Carbon Footprint Calculator** to estimate your carbon footprint and dollar savings with a few proposed actions.

EPA Carbon Footprint Calculator

Household Carbon Footprint Calculator

| Home Energy | Transportation | Waste |
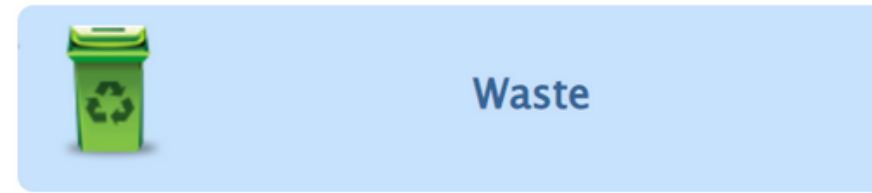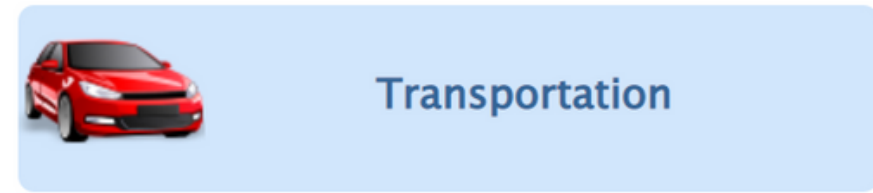
Home Energy

[-] Your Current Emissions from Home Energy

Heating — What is your household's primary heating source? — Natural Gas ▼

Utility — Enter your average monthly bill or other data for each source of energy your household uses.
Click the icons, ⓘ below for each U.S. average

Natural Gas ⓘ
43.20
Dollars ▼

Electricity ⓘ
57
Dollars ▼
% electricity that ⓘ

Fuel Oil ⓘ
Dollars ▼

Propane ⓘ
Dollars ▼

Your Carbon Footprint

Annual CO_2 emissions (lbs.) ⓘ

Your Current Total:
17,151

New Total After
Your Planned Actions:
14,691

U.S. Average*:
19,702

Information Needed:

- Number of people in your home, zip code
- Primary heating source
- Average monthly energy bills (natural gas, electricity, fuel oil, propane)
- Number of vehicles in the household
- Average miles driven
- Average gas mileage
- Products recycled (aluminum & steel cans, plastic, glass, newspaper, magazines)

Home Energy
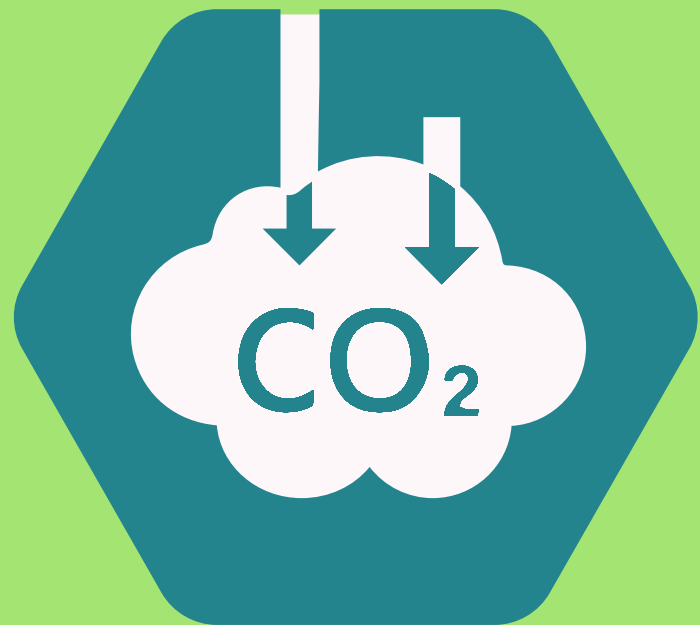
Energy Use at Home

Heating and cooling

Lighting

Electronics

Water heating

Appliances

Assess Your Home Energy

Hire a professional to conduct an **energy assessment,** also known as a home energy audit, to identify **problem areas and recommend improvements** so you can save energy and money on your utility bills.

Here are some tips to consider:

- Take advantage of a tax credit to offset the assessment cost (30% of costs, up to $150).
- Check out your local utility companies for energy audit programs and rebates.
- Unsure or can't commit? Perform your own initial audit.

Did You Know? Fairfax County Government is performing facility energy audits and has completed audits for 20+ county facilities.

Weatherize Your Home

Save an average of 15-20% on heating and cooling costs by **finding and sealing air leaks, adding insulation,** and **replacing windows and doors** with ENERGY STAR models. This will keep your house warmer in the winter and cooler in the summer.

Here are some tips to consider:

- Check out a [thermal camera](#) and the [Conserve (Energy) kit](#) from Fairfax County Public Library and make minor home sealing improvements.
- Look for [federal tax credits for these improvements](#).

Did You Know? You can help weatherize your place of worship, community association, or nonprofit organization located within Fairfax County using the [Energy Conservation Assistance Program](#).

Go Electric (At Home)

Electrify your home to reduce demand for fossil fuels and get closer to being carbon-free. You may be able to tap into **federal tax credits or incentives from your local utility provider(s)** for these improvements!

If you can, make the switch to:
- a heat pump for heating and cooling;
- a heat pump water heater; and
- electric appliances.

Unable to electrify yet?
- Replace older appliances and units with more energy and water-efficient models ([ENERGY STAR®](#) or [WaterSense](#)).
- Make your home electric ready - get your home's wiring ready for electric vehicle chargers, electric heat pumps, water heating, and cooking.

Take Small Actions for a Big Impact

Consider smaller actions to save energy, reduce your emissions, and lower your energy costs:

- **Install and set a programmable thermostat.**
  - Save as much as 10% a year on heating and cooling by simply turning your thermostat back 7-10°F for 8 hours a day from its normal setting.
  - Look for rebates from your local utility companies!
- **Replace HVAC filters every 3 months.**
- **Wash your clothes in cold water** and **reduce use of your dryer** by using a clothesline or dryer rack.
- **Use LED lights and turn lights off.**
- **Unplug electronics and/or use smart power strips.**
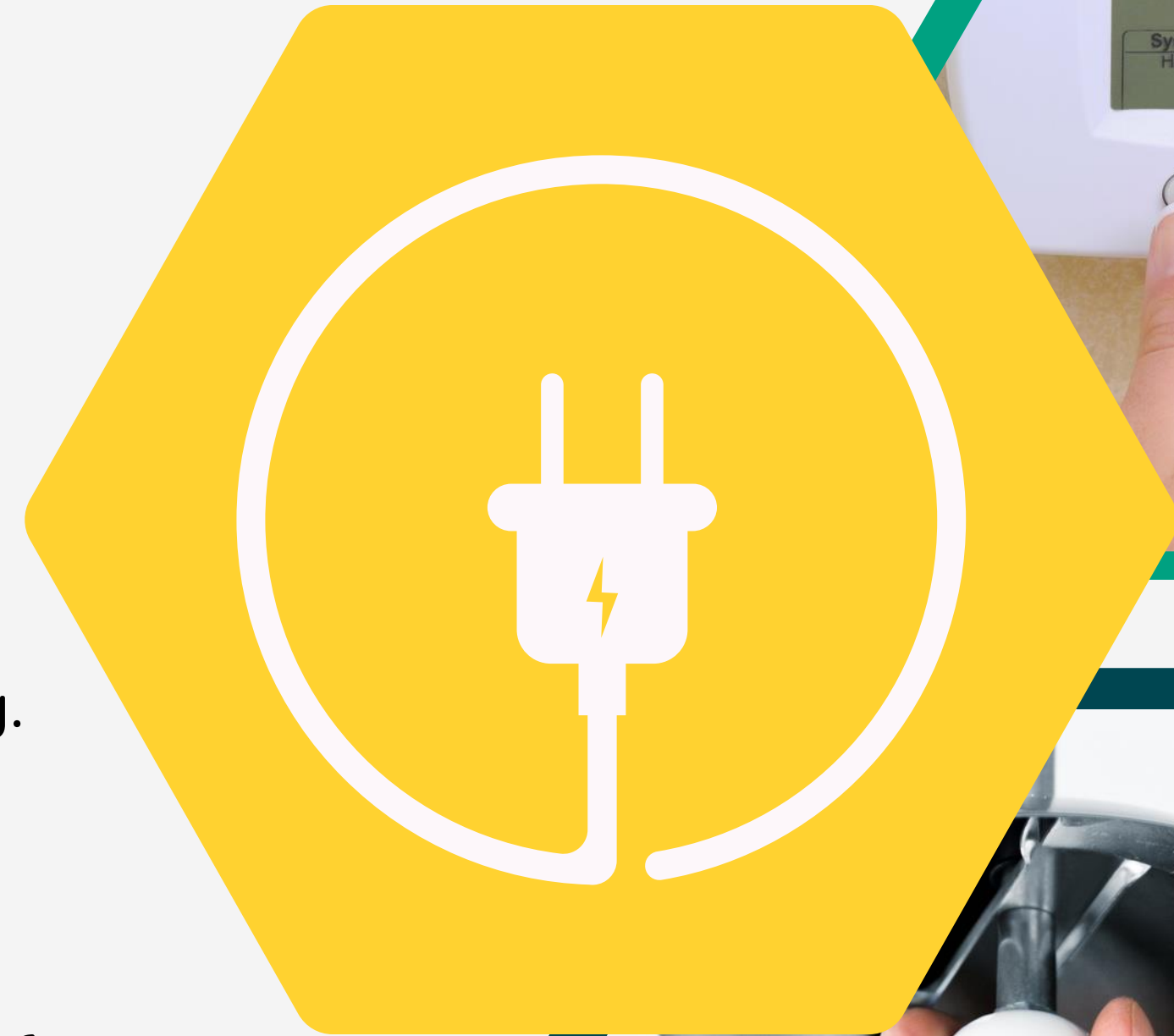
Install Solar

Install solar panels — which are good for the environment and your wallet. Virginians can expect net **20-year savings of up to $25,000**.

To go solar:

- Explore your home's solar potential with tools such as the [NOVA Solar Map](#).
- Sign up for a solar purchasing program for a free assessment, discounted prices for solar panels and other perks.
- Explore [solar tax credits](#).
- Not able to get solar? Help green our grid and opt into renewable energy credits (RECs) with your electricity provider.

Did You Know? Fairfax County Government is installing solar panels on county facilities.

Transportation
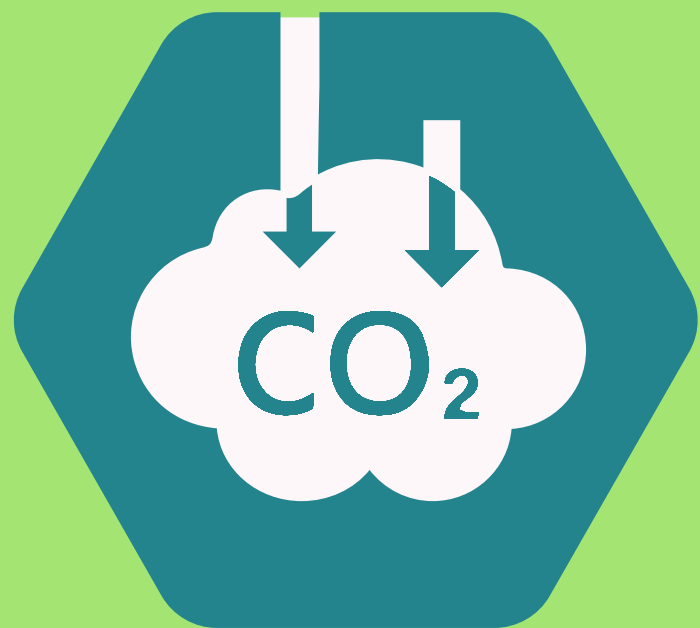
Drive Less, Walk or Ride More

Use public and alternative transportation to improve local air quality and reduce emissions. An individual taking public transit (like Fairfax Connector, WMATA, Amtrak or VRE) **contributes 55% fewer emissions per mile travelled** compared to driving or ride hailing.

Other ways individuals can reduce emissions include:

- Walk or bike for short trips (less than 3 miles).
- Telework, as your job allows.
- Join a [carpool or rideshare program.](#)

Switch to an EV

EVs produce less air pollution and carbon emissions - **less than 25% of the emissions of a comparable gas-powered vehicle**, per national averages.

EVs come in all shapes and sizes and are evolving at a fast pace. [Federal incentives](#) can help reduce upfront costs, with certain EV models eligible for a tax credit of **up to $7,500**.

Did You Know? Fairfax County Government is switching to EVs! It has EVs in its motor pool, electric Fairfax Connector buses, and even electric garbage trucks. Fairfax County Public Schools also has electric school buses in its fleet.

Maintaining an EV

You can save $6,000-$10,000 in reduced fuel and maintenance needs by buying an electric vehicle (EV). EVs have batteries that **may last 12-15 years** in temperate climates, and **EV power cells** must be **covered under warranty** for at least **eight years** or **100,000 miles**.

You can charge your EV at home, at work, or at one of the **350+ publicly available charging stations** in the county. **EV chargers are available at more than a dozen county facilities**.

Did You Know? The Charge Up Fairfax program provides grants and technical assistance to community associations to install EV chargers.

Waste
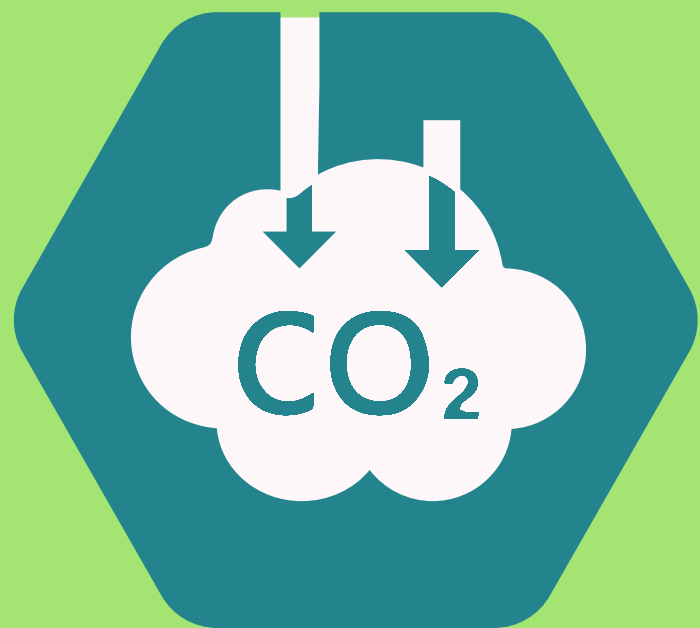
Reduce Waste

Follow the 5 Rs of waste reduction:

- **Refuse**: Only buy what you need and refuse non-recyclables.
- **Reduce**: Use fewer materials at home or work.
- **Reuse**: Donate lightly used items.
- **Repurpose**: Find a new use for items that no longer meet their intended purpose.
- **Recycle**: Use single stream recycling for aluminum, steel cans, plastic, and paper and Purple Can sites for glass. Compost at home, work, or drop off food waste at I-66 or I-95 complexes or county farmer's markets.

Did You Know? Fairfax County Government and Fairfax County Public Schools have a Zero Waste Plan for county operations.

Actions to Build Resilience

Plant Native Trees

Plant native trees to **reduce the urban heat island effect**, **absorb floodwater**, and **build resilience**.

Fairfax County's existing trees are estimated to intercept **7.3 billion gallons of rainfall per year**, helping to avoid **945 million gallons of stormwater runoff**, and saving **$8.4 million** in stormwater mitigation.

- Plant and conserve native trees.
- Preserve trees during construction.
- Advocate for tree plantings on commonly-owned land in your community (like your HOA!)

Did You Know? Fairfax has a **Tree Preservation and Planting Fund** for Fairfax County agencies, regional government agencies, and 501(c)(3) non-profits.

Plant Native Vegetation

Plant native vegetation to **build a resilient ecosystem, reduce storm-related erosion**, and **absorb flooding**.

Native vegetation needs less resources to keep healthy and will more easily adapt to our changing climate. Additionally, native plants, which help promote healthy wetlands and living shorelines, absorb storm surge and other types of flooding.

Enhance our native vegetation by:
- Identifying and removing invasive species.
- Planting native vegetation.
- Volunteering to remove invasives, such as with the Fairfax County Park Authority's Invasive Management Area Program.
- Engaging with "Watch the Green Grow".

Boost Resilience to Extreme Heat

Extreme heat days are increasing in Fairfax County. Health-related impacts will increase, particularly for vulnerable populations.

To build resilience:

- Plant native trees to reduce the **urban heat island effect**.
- Know the signs of **heat-related illness**.
- Consider switching to a **cool roof** to save on air conditioning costs.
- Apply for **cooling assistance** if you can't afford air conditioning.
- Know where your nearest **cooling center** is.
- **Add water breaks and adjust schedules for outdoor work and recreation.**

Boost Resilience to Flooding

Heavy precipitation events are becoming more frequent and intense, amplifying **flooding**.

Be prepared:

- Sign up for **flood insurance**.
- **Apply for a Flood Mitigation Assistance Program grant for flood-proofing features like** basement window well covers, flood-proof windows, and flood barriers.
- **Apply for Conservation Assistance Program funding to address yard flooding, drainage, or erosion issues**.
- **Reduce impervious surfaces and blockages of stormwater pathways in your yard.**
- Know how to submit a **flooding service request**.

Boost Resilience to Severe Storms

As our weather gets weirder, we can expect more frequent and severe storms, leading to power outages, debris, damage and unsafe conditions.

Be prepared:

- Sign up for **Fairfax Alerts** to stay informed about hazards.
- Make an **emergency kit** and **plan**.
- Know **who to contact to report outages**, flooding, and storm-related issues.
- **Get to know your neighbors** and check on them during natural disasters.
- Buy **solar phone chargers and electric back-up generators** for critical devices.

How to Get Involved

Be a Community Champion

Help your neighbors, coworkers, friends, and family reduce their emissions and adjust to our changing climate. Be a community champion! Consider:

- **Sharing what you have learned.** Need some help? Reach out to the **OEEC's Speakers Bureau program**
- Going to community educational events, learning, asking questions, and **doing**
- Signing up for **Fairfax Alerts** and encouraging your network to do the same
- **Volunteering**
- **Getting your places of worship, community associations, and non-profit organizations involved** in programs, such as Charge Up Fairfax and the Energy Conservation Assistance Program

Get Started!

Check out OEEC's **Climate Action Checklist**, which contains 70+ climate actions you can take. Not sure if you're ready to tackle 70+ actions? There are also **mini checklists** focused on home energy, resiliency, transportation, waste, and natural resources.

https://www.fairfaxcounty.gov/environment-energy-coordination/resources-residents

Want to learn more about what the county is doing, the climate plans or other ways to take action? **Head to OEEC's website.**

Resources

Climate Action Dashboard
www.fairfaxcounty.gov/environment-energy-coordination/climate-action

Resources for Residents
https://www.fairfaxcounty.gov/environment-energy-coordination/resources-residents

Climate Plans, Policies, and Initiatives
https://www.fairfaxcounty.gov/environment-energy-coordination/policies-and-initiatives

Fairfax Alerts
https://www.fairfaxcounty.gov/topics/alerts

Volunteer Opportunities
https://volunteer.fairfaxcounty.gov/

Do you have any questions?

Feel free to reach out!

Office of Environmental and Energy Coordination

OEECInfo@fairfaxcounty.gov
703-324-7136, TTY 711

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Follow us on Facebook: /fairfaxcountyclimate

Visit Our Website:

http://www.fairfaxcounty.gov/environment-energy-coordination/