



Community-wide Energy and Climate Action Plan (CECAP) Implementation

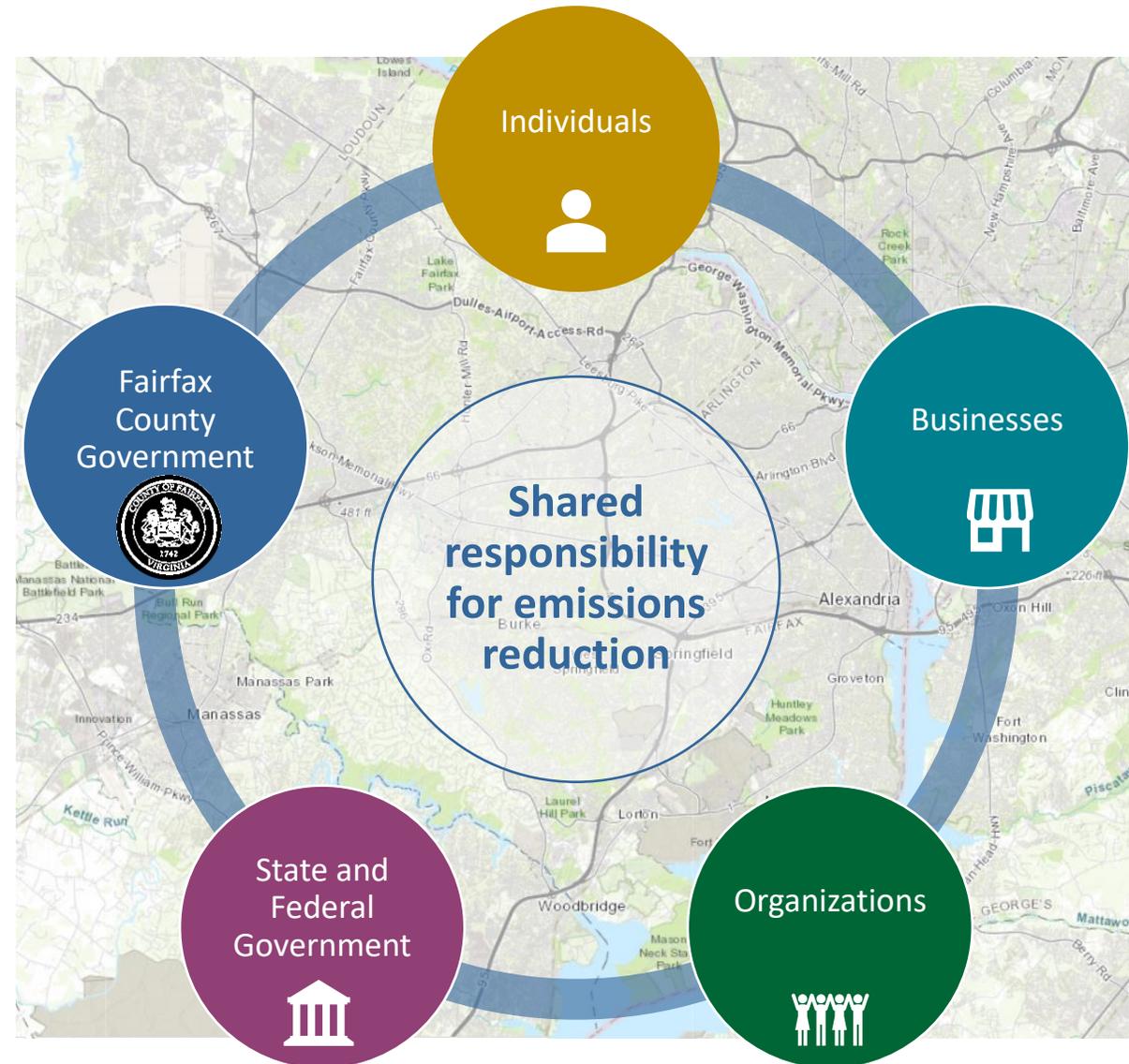
Neely Law, Matt Meyers, John Morrill
Office of Environmental and Energy Coordination

December 13, 2022

Community-wide Energy and Climate Action Plan (CECAP)

Background

- ✓ First-ever **greenhouse gas (GHG)** emissions reduction plan developed **by and for the community**
- ✓ January 2020 – July 2021: Community planning process
- ✓ September 2021: Accepted by the Board of Supervisors
- ✓ September 2021 – Present: **Implementation started** for many strategies, while simultaneously writing the **Implementation Plan**
- December 2022: CECAP Implementation Plan
- Achieving CECAP’s emissions reductions goals is a long-term shared responsibility



How does CECAP relate to other environmental plans and policies?

Plan or Policy Name	What?		Who?	
	Emissions Reduction 	Resilience 	Government Operations 	Community Action 
Environmental Vision	●	○	●	○
Countywide Strategic Plan	○	○	●	●
Fairfax Green Initiatives Board Matters #1 and #2	●	○	●	○
Joint Environmental Task Force (JET) Final Report	●		●	
Carbon Neutral Counties Declaration	●		●	
Operational Energy Strategy (OES)	●		●	
Resilient Fairfax		●	●	●
CECAP & CECAP Implementation Plan	●		○	●

CECAP is focused on emissions reduction by and for the community (rather than government operations).

○ = Partially included, but is not the primary focus of the plan, and/or addressed only in a general, non-specific way.

● = Included

What are the goals of CECAP?

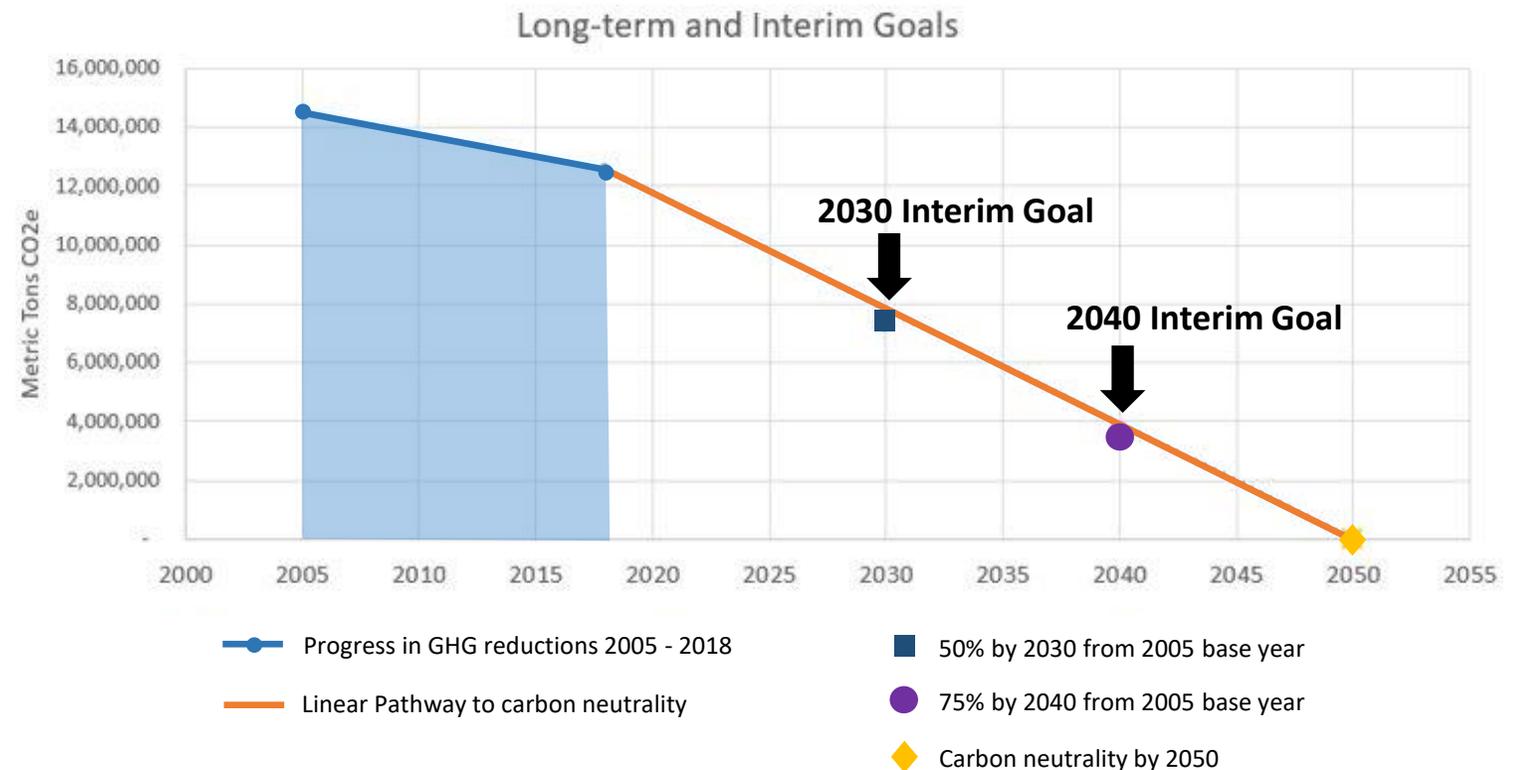
- **Overall CECAP Goal:** Carbon neutrality by 2050, with 87% reduction in total greenhouse gas (GHG) emissions from 2005 level

- **Interim Goals:**

- 2030: 50% reduction
- 2040: 75% reduction

- **Sector Specific Goals:**

- Buildings and Energy Efficiency
- Energy Supply
- Transportation
- Waste
- Natural Resources



Community-based Approach to Implementation

	<h2>1. Climate Champions</h2> <ul style="list-style-type: none"> Local individuals, businesses, and organizations leading their own meaningful climate action initiatives and inspiration to others. May be independent from or complement county programs. County role: identify, bolster, support, and celebrate to inspire more action.
	<h2>2. Community Programs and Partnerships</h2> <ul style="list-style-type: none"> The county leads and supports programs to empower individuals, businesses, and organizations to take climate action throughout the community. County role: lead, nurture, cultivate, and catalyze action.
	<h2>3. County Government Operations</h2> <ul style="list-style-type: none"> The county government leads by example, working towards carbon neutrality for county government buildings and operations. Carbon Neutral Counties Declaration Operational Energy Strategy



1. Climate Champions - Pilots

Faith-based and Non-Profit Community Pilot

Goal: Accelerate climate action in faith-based communities through increased energy efficiency, electrification, renewable energy use, and natural resource enhancements on properties owned by places of worship.

Lead: Faith Alliance for Climate Solutions (FACS)

Steps:

- Identify priority projects and resources for implementation
- Work in partnership with FACS to develop guide for broad-based implementation
- Disseminate guidance
- Convene roundtable of community non-profits to identify service gaps for climate-action implementation and future pilots

Business/Industry Sector Pilot

Goal: Creation of a best practices guide for emissions reduction in the in the industry specific sector.

Lead: Hospitality Sector, Visit Fairfax

Steps:

- Research and summarize existing guidance and standards in industry
- Hospitality roundtable
- Peer-to-peer guidance that identifies opportunities to expand and expedite program implementation
- Leverage Green Business Partner Program and other industry/business associations to disseminate guidance and promote other industry-specific roundtables



1. Climate Champions - Initiatives

Individual Outreach Campaign

- Goal: Create a network of climate champions by connecting community members to help others adopt climate-friendly behaviors
- Lead: Individuals, HOAs, Associations, etc.
- County provides support and platform to identify & showcase climate champions
- Implement through the Carbon-Free Fairfax educational and outreach campaign

Guide and Checklist

- Goal: Inspire climate action through simple tools to replicate individual successful actions for broader, mainstream implementation
- Lead: Community-wide
- User-friendly checklist, range of free to \$\$\$ cost actions
- Implemented through Carbon-Free Fairfax. Green Business Partners Program, business and organization-based pilots



2. Community Programs and Partnerships



3. Government Operations

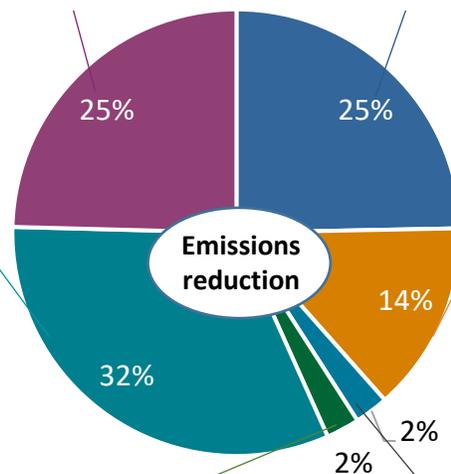
Energy Supply (24.6%)

County Operations	For Residents	For Businesses
<ul style="list-style-type: none"> ✓ DPWES Capital Facilities Installations ✓ ESCO ✓ Operational Energy Strategy ✓ Pitch and Pilot ✓ Solar PPA and Solar Game Plan ✓ Sustainable Development Policy for Capital Projects 	<ul style="list-style-type: none"> ✓ Carbon Free Fairfax <input type="checkbox"/> Green Bank ✓ Green Building Recognition ✓ Pitch and Pilot ✓ Solar Education ❖ Solarize ✓ Solar Tax Incentives ✓ Solar Fee Relief ❖ Numerous non-profits 	<ul style="list-style-type: none"> ✓ C-PACE ✓ Green Building Recognition <input type="checkbox"/> Green Bank ✓ Green Business Partners ✓ Pitch and Pilot ✓ Solar Tax Incentives ✓ Solar Fee Relief

Buildings and Energy Efficiency (24.7%)

County Operations	For Residents	For Businesses
<ul style="list-style-type: none"> ✓ DPWES Capital Facilities Installations ✓ ESCO ✓ Operational Energy Strategy ✓ Pitch and Pilot ✓ Sustainable Development Policy for Capital Projects 	<ul style="list-style-type: none"> ✓ Carbon Free Fairfax ✓ Conserve Kits <input type="checkbox"/> Green Bank ✓ Green Building Recognition ✓ HomeWise ✓ Pitch and Pilot ✓ Thermal Cameras 	<ul style="list-style-type: none"> ✓ C-PACE <input type="checkbox"/> Green Bank ✓ Green Building Recognition ✓ Green Business Partners ✓ Pitch and Pilot

2 & 3: Programs & Operations that Contribute to Carbon Neutrality



Transportation (32.1%)

County Operations	For Residents	For Businesses
<ul style="list-style-type: none"> ✓ EVs and fleet electrification ✓ Operational Energy Strategy ✓ Pitch and Pilot 	<ul style="list-style-type: none"> ✓ Carbon Free Fairfax <input type="checkbox"/> Charge Up Fairfax (EVs) ✓ FCDOT Programs <input type="checkbox"/> Green Bank ❖ Numerous non-profits 	<ul style="list-style-type: none"> ✓ FCDOT Programs <input type="checkbox"/> Green Bank ✓ Green Business Partners ✓ Pitch and Pilot

Emerging Technology (13.8%)

County Operations	For Residents	For Businesses
<ul style="list-style-type: none"> ✓ DPWES Capital Facilities Installations ✓ ESCO ✓ Operational Energy Strategy ✓ Pitch and Pilot 	<ul style="list-style-type: none"> <input type="checkbox"/> Green Bank ✓ Green Building Recognition ✓ Pitch and Pilot ❖ Numerous non-profits 	<ul style="list-style-type: none"> ✓ C-PACE <input type="checkbox"/> Green Bank ✓ Green Building Recognition ✓ Green Business Partners ✓ Pitch and Pilot

Natural Resources (2.4%)

County Operations	For Residents	Businesses
<ul style="list-style-type: none"> ✓ Sustainable Development Policy for Capital Projects ✓ TPPF 	<ul style="list-style-type: none"> ✓ DPWES Programs ✓ FCPA programs ❖ NVSWCD programs <input type="checkbox"/> Tree Canopy Program ✓ TPPF ❖ Numerous non-profits 	<ul style="list-style-type: none"> ✓ Green Building Recognition ✓ Green Business Partners

% = A sector's portion of the total emissions reductions or absorption needed to reach carbon neutrality by 2050, as modeled and described in CECAP.

- ✓ = Existing county initiative
- ❖ = Existing initiative by county partner
- = Pending county initiative

Note: In addition to these programs, there are numerous ongoing updates to the county's rules, regulations, plans, and policies to reach the county's climate goals, such as planned updates to the Comprehensive Plan and County Codes.

Waste (2.4%)

County Operations	For Residents	For Businesses
<ul style="list-style-type: none"> ✓ Operational Energy Strategy ✓ Zero Waste 	<ul style="list-style-type: none"> ✓ DPWES programs ✓ Operation Stream Shield <input type="checkbox"/> Zero Waste for community ❖ Numerous non-profits 	<ul style="list-style-type: none"> ✓ Green Building Recognition ✓ Green Business Partners

CECAP Implementation Plan

- **Introduction**
- **Background**
- **CECAP Implementation Plan Actions**
 - Buildings and Energy Efficiency
 - Energy Supply
 - Transportation
 - Waste
 - Natural Resources
- **Appendix A: Program Factsheets**
- **Appendix B: CECAP Recommendation Tracking**
(To cross-reference the recommendations from CECAP & the actions in the CECAP Implementation Plan)

Fairfax County CECAP Implementation Plan

Implementing the Community-Wide Energy and Climate Action Plan (CECAP) to Achieve Community Carbon Neutrality by 2050













December 2022

A Fairfax County, VA publication

CECAP: Sectors, Strategies, GHG Emission Reductions

Buildings and Energy Efficiency



Strategy 1: Increase energy efficiency and conservation in existing buildings.

Strategy 2: Electrify existing buildings.

Strategy 3: Implement green building standards for new buildings.



Emerging Technologies



Energy Supply

Strategy 4: Increase renewable energy in electric grid.

Strategy 5: Increase production of onsite renewable energy.

Strategy 6: Increase energy supply from resource-recovered gas, hydrogen, and power-to-gas.

Transportation



Strategy 7: Increase electric vehicle (EV) adoption.

Strategy 8: Support sustainable land use, active transportation, public transportation, and transportation demand management (TDM) to reduce vehicle-miles traveled.

Strategy 9: Increase fuel economy and use of low-carbon fuels for transportation.

Waste



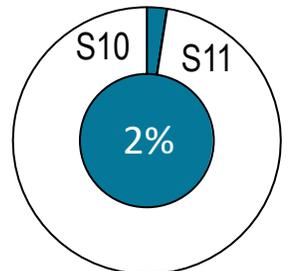
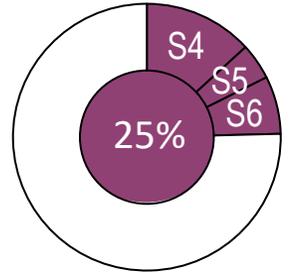
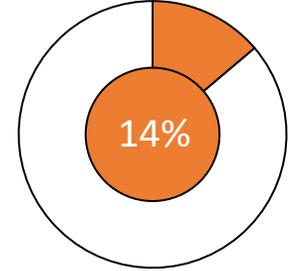
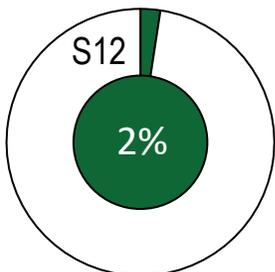
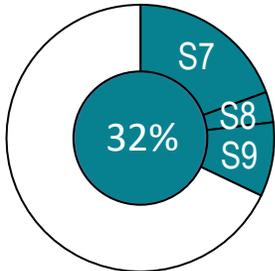
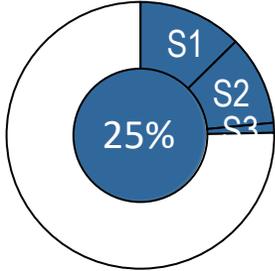
Strategy 10: Reduce the amount of waste generated and divert waste from landfills and waste-to-energy facilities.

Strategy 11: Responsibly manage all waste generation, including collected residential and commercial waste, wastewater, and other items.

Natural Resources



Strategy 12: Support preservation, restoration, and expansion of natural systems, green spaces, and soil quality.



CECAP Implementation Plan Action Tables

- ✓ Organized by Sector
- ✓ Implementation Actions
 - Actions for the Community
 - Actions for the County
- ✓ CECAP Strategy #, for reference
- ✓ Program Name and Description
- ✓ Leads and Partners
- ✓ Resilient Fairfax Co-benefits
- ✓ Current Status
- ✓ Timeframe Initiated
- ✓ Duration

Implementation Action	CECAP Strategy # (s)	Program Name (s)	Program Description	Leads and Partners	Resil. Eff.	2022 Status	Timeframe Initiated or Continuing	Duration (years)
<p>Buildings and Energy Efficiency</p>  <p>Modeled contribution to emissions reduction: 24.7% CECAP Strategies in this sector:</p> <ol style="list-style-type: none"> Increase energy efficiency and conservation in existing buildings: 12.6% Electrify existing buildings: 10.9% Implement green building standards for new buildings: 1.2% <p>CECAP Sector Goals</p> <ul style="list-style-type: none"> All new, eligible buildings in the county will have a commitment to green building; and Retrofit at least 100,000 housing units with energy efficiency measures by 2030. 								
Actions that Apply to the Community								
BEE.1: Develop and implement a broad-based community outreach and education campaign to reduce greenhouse gas emissions (i.e., take climate action).	1, 2	Carbon-Free Fairfax	See BEE.11, ES.1, T.1, W.3, NR.2. The county launched 8 education and outreach campaigns in 2022 under the umbrella program Carbon-Free Fairfax and include: Audits All Around; Too Hot, Too Cold, Just Right; Small Actions, Big Impact; EVs from Every Angle; It's Electric, Explore Solar Systems; Know Your Numbers; and Anything But Driving. Carbon-Free Fairfax is the public education and outreach component to advance CECAP goals and strategies across all sectors. The initial outreach goal for Carbon-Free Fairfax between February 2022 and June 2023 is to reach 100,000 county residents and other stakeholders with relevant educational materials and engagement opportunities (e.g., web materials, webinars). The county will identify and recognize Individual Climate Champions through the existing Carbon-Free Fairfax campaign in social media campaigns and video testimonials.	OEEC, Board member offices, Faith Alliance for Climate Solutions (FACS), Sierra Club, EQAC and other county organizations	CRC.2 b	Ongoing	2023-2024	10+
		Conserve (Energy) Kit	Fairfax County libraries launched the Conserve kit in 2022 which provides county residents with basic tools and supplies to help address energy efficiency					

Program Factsheets (Appendix A)

- 1–2-page sheets that provide links, resources, and more information on high-priority programs and initiatives.
- Each factsheet includes:
 - ✓ **Overview:** An overview of the program or topic, including links to resources where applicable.
 - ✓ **Partnerships and Champions:** The role of partnerships and champions for that program or topic.
 - ✓ **Relevance:** How the program or topic supports CECAP and OES implementation.

OVERVIEW



Charge Up Fairfax is a new program the Office of Environmental and Energy Coordination (OEEC) is establishing to promote the adoption of electric vehicles (EVs) and facilitate shared EV charging in homeowners' and condominium associations (HOAs). The program will help HOAs overcome the unique challenges of common areas.

LAND USE CODES, POLICIES, AND PLANS

OVERVIEW



Fairfax County's land use codes, policies, and plans are relevant to climate action because they guide the development of our neighborhoods, commercial and industrial areas, transportation systems, public facilities, and natural areas. When the county is laid out in a way that makes it easier to live sustainably,

FAIRFAX COUNTY TREE PROGRAMS



OVERVIEW: Trees are a valuable piece of the climate puzzle. Trees absorb carbon dioxide (CO2) and other emissions, removing about **4.5 tons of pollution each year in Fairfax County**. Trees also provide many "co-benefits," such as improved quality of life, public health, biodiversity and habitat, air and water quality, recreational and economic benefits, energy savings through shading, stormwater absorption, and reduced Urban Heat Island effects.



ROLE OF PARTNERSHIPS AND CHAMPIONS: There are numerous existing tree programs and policies in Fairfax County. Successful tree initiatives require a web of action by government agencies, community partners, and business partners. Together, we can provide healthy, intelligently located, and abundant trees for Fairfax County's population of 1.14 million.

Leaders	Existing Tree Initiatives
Government & Agency Partners	Fairfax County departments and partner agencies, including the Department of Public Works and Environmental Services (DPWES) Urban Forest Management Division (UFMD) , Fairfax County Park Authority (FCPA) , Northern Virginia Soil and Water Conservation District (NVSWCD) , and Virginia Department of Forestry (VDOT) provide a range of tree programs, including the Allen Invaders Program , Buy Virginia Trees , NVSWCD Programs , Park Volunteer Programs , Tree Planting and Preservation Fund (TPPF) , Tree Planting at Your School , Trees Please , and Watch the Green Grow . Additionally, these entities enforce tree rules and protections , conduct tree planting, maintenance, and science, and provide a range of tree-related education and resources.
Community Partners	There are many tree programs provided by community partners in Fairfax County, including (but not limited to) those by: the Arbor Day Foundation , Audubon Naturalist Society , Earth Sangha , Fairfax ReLeaf , Falls Church Neighborhood Tree Program , McLean Trees Foundation , Plant NOVA Natives , Plant NOVA Trees , VCE Master Gardeners , and Virginia Native Plant Society , among others.
Business Partners	Business participation is critical to the success of our tree canopy. Private sector entities can be leaders in tree health by taking responsibility during the development process, during long-term tree maintenance, by inspiring others (Green Business Partners), and through their own community programs, such as Dominion's Project Plant It .

Fairfax County has an opportunity to work with our partners to expand and leverage existing tree programs and policies to meet our tree canopy and emissions reduction goals in Fairfax County.

- **New program: Fairfax County Tree Canopy Program:** The Fairfax County Tree Canopy Program will complement, streamline, and fill gaps in existing tree programs and advance the county's tree canopy goals. The program is envisioned to fund and facilitate tree plantings throughout the community, including on commonly owned land of homeowners' and condominium associations (HOAs), at schools, and on other publicly and privately owned lands. This program will be a joint effort between OEEC and the UFMD of DPWES, with possible administration by a non-profit organization. Communities most in need will be prioritized.
- **Boosting existing programs:** Fairfax County will promote and boost existing tree programs by our partners.
- **Pursuing updates to tree-related county codes and policies:** Fairfax County is pursuing potential updates to [tree-related codes and policies](#) to improve the health and protection of trees in the county.

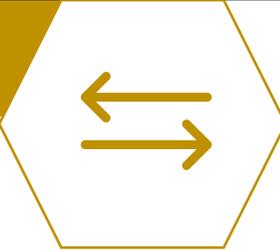


HOW THESE INITIATIVES SUPPORT CECAP IMPLEMENTATION: These programs will support the expansion of the county's tree canopy and Strategy 12 of the [Community-wide Energy and Climate Action Plan \(CECAP\)](#). The implementation actions under Strategy 12 are expected to lead to absorptions and reductions of 251,000 MT of carbon dioxide equivalent emissions by 2050. While this is just 2.4 % of the emissions reductions needed to achieve carbon neutrality goal by 2050, it is an important piece.

Sector	CECAP Strategy Number and Name
Natural Resources	12: Preservation, Restoration, and Expansion of Natural Systems, Green Spaces, and Soil Quality

Comp. Plan	Tree Policies	Zoning
X		
X		X
X		X
X	X	X
X	X	X

Multi-Sector Initiatives



Many of our most promising programs relate to **multiple** CECAP sectors.

	<ul style="list-style-type: none"> • Climate Champions <ul style="list-style-type: none"> ○ Individuals, businesses, and organizations taking meaningful climate action in Fairfax County. 	
	<ul style="list-style-type: none"> • Fairfax County Green Bank <ul style="list-style-type: none"> ○ Clean energy financing, resources, and trusted advising to catalyze local investments. Includes energy efficiency, renewable energy, electric vehicles 	
	<ul style="list-style-type: none"> • Green Business Partners <ul style="list-style-type: none"> ○ Encourages, elevates, supports, and catalyzes green business in Fairfax County. 	
	<ul style="list-style-type: none"> • Carbon Neutral Innovation Challenge (“Pitch and Pilot”) <ul style="list-style-type: none"> ○ A competition for carbon neutral innovation, followed by a pilot for the winning company. 	
	<ul style="list-style-type: none"> • Carbon-Free Fairfax <ul style="list-style-type: none"> ○ Climate education, engagement, outreach, and resources for residents 	

Buildings and Energy Efficiency (24.7%)



CECAP Sector Goals:

- All new, eligible buildings will have a commitment to Green Building
- Retrofit at least 100,000 housing units with energy efficient measures by 2030

For Community

- Comprehensive Plan & Zoning Ordinance updates to incentivize green buildings
- Building Code advocacy at state level
- HomeWise, Thermal Camera Loan Program, other energy efficiency programs & incentives



For County Government Facilities

- Operational Energy Strategy (OES)
- Sustainable Development Policy
- ESCO upgrades, Energy Tracking & Improvements



Energy Supply (24.6%)



The [Virginia Clean Economy Act](#) requires **Dominion Energy Virginia** and **American Electric Power** to produce their electricity (for the energy grid) from 100% renewable sources by 2045 and 2050. Smaller on-site solar projects also help us achieve carbon neutrality.

For Community

- Advocacy for increasing renewable energy in the grid
- [Solarize Fairfax County](#)
- [Solar Fees Waived](#)
- [Solar Zoning Flexibility](#)
- [Tax Exemption \(County\)](#) , [Tax Credits \(Federal\)](#)
- [Solar Information](#)



For County Government Facilities

- **Solar installations on county buildings, through**
 - 1. PPAs, 2. Solar on new buildings, 3. Solar added to existing buildings through ESCOs
- **Projects in progress:**
 - Sully Community Center, Woodlawn Fire Station, Reston Fire Station, I-95 Landfill solar
 - Many projects in design stages



Transportation (32.1%)



CECAP Sector Goals:

- Increase transit and non-motorized commuting to 30% (including teleworking) by 2030.
- Increase plug-in hybrid electric vehicles (PHEVs) and battery electric vehicles (BEVs) to at least 15% of all light-duty vehicle registrations by 2030 and 42% by 2050.

For Community

- Charging Stations & Charge Up Fairfax
- EV adoption education and outreach
- ActiveFairfax Transportation Plan
- Transportation Planning, sustainable land use



For County Government Facilities

- County Fleet Electrification: 174 hybrid, 24 all-electric as of 2022
- Fairfax Connector: 8 electric buses, 184 with reduced fuel consumption as of 2022
- EV Charging Stations



Waste (2%)



CECAP Sector Goal: Achieve zero waste by 2040, defined as 90% waste diverted from landfill/ incineration.

For Community

- Existing DPWES Solid Waste Education Programs, 5Rs, Glass Recycling (Purple Can Club), Operation Stream Shield, Litter Task Force, organic waste
- Zero Waste plan for community (future)
- Considerations of pay-as-you go models, contract improvements, incentive proposals, and more



Credit: DPWES

For County Government Facilities

- Zero Waste Plan (October 2021)
- Sustainable Procurement Program
- Supply Chain Corporate Social Responsibility
- Pilot programs



Divert 90% of waste from disposal.*



Reduce the overall waste generated by 25% from 2018 levels.

% as based on tonnage/weight

Credit: DPMM

Natural Resources (*Absorb Carbon*) (2.4%)



CECAP Sector Goal: Expand tree canopy to 60% with a minimum of 40% tree canopy coverage in each census block by 2030, and minimum of 50% tree canopy coverage in every census block by 2050.

For Community

- Numerous existing tree programs in Fairfax County by the county, NVSWCD, non-profits, state government, and other organizations
- Numerous existing education programs from NVSWCD, UFMD, FCPA, and more
- UFMD canopy tracking, evaluation, plan reviews
- New pilot “**Fairfax County Tree Canopy Program**” to fill gaps, i.e. HOAs
- Analysis of existing natural resource programs and policies, Consolidated Natural Resource Management Plan
- Community champions and community-led pilots for natural resources

For County Government Facilities

- Numerous existing natural resource protections and initiatives at county and FCPA facilities
- Tree Preservation and Planting Fund
- Advocacy for legislative authority at state



Next Steps

- **Continue implementation**
 - (e.g, Climate Champion Pilots, GBP Forum, Green Bank, ActiveFairfax, Charge-up Fairfax, TPPF, etc.)
 - [Carbon-Free Fairfax](#)
- **Tracking and reporting progress**
 - [Climate Action Dashboard](#)
 - [MWCOG GHG Inventories](#)
- **Requested BOS Action:**
 - No direct fiscal impact will result from the Board of Supervisors adoption of the CECAP Implementation Plan.
 - Proposed CECAP Implementation Plan actions that require resource needs beyond existing resources will be put forward as part of the County’s annual and/or quarterly budget processes.

Sector	Ongoing (2022-2023)	New (2023-2024)	Future (2025-2030)	Future (2030+)
 Buildings and Energy Efficiency	19	3	3	0
 Energy Supply	10	6	2	1
 Transportation	14	7	1	0
 Waste	12	2	5	0
 Natural Resources	6	6	2	0