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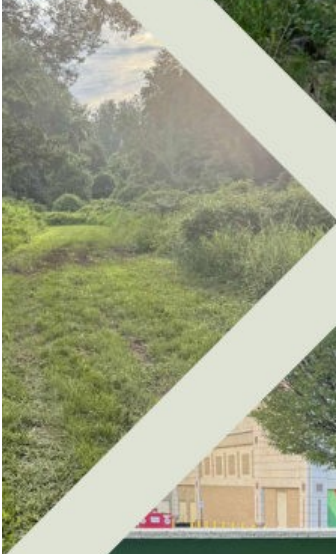
2025 ANNUAL REPORT ON THE ENVIRONMENT



FAIRFAX COUNTY ENVIRONMENTAL
QUALITY ADVISORY COUNCIL



ELECTRIC
VEHICLE
CHARGING
STATION



First image, top left corner - image of a stream at Lake Fairfax Park

Second image, slightly lower and to the right of the first - image of Potomac River from Riverbend Park

Third image, lower and to the left of the second - image of clearing from Leigh Mill-Ramey Meadows Park

Fourth image, lower and to the right of the third - image of electric vehicle charging station in Reston Town Center

Fifth image, lower and to the left of the fourth - image of the aurora borealis visible from Parrish Farm Lane in October 2024

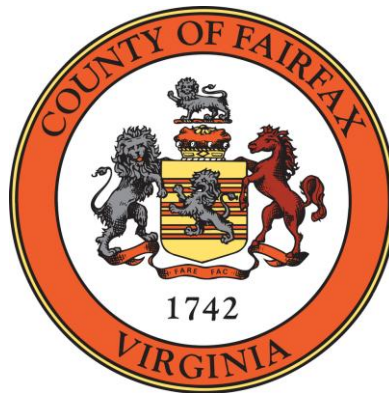
Sixth image, lower and to the right of the fifth - image of trees from Seneca Regional Park

Seventh image, higher and to the right of the sixth - image of forested pathway from Foxstone Park

Eighth image, lower and to the right of the seventh - image of trees from Riverbend Park

Cover design and photos by [Nishka Shah](#), Student Representative to the Fairfax County Environmental Quality Advisory Council

ANNUAL REPORT on the ENVIRONMENT 2025



Fairfax County, Virginia

Environmental Quality Advisory Council

December 2025

ACKNOWLEDGEMENTS

Producing the Annual Report on the Environment (ARE) truly is a team effort by all the members of the Environmental Quality Advisory Council (EQAC). Each chapter is authored by one or more EQAC members.

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EXECUTIVE SUMMARY

Overall, the Environmental Quality Advisory Council (EQAC) finds that the state of the environment in Fairfax County is good. The county has programs to address climate change and other environmental priorities. Residents and businesses expect a healthy environment, but further work will be needed to meet standards.

EQAC appreciates that FY2027 will be another challenging budget year, which has been made even more difficult and uncertain by the proposed cancellations of many federal grants. The loss of these grants, originally funded by the Inflation Reduction Act and the Infrastructure Investment and Jobs Act, will adversely impact the county's climate-related efforts. EQAC appreciates the importance of this work for the county's future. For this reason, EQAC asks that the Board of Supervisors retain its environmental programs by pursuing new funding and seeking any of the "cancelled" federal grants that become available as a result of court challenges and other changes.

EQAC Priority Recommendations

- **Climate and Resilience.** Maintain progress for the Community-Wide Energy and Climate Action Plan (CECAP) and Resilient Fairfax.
- **Data Centers.** Develop a plan for data centers that mitigates impacts to local residents, supports progress towards carbon neutrality, and avoids unacceptable impacts to water resources.
- **Smart Growth.** Support "Smart Growth" to encourage businesses and high-density residential developments, to locate along public and non-motorized transportation corridors (e.g., Metrorail).
- **Zero Waste.** Support a county-wide zero waste plan and its implementation.
- **Transportation.** Support Transit-Oriented Development and the use of public transit (and other relevant efforts) to reduce the need for single occupancy vehicle trips.
- **Heat Islands and Trees:** Enhance the tree canopy in high-density residential and commercial areas, especially along transit corridors, and where mitigating actions will also offer co-benefits like an improved quality of life, mental health, and community aesthetics.

They are supported by the 17 recommendations in the scorecard.

Legislative Priorities and Memoranda

In addition to the ARE, EQAC provides timely recommendations to the Board of Supervisors through memoranda and Legislative Recommendations, listed in Appendix B. Topics covered in the 2025 legislative recommendations, in priority order, are:

- **Data centers:** The energy and water challenges associated with data centers must be addressed at a state or possibly regional level. A critical first step would be to require public reporting of planned and measured use of energy and water. Similarly, reporting of estimated and measured noise levels at facility boundaries is needed.
- **Forever chemicals:** Per- and polyfluoroalkyl substances (PFAS), which are also known as forever chemicals, are common in many consumer products. Virginia should join with other states that have already banned these chemicals in consumer products.
- **Recycling organic and food waste:** Organic and food waste constitutes a significant part of the waste stream in Fairfax County. States and many localities (including multiple neighboring Virginia counties) have adopted programs to recycle food waste. EQAC encourages the Board to pursue legislation that will allow the county to require such food waste recycling.
- **Single use plastic bag ban:** Fairfax County has a 5-cent tax on single use plastic bags, which has cut plastic bag use by 7.5%. A tax of only 5 or 10 cents will not substantially reduce plastic bag use and the resulting litter in our roadways, streams and woods. Bans are used widely in other states and internationally because they are much more effective. EQAC recommends seeking legislative authority to institute such a ban.
- **Building energy efficiency:** Buildings account for 40% of Fairfax GHG emissions. The county is limited in its ability to require building energy efficiency. Efficiency is not only important to reducing GHG emissions but will also reduce energy use and associated costs. The Commonwealth should either adopt stronger energy efficiency standards in the Uniform Statewide Building Code or permit local jurisdictions to require more stringent standards.
- **Solar Energy:** The solar energy legislative recommendation would provide localities the ability to require solar panels over parking lots and on building roofs. The electrical demands of data centers in Virginia have moved the state from an exporter of energy to an importer of energy and now power

plants that use fossil fuels are being pressed into service to help meet energy demands.

Successes!

EQAC appreciates the Board's attention to the environment. In particular, EQAC thanks the Board for directing the County Executive to develop recommendations to address illegal dumping. EQAC also appreciates the Board Matter on Unified Sanitary Districts (USDs) as EQAC has sought a more comprehensive recycling program with higher recycling rates. The development of options considering USDs, non-USD and perhaps hybrid options should generate information that allows a consensus for moving forward.









EQAC coordinated with the Planning Commission in a review of the Comprehensive Plan update. The Planning Commission's efforts to bring different county advisory groups together to facilitate this review are commendable.









Final Remarks

Fairfax County is fortunate to have a strong base of environmental policies, talented county staff to meet these challenges, and a Board that has invested in the environment to improve the quality of life for all. We thank the Board of Supervisors for its leadership on environmental issues. While EQAC has recommendations to adjust programs and undertake additional work, we see these recommendations as important feedback that the Board can use to inform adjustments to programs.










2025 Annual Report on the Environment Scorecard

Scorecard Symbols Key

	New recommendation for this year		Making progress		Likely a budget item		Recommendation is stalled
	Recommendation has been included in the previous 2 years		Recommendation has been included in the previous 3 years		Recommendation has been included in the previous 4 years		Recommendation has been included in the previous 5 years

Number	Chapter	Recommendation	Status
2025-1	Land Use	Promote Transit Oriented Development residential housing in the Comprehensive Plan and zoning to encourage affordable housing and innovative housing types such as accessory living units, access to green spaces, and active transportation (pedestrian and bikes).	
2025-2	Land Use	Provide additional incentives to recycle vacant office buildings and office parks to other desired uses, including mixed residential and commercial use.	
2025-3	Land Use	Develop options to provide increased tree planting, especially tree planting in heat islands to align with the county’s One Fairfax Policy.	
2025-4	Transportation	Further support efforts by Fairfax County and regional partners to reduce use of single-occupancy vehicles. <i>Similar recommendations appeared in 2024 ARE in the Air Quality Chapter.</i>	
2025-5	Transportation	Provide the resources and funding needed to complete and implement the ActiveFairfax Transportation Plan in a timely manner, including providing a staff person for the Safe Streets for All Program.	
2025-6	Water	Fairfax County should enact a policy that, if data centers are approved with evaporative cooling, approval conditions should consider (1) Possible water reductions during periods of drought; (2) Use of recycled wastewater where feasible; and (3) No return of any “blowdown” to the Occoquan Reservoir via UOSA or surface streams.	
2025-7	Water	Increase funding for stormwater management either by raising the Stormwater Service District rate or by other means to provide a sufficient, responsible stormwater infrastructure maintenance program. <i>Reworded from 2024 recommendation.</i>	
2025-8	Waste	Study Unified Sanitary Districts and any other policies that would enable DPWES to set uniform waste reduction and recycling performance standards and to monitor progress toward zero waste goals. USDs or other policies could provide the County with the ability to enforce standards and implement consistent programs. Means such as USDs would allow Fairfax to improve recycling services and employ transparent performance reporting.	

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2025-9	Waste	Support development and implementation of the Zero Waste Plan through the annual County operations budgets and five-year CIPs and not rely on user fees or a separate zero waste assessment to fund implementing zero waste. <i>Variation of previous recommendations.</i>	
2025-10	Parks, Ecology, & Wildlife	Authorize the development of a consolidated natural resource management plan that ensures frequent reliable data collection methods drive decision making for more equitable investment in ecological restorations and corridors.	
2025-11	Parks, Ecology, & Wildlife	Create or advocate more incentives to preserve tree canopy on private property and to promote environmental corridors to achieve a healthy, equitable tree canopy.	
2025-12	Climate & Energy	Regularly convene business leaders to share successes and expertise. The county should recognize these business leaders for accomplishments in reducing GHG emissions, energy efficiency and other environmental accomplishments in a manner that is meaningful to them.	
2025-13	Climate & Energy	The County should adopt a strategy for the siting of data centers. If hyperscale data centers are sought, a technology campus will help to insulate communities from noise and other impacts of data centers. <i>Water impacts are covered in recommendation 2025-6.</i>	
2025-14	Climate & Energy and Air Quality (2 chapters)	In order to support the county’s goals that 1) at least 15% of light-duty vehicle registrations be of electric vehicles by 2030, and 2) to reduce toxic air pollution from vehicle emissions (including school buses), the county should support the timely and effective implementation of its EV readiness strategy, including the development of a robust EV charging network so that residents of multifamily buildings and travelers will have convenient and low-cost EV charging options.	
2025-15	Climate & Energy	Prioritize climate funding and provide adequate funding for both CECAP and Resilient Fairfax to meet goals in the annual operations and CIP Budgets. <i>Variation of recommendations made in previous years.</i>	
2025-16	Air Quality	The County should continue, and possibly expand, the Green Your Lawn Events and increase outreach and incentives to county residents to: <ul style="list-style-type: none"> • Make the transition to electric-powered lawn equipment • Only use gasoline-powered landscaping equipment on good air quality days • Use organic fertilizers and pesticides • Leave grass clippings to make their own mulch 	
2025-17	Spotlight on FCPS	Fairfax County should coordinate with efforts by FCPS to increase the use of electric buses and provide charging stations.	

INTRODUCTION

The Environmental Quality Advisory Council (EQAC) comprises 14 volunteer members who are appointed by the Board of Supervisors to advise the Board on environmental issues. The Annual Report on the Environment (ARE) – a requirement of EQAC’s charter – is intended to provide a big picture view of how key environmental programs are working and identify areas that require attention. EQAC recommendations, annual reports on the environment, meeting announcements and minutes are all located at the [EQAC website](#).

Fairfax County EQAC provides informed, independent environmental advice to the Board of Supervisors to promote sound decision-making.

EQAC believes that it is important that the progress and completion and benefits of the county’s work be shared with residents and businesses so that progress can be appreciated. Providing the information on programs and funding to support environmental priorities is important so that residents and businesses can see county investments are improving the environment and quality of life. EQAC recommends that the county provide the following information on a user-friendly county website: the assignment of responsibility, a budget (which might be expended over multiple years), performance metrics with time frames, and deliverables. Without these basic project management components, it is difficult to assess the extent to which a project is a sound expenditure of tax dollars.

The 2025 ARE has combined the Parks and Natural Resources chapters into one chapter, which is titled “5. *Parks, Ecological Resources, and Wildlife.*” This decision reflected EQAC’s view that combining these two chapters would help to provide greater continuity on issues.

EQAC’s primary approach to information collection is through county staff. EQAC is routinely briefed by county staff, external organizations (generally nonprofit), and university researchers on environmental issues of concern in Fairfax County. EQAC also benefits from public comments that were offered during the public comment session in January on the Annual Report as well as comments offered to EQAC in meetings and contact with individual EQAC members. EQAC also coordinates with other county Boards, Authorities and Commissions that address environmental issues. In 2024 and 2025, EQAC engaged with the Planning Commission’s Environmental Committee in reviewing the Environmental Policy of the Comprehensive Plan. EQAC also met with the Park Authority twice to better understand county environmental challenges faced by the Parks Authority.

1. LAND USE

[Board of Supervisors' Environmental Vision](#)

“The county will continue to refine and implement land use policies and regulations that accommodate anticipated growth and change in an economically, socially, and environmentally sustainable and equitable manner while revitalizing older commercial centers, protecting existing stable neighborhoods, supporting sustainability, and supporting a high quality of life.”

Introduction

With over a million residents, continued population growth, and little of its almost four hundred square miles undeveloped, land use policies in Fairfax County are critical in determining the livability and quality of life for future residents.

In Fairfax County land use decisions are guided and implemented through the Comprehensive Plan, which consists of the Policy Plan, four Area Plan volumes, and a Plan Map. The Zoning Ordinance is the mechanism by which the Comprehensive Plan is implemented.

Fairfax County is currently undertaking a comprehensive update to its Policy Plan, known as "[Plan Forward](#)," which involves community feedback and aims to align the Policy Plan with other countywide strategies and objectives. Fairfax County released the draft land use text of Plan Forward in May of 2025 and sought public feedback. The next draft of the land use text is anticipated to be released on September 10. Public hearings on the revised Policy Plan Elements, including the Land Use Element, are expected in the fall 2025.

EQAC supports the Plan Forward initiative and provided comments on the May 2025 draft of the land use section. The timing of this report is such that it is running in parallel with development of the 2025 EQAC Annual Report on the Environment (ARE) Land Use Chapter. Therefore, EQAC cannot incorporate or be responsive to specific elements of the final version of Plan Forward. Given EQAC's review of the draft Plan Forward Land Use section and EQAC's broad mandate to advise on environmental issues, we offer these land use challenges and recommendations.

Major Land Use Challenges in 2025

Promoting High-Density, Transit-Oriented Development (TOD) and Environmentally Friendly Affordable and Workforce Housing

Smart land use planning prioritizes high-density, mixed-use development near public transit to reduce vehicle miles traveled, improve air quality, and lower emissions. Fairfax County should reaffirm and strengthen its commitment to transit-oriented development (TOD), especially along the Metro corridors, while discouraging sprawl that undermines transportation goals. Development should include active, non-automobile transit such as bicycle and pedestrian walkways. The new concept in Plan Forward of [the Suburban Village Center concept](#) suggests a good model for concentrated mixed use, residential and commercial development that combines TOD and environmental sustainability.

A 2017 [Virginia Commonwealth University study](#) identified 15 “islands of disadvantage” -- clusters of census tracts where residents, disproportionately people of color, endure living conditions that take years off their lives. A [2023 follow-up study](#) found that, despite regional progress cutting poverty by 52% between 2009 and 2021, many of the “islands of disadvantage” did not share in this progress.

Fairfax’s [Urban Centers Policy](#) anticipates that 45% of job and housing growth between 2020-2040 should occur within ½mile of Metrorail. The Northern Virginia Regional Commission found numerous climate benefits of public transit TOD in its [2024 mode share survey, including significant reductions in the time people spend driving.](#) Concentrating density near stations curbs sprawl, preserves open space, and delivers cost-effective transit service.

TOD should also include affordable and workforce housing to ensure equitable access to transit and amenities. The draft Plan Forward recommends retaining development of Affordable Living Unit (ALU) and Workforce Dwelling Unit (WDU) policies to promote equitable housing development for all residents of the county. Integrating green building practices, EV infrastructure, and active transportation options within these developments will further enhance their environmental performance and appeal. Transit-ready and transit-adjacent locations should also be prioritized for in-fill and redevelopment to make efficient use of land and infrastructure.

EQAC strongly supports the draft Plan Forward’s Housing and Neighborhood Livability policies, highlighting in particular [HNL 3. “Identify and execute creative opportunities to develop affordable housing throughout the county and especially in revitalization areas, including flexible criteria for accessory dwelling units, building reuse, and repurposing and establishing community land trusts in communities](#)

[that feature mobility options and walkable neighborhood amenities.” And HNL 7.” Expand innovative land development solutions, such as by-right accessory dwelling units, home sharing, co-housing, and smaller lot sizes, while incentivizing first floor or entry floor living, universal design, and energy efficiency.”](#)

Infill housing and small-footprint dwellings represent efficient, sustainable land use strategies that expand housing choices while minimizing environmental degradation, although concerns about increased impervious cover with infill development must be addressed. These forms of development, when concentrated near public transportation, typically occur near existing infrastructure and services, reducing the need for new roads, utilities, and long commutes. Infill development also offers opportunities to revitalize underutilized parcels and blend new housing into established neighborhoods.

By encouraging compact, walkable, and transit-accessible residential options, especially near green spaces and active transportation networks, the county can support its environmental, affordability, and equity goals. Recent additions to Zoning Ordinances have expanded options for expanding innovative housing types, such as accessory living units (ALUs), microhomes, and cottage courts. Development of ALUs should be further studied with the aim of promoting ALUs through development incentives, while also attending to risk of tree loss and stormwater concerns.

RECOMMENDATION: Promote TOD residential housing in the Comprehensive Plan and Zoning to encourage affordable housing and innovative housing types such as accessory living units, access to green spaces, and active transportation (pedestrian and bikes). *Recommendation 2025-1 Land Use*

Encouraging Adaptive Reuse of Vacant Office Buildings

With shifting work patterns and rising vacancies in office parks, Fairfax County faces both a challenge and a remarkable opportunity. Recycling underutilized office properties into vibrant mixed-use developments can address housing shortages, support local economies, and reduce environmental impacts compared to new construction on undeveloped land. These conversions should prioritize mixed residential development that includes significant affordable and workforce housing to meet pressing regional needs, while also integrating green infrastructure and community-serving amenities.

Reusing existing office buildings near transit advances the county’s sustainability goals by preserving land, reducing car dependence, and revitalizing stagnant commercial zones. Additionally, adaptive reuse supports embodied carbon reduction by reusing structural materials and minimizing demolition waste. Policy

incentives and planning guidance should explicitly prioritize this form of sustainable redevelopment.

[Office vacancies in Fairfax](#) hit 17% in 2023. The county's [Adaptive Reuse Program](#) seeks to promote the reuse of existing buildings by providing incentives, guidance, and reduced review timeframe. The draft Plan Forward Land Use element proposes guidance to allow increases to the floor area and height of buildings to be repurposed to facilitate these conversions as well as additional residential uses in parking lots to further create cohesive communities. An example of an innovative use of vacant warehouse space is the indoor vertical farm, [Area 2 Farms](#), that produces a wide range of vegetables for 300 residents within a 10 mile radius. [Objective two of the Healthy Communities Element](#) of Plan Forward specifically recommends food production such as urban farms, community gardens, and urban orchards as a component of the open space network within new and redevelopment. Adaptive reuse could reduce food deserts in the county, increasing availability of fresh food through urban agriculture.

RECOMMENDATION: Provide additional incentives to recycle vacant office buildings and office parks to other desired uses, including mixed residential and commercial use. *Recommendation 2025-2 Land Use*

Encourage Data Centers to commit to Higher Environmental Standards

The rapid expansion of data centers in Northern Virginia brings substantial energy, water, and environmental challenges. While recent Fairfax zoning amendments have set new standards for data centers, more could be asked from data center developers. Data center developers should be encouraged through zoning and proffers to energy efficiency, renewable energy use, sound mitigation, visual integration, and water conservation. Loudoun County's Board of Supervisors is grappling with the exceptional demands that data centers are making on electrical and water resources. Fairfax should learn from their experience and leadership. The Loudoun County Board of Supervisors approved [changes to its Comprehensive Plan and Zoning Ordinance](#) that make data centers a conditional use that now require an approved special exception application by the Board of Supervisors. This eliminates data centers as a "by-right" use in the county. "By-right" development refers to a use that is allowed within existing zoning permissions for that property. In addition to recent changes to the Zoning Ordinance, the draft Plan Forward recommends additional policy guidance and use-specific standards for data centers and utility substations to address concerns related to land use, compatibility, aesthetics, infrastructure, and natural and environmental resources. Data center and broader electrification demands are driving major changes to regional power infrastructure, including substations and transmission lines. To ensure this infrastructure is environmentally responsible and equitably sited,

Fairfax should collaborate closely with Dominion Energy and peer jurisdictions in Northern Virginia. Coordinated regional planning can avoid unnecessary environmental degradation, minimize community impacts, and promote strategic investments in clean, resilient energy systems.

A leadership role for the Northern Virginia Regional Commission could help align local government priorities, share data, and build a collective voice in discussions with utilities. Ensuring that new energy infrastructure supports—not undermines—the region’s climate and land use goals will require sustained engagement, transparency, and a strong advocacy position. Data center developers should be encouraged to meet high, aspirational standards of energy efficiency, non-polluting energy sources, water efficiency, aesthetics, and sound levels, as described on pages 28 to 31 of Plan Forward draft [Land Use criteria](#). Recent zoning changes require noise study. aesthetic requirements in most districts. Developers should be strongly encouraged to meet higher levels described in the draft Land Use criteria.

COMMENT: EQAC recommended the BOS include a 2026 legislative initiative on data centers that would require data centers to report on their energy and water use and provide quantitative information about their use of renewable energy.

Adopting a Heat Island Mitigation Policy

Urban heat islands (UHIs) disproportionately affect vulnerable populations, particularly lower-income residents, those living in substandard housing, and people working outdoors—and are projected to worsen due to climate change. These areas, dominated by impervious surfaces like roads and rooftops, absorb and re-emit solar heat more than natural landscapes, creating localized temperature spikes. NASA thermal imagery collected for [Resilient Fairfax](#) shows land surface temperatures in areas like Tysons Corner reach up to 15°F higher than nearby tree-covered neighborhoods. Heat islands were identified in every Supervisory district.

This increased heat is not only uncomfortable; it poses serious public health and environmental risks. Higher temperatures elevate energy demand for cooling and contribute to the formation of ground-level ozone, which exacerbates respiratory conditions and degrades air quality. Heat islands also intensify stormwater runoff and reduce overall livability. Fortunately, many of the most effective solutions—such as planting shade trees, installing vegetated or reflective roofs, and applying cool pavements—are well understood and can be integrated into development practices.

Fairfax County’s draft *Plan Forward* includes [Healthy Communities Objective 4](#), which encourages green infrastructure and climate-adapted development. Implementing a comprehensive Heat Island Mitigation Policy would reinforce these goals and advance both equity and resilience. Focus should be given to high-density

residential and commercial areas along transit corridors, where the impact is greatest and where mitigating actions—such as tree canopy expansion, solar canopies over parking lots, and reflective materials—can also offer co-benefits like improved air quality, mental health, and community aesthetics.

RECOMMENDATION: Develop options to provide increased tree planting, especially tree planting in heat islands to align with the county’s One Fairfax Policy.
Recommendation 2025-3 Land Use

COMMENT: EQAC submitted to the [BOS a memo \(June 13, 2025\)](#) recommending the County adopt a countywide Heat Island Mitigation Policy in the updated Comprehensive Plan and Zoning, encouraging tree planting in One Fairfax areas.

Incorporating Environmental Performance Requirements into Proffers

Fairfax County’s ongoing development offers a vital opportunity to integrate sustainability directly into land use practices. By recommending environmentally focused proffers and offering examples of well crafted, environmentally strong proffers, the county can advance climate and environmental goals while shaping the built environment to reflect community values. Exemplary proffers could demonstrate how developments can support energy-efficient construction, renewable energy adoption, EV charging readiness, green infrastructure, and active transportation. Proffer guidance and exemplary models would promote consistency and transparency, ensuring that environmental gains are not left to chance or negotiation.

Encouraging such proffers allows the county to respond to climate imperatives within the existing legal framework. As buildings are responsible for [49% of greenhouse gas emissions](#) in the county, encouraging improved building environmental performance in new developments is one of the most impactful steps the county can take to reduce its carbon footprint and enhance public health, resilience, and livability.

Fairfax County already tracks proffered conditions through the [PLUS Proffer Module](#)—over 1,400 environmental proffers have been logged since 2018, ranging from solar-ready roofs to EV charging conduits. The Planning and Land Use System (PLUS) is a new multi-agency platform for Fairfax County customers to complete their zoning, building, permitting or other land development processes online. Standardizing green proffer language would speed staff review and ensure developers deliver quantifiable benefits such as minimum ENERGY STAR® scores, rooftop solar commitments, or tree canopy targets.

COMMENT: EQAC believes it would be desirable that the Comprehensive Plan and Zoning updates encourage developers to offer environmental proffers that might include building energy efficiency, renewable energy, electric vehicle charging infrastructure, green space, and active transportation. Offering 'Model Environmental Proffer Guidelines' could encourage meaningful and accountable development proffers.

2. TRANSPORTATION

Board of Supervisors' Environmental Vision:

“A dependable, safe, efficient, accessible, and multi-modal transportation network is necessary to support the travel needs of Fairfax County residents now and into the future. The county will continue to develop policies and strategies that reduce the dependence on single-occupancy vehicle trips through smart development, efficient use of the transportation system, and by expanding the county’s bicycle, pedestrian and transit infrastructure. The county will pursue transportation strategies in support of regional attainment of air quality standards.”

Introduction

Transportation is a key element impacting the quality of life for Fairfax County residents, and transportation planning choices must be made which balance a myriad of concerns, including but not limited to convenience, cost, efficiency, health, equity, and environmental impact. Fairfax County residents and visitors are overwhelmingly dependent on automobile transportation due to the long distances that often must be traveled, neighborhoods designed for cars, as well as the lack of convenient or safe (actual or perceived) alternative options such as mass transit, bicycling, or walking. Yet it is this heavy dependence on automobiles that has resulted in some of the worst traffic congestion in the United States, and with that congestion large amounts of wasted time and productivity, as well as added pollution from vehicle emissions that degrades our air quality and contributes to climate change. [Data from INRIX shows the Washington, D.C. metropolitan area](#) as the 9th worst for congestion in the United States and 22nd worst in the world, with 62 hours lost each year to congestion and a cost of \$1,110 per driver.

Current Concerns

Heavy Use of Single-Occupancy Vehicles

There is a lack of reliable data available to fully understand the current use of different modes for transportation in Fairfax County. [Data from the American Community Survey](#) shows approximately 58% of workers used single-occupancy vehicles for transportation to work in 2023 (representing approximately 400,000 households). This number has remained relatively constant over the ten-year period

from 2013 to 2023. What are not included in this data are the many non-work trips taken in Fairfax County. Anecdotal information suggests that the number of trips made by single-occupancy vehicles in Fairfax County has greatly increased in the past 2-3 years with the fraction of travel (work and non-work) made by single-occupancy vehicles significantly higher than 58%. Such information suggests that traffic congestion is also no longer limited to traditional rush hour times but occurs throughout the day. In addition, safety issues such as aggressive driving (e.g., speeding well in-excess of the speed limit) and distracted driving (e.g., driving while looking at a cell phone or other mobile device) are considerable problems. Anecdotal information also indicates that county residents are continuing to adopt one or more of the many micro-mobility options such as bike share and scooters and that E-bike sales also expanded. Examples of approaches that Fairfax County has implemented to address the heavy use of single-occupancy vehicles include bikeshare expansions and promotions across the county along with Bicycle Friendly America Program promotions, partnership with [Best Workplace for Commuters](#), and Active Transportation promotional events such as Walk and Win Challenge and Bike to Work Day. Fairfax County did not provide EQAC with data to evaluate the extent to which its efforts to reduce single-occupancy vehicle use in the county are addressing the One Fairfax Policy.

RECOMMENDATION: Further support efforts by Fairfax County and regional partners to reduce use of single-occupancy vehicles. *Recommendation 2025-4 Transportation*

Why: Heavy use of Single-Occupancy Vehicles contributes to the significant traffic congestion in Fairfax County along with the resulting impacts to local air quality and increased emissions of Greenhouse Gases. Strategies to reduce use of Single-Occupancy Vehicles would help to support efforts on Transit-Oriented Development, use of public transit, and reduced Greenhouse Gas emissions. This recommendation should be considered in conjunction with EQAC's recommendation in its chapter on Land Use about promoting Transit-Oriented Development.

Public Transit

Fairfax County has significant transit infrastructure and ridership has increased over the past 1-2 years as the region recovers from the COVID-19 pandemic. For FY 26, Fairfax County contributions to Washington Metropolitan Area Transit Authority (WMATA) (Metrorail and Metrobus), Virginia Railway Express (VRE), and Fairfax Connector total approximately \$384 million (Table 2-1). The county contribution to

WMATA comprises \$105,546,270 (\$63,046,270 from the general fund and \$42,500,000 from bonds) to support capital and operating, respectively. Further, the county directs \$187,079,916 in state aid, gas tax, and interest on state aid to fund WMATA operating. Overall, the county contributes 5.8% of WMATA’s \$5 billion overall budget for FY 26. WMATA’s funding gap for FY26 has been addressed through a combination of additional state aid paid directly to WMATA and additional state aid out of the county’s balance. However, Fairfax County currently has no solution for FY 27’s anticipated funding gap.

COMMENT: EQAC continues to support county and regional efforts to provide a safe and sustainable public transit network for use by county residents and visitors.

Table 2-1. Summary of Fairfax County’s Contribution to Public Transit Organizations. *Source: FCDOT, e-mail from Arletta Thirus; July 1, 2025.*

Public Transit Organization	Fairfax County Contribution to Organization’s Operating Budget	Fairfax County Percentage of Organization’s Operating Budget
WMATA – FY 26	\$292,626,186	5.8%
VRE – FY 26	\$6,261,092	2.8%
Fairfax Connector – FY 26	\$85,238,075	52%

Increased Use of Electric Vehicles

In 2021, Fairfax County published its [Community-wide Energy and Climate Action Plan \(CECAP\)](#), which lays out multi-sector greenhouse gas reduction strategies and identifies roles and responsibilities for federal, state and local stakeholders. A review of [Fairfax County’s Climate Action Dashboard](#) shows that transportation is the second-largest source of greenhouse gas emissions in Fairfax County (after buildings), contributing 44% of the emissions, despite reductions over the past 10-15 years. The dashboard shows that in 2023, approximately 3.4% of light-duty vehicles registered in Fairfax County were electric. This includes battery electric vehicles (BEVs) and plug-in hybrid electric vehicles (PHEVs). This is an improvement from 2020, when only 1.1% were electric. However, it's still less than the county's 2030 goal of 15% electric vehicles, which equals about 125,000 vehicles.

In addition, the dashboard shows that about 7% of light-duty vehicles registered in Fairfax County are hybrid electric vehicles. [U.S. Department of Energy information](#) shows that a 2025 electric vehicle produces 46% less greenhouse gas emissions than a comparable internal combustion engine. Further, that drivers [save \\$6,000-\\$10,000 in reduced fuel and maintenance needs](#) by buying an electric vehicle. Information about the cost savings of switching to an electric vehicle also is available at the [vehicle comparison website of the U.S. Department of Transportation](#). For example, in looking at [sedans](#), they estimate annual fuel costs for fully electric ranged from \$550-750 and for fully gasoline from \$850-1,550. Fairfax County also is seeking ways to improve its estimates of the number of light-duty electric vehicle registrations.

COMMENT: EQAC appreciates efforts by county staff to coordinate across departments (Office of Environmental and Energy Coordination with the Department of Management and Budget) to improve the quality of data about electric vehicle registrations.

Fairfax County's ongoing EV Readiness Strategy development and the Charge Up Fairfax program are the two main approaches being used by the county to increase light-duty electric vehicle registrations. The Office of Environmental and Energy Coordination (OEEC) is developing a draft EV Readiness Strategy plan that is scheduled to be completed and submitted to the Board of Supervisors in Fall 2025. Additional details are available on the EV Readiness Strategy public engagement website. As of July 2025, 16 communities (approximately 5,200 households) have participated in Charge Up Fairfax. Recent improvements to the Charge Up Fairfax program include increasing the grant amounts and collaborating with Dominion Energy on their related electric vehicle charging infrastructure program for multifamily residential communities. Additionally, Charge Up has a new rolling application cycle rather than having specific deadlines for cohorts in order to make the program more widely available throughout the year. The eligible organizations have also expanded beyond just homeowner associations and condominium owner associations to also include faith-based organizations and non-profits. Additional information relevant to increase use of electric vehicles is described in the Climate and Energy chapter of the ARE.

COMMENT: EQAC supports efforts by Fairfax County to increase light-duty electric vehicle registrations in Fairfax County to at least 15% of total registrations by 2030

per the recommendation in the Climate and Energy chapter about promoting and providing an EV friendly environment in the county.

Fairfax County's [Operational Energy Strategy](#) calls for a transition of the county's buses and fleet vehicles to fully electric or a non-carbon emitting alternative by 2035. Also, by 2035, 99% of Connector bus fleet miles traveled will be with non-carbon emitting vehicles. The county reports that, as of July 2025, [6% of the Connector buses and vehicle fleet are electric](#). Additional information about the status of school bus electrification is provided in the FCPS Spotlight of this ARE under discussion of the Joint Environmental Task Force (JET) implementation. As part of its efforts to develop an EV Readiness Strategy, the county is considering three fleet transition scenarios in collaboration with the Office of Environmental and Energy Coordination and Department of Vehicle Services. These scenarios vary based on which EVs are selected, the number of vehicles replaced annually, the length of time for postponing a replacement, and the length of time for the study period. The Fleet Transition strategy will be published as part of the EV Readiness Strategy scheduled to be completed in the Fall.

COMMENT: EQAC supports a timely transition of county vehicles to electric and anticipates additional input as part of its feedback on the EV Readiness Strategy.

Fairfax County's Department of Transportation (FCDOT) has commissioned an analysis to identify a pathway to diesel alternatives for the Connector transit fleet and has implemented a zero-emission bus pilot program; FCDOT plans to report to the Board of Supervisors on the study and electric bus pilot in 2026. Fairfax County received a \$50 million grant award from the Federal Transit Administration in 2024 for low emission, diesel-electric hybrid buses. The new buses have next generation hybrid technology and will help with the Connector's ongoing fleet replacement plan, while the pilot and study considerations including feasibility of today's technology are further evaluated. For the non-bus fleet, OEEC and the Department of Vehicle Services are working with consultants and many other agencies on a fleet transition plan. OEEC noted that the primary hurdle to more rapid electrification is a lack of suitable electric alternatives that meet the operational needs of most vehicles in the county fleet, including public safety vehicles (police and sheriff pursuit vehicles and fire apparatus) and heavy equipment used by DPWES and FCPA. A summary of the fleet transition study is planned to be presented to the Board of Supervisors in September.

EQAC is supportive of Fairfax County’s efforts to provide county residents with green vocational technical training. For example, the [Workforce Innovation Skills Hub \(WISH\)](#) provides services to help the community to develop its workforce, support business, and cultivate a thriving economy. The WISH center is broad in fields and services offered and includes training for career paths in the building and construction trades industry though not specifically for areas such as electric vehicles or solar panels.

ActiveFairfax Transportation

Fairfax County’s main planning effort related to non-motorized infrastructure is the [ActiveFairfax Transportation Plan](#), including the Safe Streets for All Program which the Board of Supervisors unanimously endorsed on May 10, 2022. In May 2025, the Board of Supervisors directed staff to consider a Comprehensive Plan amendment that incorporates the Active Transportation and Trails Plan. The Comprehensive Plan amendment process ([Plan Amendment 2022-CW-2CP | Planning Development](#)) is expected to take 10 months (i.e., through March 2026) and provide opportunities for public engagement in late summer/early fall 2025. Implementation of the plan is not funded. Fairfax County DOT applied for but did not receive funding to support a staff position to implement the Safe Streets for All Program position. FCDOT is currently working on an application to request Safe Streets and Roads for All federal grant funding for a part-time staff augmenting consultant position to support launch of the Safe Streets for All Program in the interim.

RECOMMENDATION: Provide the resources and funding needed to complete and implement the ActiveFairfax Transportation Plan in a timely manner, including providing a staff person the Safe Streets for All Program.
Recommendation 2025-5 Transportation

Why: Increasing the use of non-motorized transportation has many benefits for county residents including reducing use of single occupancy vehicles and resulting reductions in air pollution and greenhouse gas emissions; also, helping achieve goals for a Healthy Fairfax. Providing the staff support and infrastructure for the Safe Streets for All Program will help to prioritize safety for all users, regardless of age, race, income, or ability.

Sidewalks and Trails

Fairfax County has an extensive network of sidewalks and trails available to county residents and visitors who use them for work, school, commerce, and recreation.

We note the recent completion of trail segments along the I-66 Corridor and support county efforts to highlight the trail route and access points for the public along with wayfinding signage. EQAC notes an ongoing concern with the need to address maintenance of non-motorized infrastructure in the county so it can be safely used by residents and visitors. The Board’s approval of funding for trail maintenance as part of the \$100 million for Active Transportation over 6 years funding effort will be helpful in that regard. EQAC notes [concerns that have been expressed about delays with implementing these projects in a timely manner.](#)

Installation of bicycle paths, crosswalks, and roadway lanes are done by FCDOT as well as Virginia Department of Transportation (VDOT), developers, or other entities. Much of the work to construct non-motorized infrastructure is performed by VDOT (for example, when they are repaving a road, they might add a bicycle lane). However, estimates of the infrastructure constructed by VDOT or private developers were not made available to EQAC. FCDOT noted the following for projects they manage/implement: new bicycle paths – linear feet of cycle track and on-road bicycle lanes added (FY 25: 0; FY 26: 1,562); crosswalks – linear feet of sidewalk added (FY 25: 1,787; FY 26: 5,318); and roadway lanes – linear feet of new roadway vehicular lanes added (FY 25: 760; FY 26: 3,484). Source: FCDOT, e-mail from Arletta Thirus; July 1, 2025.

COMMENT: EQAC supports efforts to provide adequate maintenance of sidewalks and trails so they can be safely used by residents and visitors. Also, EQAC supports efforts by FCDOT and VDOT to increase the number of miles of bicycle paths, crosswalks, and roadway lanes for non-motorized transit in the county. Additional efforts to provide connected pathways would also be helpful in their use for traveling to work, school, commerce, and recreation.

Impact of Transportation Projects on Trees and Natural Areas

EQAC is following the approach being used by FCDOT and VDOT to reduce the impact of transportation projects on trees and natural areas (e.g., in Environmental Quality Corridors [EQCs], resource protection areas [RPAs], and the Occoquan Watershed). FCDOT follows [Section 4\(f\) of the U.S. Department of Transportation Act of 1966](#) to minimize impact to parkland (on federal-aid projects) and the Chesapeake Bay Preservation Ordinance/RPAs. Some recent transportation and electrification projects in Fairfax County have resulted in follow-ups about tree loss. In [June, 2025, EQAC sent a memorandum to the Board of Supervisors](#) requesting that proposals for roads need to include information on tree loss so that the Board

and communities can be better informed about potential tree loss before a plan is accepted by the Board and that tree preservation options need to be known at the earliest stage of road construction projects. Recognizing that the county's Department of Transportation maintains county roads, EQAC recommended that the Board direct the County Executive to ask that the Fairfax County Department of Transportation explore possible options to reduce tree loss and possibly plant trees that are removed during road construction when appropriate. Further, VDOT is in the process of developing landscaping guidance for their projects. EQAC has received testimony and public input on the issue of VDOT control of Fairfax County roads. In 2026, EQAC plans to collect information and provide recommendations to the BOS on potential changes on the county's dependency on VDOT for road project design and implementation. Our focus will be on roads in and around Tysons Corner.

COMMENT: EQAC supports the recommendation in the Land Use chapter for the Board of Supervisors related to addressing tree loss and planting in alignment with the One Fairfax Policy.

homes and infrastructure from flooding, and maintaining/restoring streams, ponds, lakes, and tidal and freshwater wetlands to ecologically healthy systems.

I - DRINKING WATER

The majority of the county's drinking water is provided by [Fairfax Water](#). About two-thirds comes from the Potomac River and one-third from Occoquan Reservoir. For a small number of residents, community wells and private wells provide drinking water.

EQAC believes that, overall, Fairfax County has an adequate supply of good quality drinking water. Like everyone else in the U.S., we need to keep a wary eye on new and emerging contaminants that may need further treatment. The more local Occoquan supply in particular bears watching because of threats to its quality and quantity.

Current Concerns

Water Quality of the Potomac River and Occoquan Reservoir Supplies

[Fairfax Water](#) withdraws water from the Potomac River near the James J. Corbalis Water Treatment Plant and from the Occoquan Reservoir at the Frederick F. Griffith Water Treatment Plant. Currently, Fairfax Water meets or surpasses all state and federal regulations. However, a program is needed to reduce PFAS (forever Chemicals) to acceptable levels in the near future.

PFAS is found everywhere now, our air, our bodies and our water. PFAS has been detected in our sources of drinking water and these chemicals increase the risk of a wide range of health problems including kidney and thyroid disease, testicular cancer, and impaired fetal development.

Fairfax Water and others are working on the costly investments needed to make our drinking water safe. However, drinking water represents a small portion of these chemicals that Fairfax residents ingest. The main source of these chemicals in our drinking water is from industrial discharges and personal consumer products. But PFAS chemicals are found almost everywhere: cookware, food packaging, various water-resistant textiles, cleaning products, and even some electronics. The best way to get PFAS out of our drinking water and out of the environment is to stop them at our source. Health risks to Fairfax residents will remain high even if Fairfax Water spends millions of dollars to extract PFAS chemicals from our drinking water.

Last session, the General Assembly passed legislation to help address industrial discharges of PFAS. Now it is time to mandate phase out these health-impairing chemicals in consumer products. Other states have already done this with laws that set reasonable schedules to transition from health damaging PFAS to safer products. The Commonwealth should act in the next session to protect our health.

Reduction of forever chemicals is not unlike the phase-out of lead in gasoline and paint or the phase-out of refrigerants (e.g. CFC's) that were destroying the ozone layer. Companies adjusted over time and ultimately made significant profit on the new products. Both these phase outs were great successes in protecting the environment and human health.

In addition to the issues in drinking water, PFAS has been identified in local streams. HB2050 (effective July 1, 2025), may require industrial stormwater discharges to County streams and flowing to the Occoquan Water Supply to be controlled to drinking water levels. The PFAS issue affects many disciplines, and other chapters in this ARE also have comments on PFAS. The following recommendation is presented on behalf of all chapters.

COMMENT: Fairfax County should support legislation at the state level to phase out “forever chemicals” such as PFAS in consumer products as soon as practicable.

Minimum Flows

Fairfax County and neighboring jurisdictions store only a few days of local supplies of water and thus rely on a continuous (“run of the river”) flow of Potomac River water from upstream sources and reservoirs. The lack of large dams is cost-effective and good for the ecology of the Potomac River but can present some challenges during droughts. Major water systems in the Washington, D.C. region interconnect to some extent and have worked under cooperative agreements since 1982². The [Interstate Commission on the Potomac River Basin](#) (ICPRB) has the mission to protect and enhance the waters and related resources of the Potomac River basin through science, regional cooperation, and education. The ICPRB produces a water supply reliability study every five years. The 2020 report indicated no immediate concern of water shortages, but the 2025 report, still in progress as of this writing, may offer a more concerned opinion due to changes in climate and usage. UPDATE: In a November 2025 briefing for EQAC, ICPRB representatives

² Sheer, Daniel P., 1985, “Managing Water Supplies to Increase Water Availability.” In *National Water Summary 1985 – Hydrologic Events and Surface-Water Resources*, [U.S. Geological Water-Supply Paper 2300](#), pp. 101-123. DOI: 10.3133/wsp2300.

indicated that, under a situation of low flows influenced by climate change, or of medium climate-influenced flows along with high demand, the region could face water reliability issues as early as 2030.

COMMENT: Fairfax Water coordinates with the ICPRB; EQAC recognizes this coordination is critical and supports its continuation.

Occoquan Reservoir

The Occoquan Reservoir watershed drains about 590 square miles spanning four counties and two cities. Unlike the vastly larger Potomac Watershed, the Occoquan water supply is very susceptible to urbanization and pollutants introduced in local jurisdictions.

Current concerns for the Occoquan Reservoir include:

- The need to address forever chemicals (PFAS) in the water supply and distribution system. (see [Fairfax Water notes on PFAS](#));
- Control of salinity in Occoquan water (see discussion below on data centers and the [Fairfax Water notes on PFAS](#)); and
- Planned development in Prince William County’s part of the watershed which may pollute the drinking water.

Revisions to Fairfax County’s Comprehensive Plan appear to be on track to continue protections for Fairfax County’s portion (17%) of the Occoquan watershed and the Board of Supervisors again in February 2024 reaffirmed their commitment to the downzoning within the county’s Water Supply Protection Overlay District (WSPOD) of the county to continue protecting the quality of our water supply.

Virginia Tech [Occoquan Watershed Monitoring Laboratory \(OWML\)](#) under the direction of the Northern Virginia Regional Commission (NVRC) is currently overhauling and modernizing the Occoquan’s legacy reservoir and watershed models in order to provide a new framework for greater predictive capabilities in evaluating the impacts of new development trends, climate change scenarios, and threats from newer contaminants like salts and PFAS. This current effort - dubbed the Occoquan Watershed Modeling Framework (OWMF), coupled with the current *Landuse Impacts and Modeling Assessment (LIMA)* work - will bring these models into the 21st century, leveraging the latest technology (i.e., machine learning), and will provide regional stakeholders with vastly improved forecasting of future water quality and quantity conditions in the Occoquan system.

COMMENT: Occoquan reservoir and watershed legacy model modernization efforts are actively underway which will result in vastly improved predictive capabilities, once complete. EQAC supports these efforts to better understand changes affecting the reservoir and its watershed.

COMMENT: EQAC commends the decision to continue protections for the Occoquan watershed, especially as it keeps Fairfax County in a good position to advocate for protecting the remaining 83% of the watershed in other jurisdictions.

Wells and Groundwater Monitoring

As the County continues to urbanize, groundwater supplies will come under increasing stress. There are approximately 15,000 family residences and businesses that are served by individual well water supplies in Fairfax County. The Fairfax County Health Department offers private well evaluations, and the application [can be accessed on the county's website](#). The Virginia Department of Health's (VDH) Office of Drinking Water regulates the 44 public well water supplies in Fairfax County. The operators of these systems are required to conduct quarterly water sampling and analysis. On January 1, 2014, the [Eastern Virginia Groundwater Management Area was expanded](#) to include the areas of Fairfax County located east of Interstate 95.

COMMENT: There is no indication of any regional problem in groundwater so far, but EQAC believes continuing monitoring efforts are prudent.

Data Center Impacts on Water Supplies

According to a recent Wall Street Journal Report³, roughly 250 existing data centers in Northern Virginia use about 4,000 MW of electric power, and another 7,000 MW could be added. Adding 7,000 MW of capacity using evaporative cooling would introduce about 70 mgd of consumptive water use, almost doubling existing consumptive water uses in the Potomac River Basin. This still is small relative to normal flows, but not necessarily during droughts. None of this increased usage is included in the 2020 ICPRB estimates.

All evaporative cooling systems concentrate any solids in the input water and must discharge highly saline "blowdown" water. This is particularly worrisome in the Occoquan basin, where sodium levels already are of concern. At present, it is not known if new data centers actually will request water for evaporative cooling, but

³ Wall Street Journal, April 15, 2024, "AI Is Fueling a Data Center Boom. Can the Power Grid Keep Up?"

having a policy in place could eliminate this uncertainty and aid water quality protection efforts in the Occoquan.

The recommendation below, with minor changes this time, was included in the 2024 ARE, but no action was taken. It has been [cited by the Sierra Club](#) as an example of good policy.

RECOMMENDATION: Fairfax County should enact a policy that, if data centers are approved with evaporative cooling, approval conditions should consider (1) Possible water reductions during periods of drought; (2) Use of recycled wastewater where feasible; and (3) No return of any “blowdown” to the Occoquan Reservoir via UOSA or surface streams. *Recommendation 2025-6 Water*

II – WASTEWATER

Nearly all wastewater in Fairfax County is collected from homes and commercial sites and carried through the county-maintained sanitary sewer pipe system to one of five advanced regional treatment facilities in the region. [A digital map of facilities and service areas is online.](#) The Fairfax County [Department of Public Works and Environmental Services](#) manages the collection and treatment of wastewater. An overview of wastewater treatment can be found [here](#).

Current Concerns

Funding Wastewater Management

EQAC recognizes Fairfax County is served by an excellent wastewater conveyance and treatment infrastructure. However, we must not rest on our laurels. Facilities will require continued maintenance and upgrades as they age, and hiring qualified staff remains a continuing challenge.

The [Wastewater Management Program](#) within the county is managed as an enterprise fund which means the fees collected for hookups and for service fund the system. Most fees are collected as part of customers’ water bills. The Board of Supervisors sets the fee rate. In December 2024, Raftelis Financial Consultants, Inc. completed a study of the sufficiency of the existing and adopted wastewater rates and availability charge revenues for the Wastewater Management Program: [Wastewater Rate Study for Fiscal Year 2025 Through Fiscal Year 2030.](#)

COMMENT: EQAC believes the Raftelis study provides a sound basis for setting the fee rate collected for wastewater treatment to meet all documented needs.

Pretreatment Program

Fairfax County has an effective and enforceable [pretreatment program](#) to protect the county's wastewater collection, conveyance, and treatment infrastructure, and to prevent certain pollutants from passing through the wastewater treatment facilities to receiving waters. The pretreatment program, through interjurisdictional pretreatment agreements, regulates wastewater generated in Fairfax County that is treated at regional advanced treatment facilities. The pretreatment program, in collaboration with the UOSA pretreatment program and Virginia Department of Environmental Quality, requires permitted sources of industrial wastewater to comply with recently enacted state legislation (e.g., [House Bill 2050](#)) to evaluate and eventually reduce PFAS/PFOA loading to the Occoquan reservoir via the UOSA treatment plant.

COMMENT: No additional action is recommended.

Septic Systems and On-site Disposal

Over 21,000 homes and businesses are served by on-site sewage disposal systems in Fairfax County. About 5% of these systems are alternative sewage disposal systems, which require more extensive maintenance than conventional systems. All septic systems are required to be pumped out every five years. The operation and maintenance of all [onsite sewage disposal facilities](#) is regulated by the county's Health Department. Permits are issued for residents to utilize pump and haul because of a failing on-site sewage disposal system.

Areas of the county that have been deemed unbuildable in the past (due to the inability of the property to support a conventional septic system) are now being considered for development using [alternative on-site sewage disposal technology](#). To ensure these complex systems are functional for a long time, educational outreach to homeowners is critical. Outreach can be provided by both the private and public sectors, to include Fairfax County Health Department and Department of Public Works and Environmental Services.

COMMENT: EQAC supports continuing aggressive education and monitoring of new alternate septic systems performance.

Upper Occoquan Service Authority (UOSA)

UOSA is an independent authority that operates an advanced water reclamation facility in Centreville, Virginia and serves the western portions of Fairfax and Prince William counties, as well as the cities of Manassas and Manassas Park. UOSA’s [Drinking the Water](#) video shows individuals comfortably drinking the treated water from the plant and showcases the high degree of treatment. This system was one of the early pioneers of indirect potable reuse in the country. UOSA discharges upstream of the Occoquan Reservoir. UOSA continues to meet its performance criteria. However, chemicals passing through UOSA (or formed in the treatment processes) have the potential to impact downstream drinking water supplies. For example, UOSA is actively studying PFAS dynamics (e.g., PFAS precursor transformations) through their treatment system to better understand potential impacts and any future regulatory implications. Additional information can be found on the [UOSA website](#).

COMMENT: EQAC has no specific recommendations regarding UOSA at this time.

III - STORMWATER

Introduction

As development and redevelopment occurs, natural areas that once had vegetative cover capable of absorbing water and filtering pollutants are replaced by impervious surfaces. With no chance to infiltrate into the ground, and with surfaces often designed to minimize water retention, increased runoff flows into streams more quickly. Most watersheds in Fairfax County now are considered “urban,” with greater than 10 percent impervious area.

First and foremost, runoff must be prevented from endangering life or causing damage to built property. However, urban runoff also typically contains pollutants: excessive nutrients, including nitrogen and phosphorus; sediment; salts from winter deicing; toxics from a variety of human sources; pathogens including bacteria; and litter. In addition to local impacts, loadings of these pollutants to Chesapeake Bay must be reduced.

Responsibility for controlling runoff falls upon several entities:

- The county (DPWES) maintains the public storm drainage system contained within dedicated storm drainage easements.
- The county’s Land Development Services (LDS) administers County codes, regulations, and other requirements related to building and site

development (both during and post-construction) which impact stormwater runoff quantity and quality

- Numerous private systems are the responsibility of private property owners, including driveway culverts and bridges that cross public drainage systems.
- The Virginia Department of Transportation (VDOT) maintains the storm systems in public street rights-of-way⁴.
- Storm systems on land owned by other public bodies such as the Fairfax County Park Authority, Fairfax County Public Schools and the federal government are maintained by those entities⁵, sometimes in a cooperative effort with DPWES.

Recent events, such as the disastrous flooding of Asheville, NC, by Hurricane Helene in 2024 should be taken as a warning that times are changing when it comes to stormwater. This section presents some serious issues that need attention.

Current Concerns

Monitoring Streams and Lakes – What do we know?

Several stream monitoring programs are ongoing within Fairfax County and county streams have been the subject of several studies. The county has a very robust suite of watershed monitoring programs.

The Fairfax County Department of Public Works and Environmental Services (DPWES) manages web pages describing its [Stream Quality Assessment Program](#), providing an excellent description of the DPWES efforts, along with current links to other cooperative monitoring efforts (e.g., the [USGS monitoring partnership project](#)). Monitoring results indicate the following key points about the quality of Fairfax County streams:

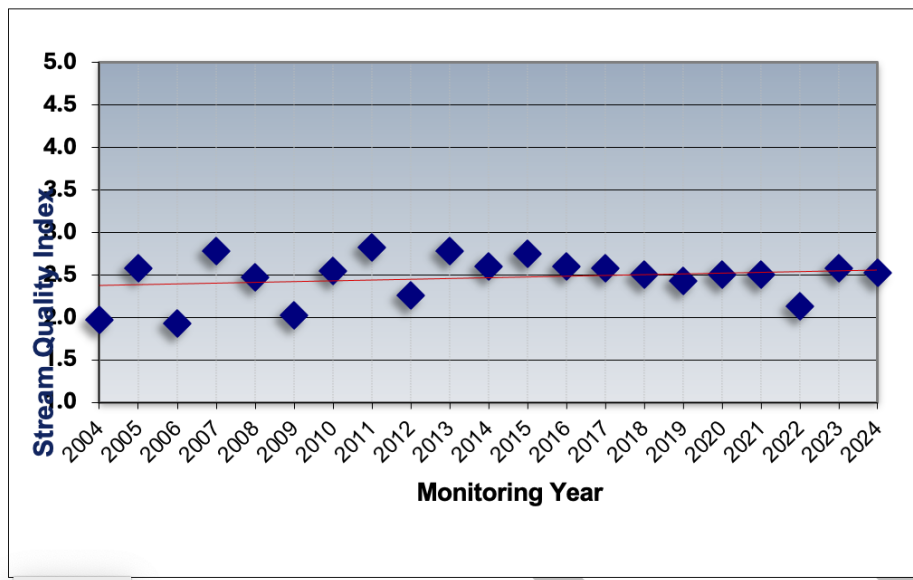
- In 2024, 75% of Fairfax County’s streams were considered in “fair” to “very poor” condition; that is, they are impaired and lack biological diversity. Since 2004, approximately 70-80% of county streams have fallen into these lower categories. Usually only 15-25% of county streams are considered “good” or “excellent” condition each year (see [Stream Quality Assessment Program](#) website). This suggests that three quarters of the county’s total stream miles would likely be assessed as impaired by DEQ and potentially require TMDLs.

⁴ [VDOT has its own system](#) for designing and maintaining facilities. As the County has little direct control over VDOT practices, VDOT facilities are discussed only briefly towards the end of this chapter.

⁵ Activities of these agencies may be discussed in other chapters of this Annual Report on the Environment.

- According to [Virginia’s 2024 Integrated Report](#) (required by the Clean Water Act every two years), almost 200 miles of county streams are classified as “impaired” and roughly three quarters of these will require TMDLs to be developed (see TMDL section, later on). Only 32% of the county’s streams have enough assessment data to make determinations; of the unassessed 68%, it is likely that the large majority of these (about three quarters) would also qualify as impaired – with many requiring TMDLs.
- Based upon the DPWES Stream Bacteria Monitoring Program, recreational direct contact with surface waters [is discouraged](#).
- According to the county’s Stream Quality Index (SQI), which measures benthic macroinvertebrate community structure, county streams have shown a slight improvement since 2004, when the current monitoring program began. Although the changes have been relatively minor, it is important to note that they have occurred against a backdrop of continued urbanization and population growth.

Figure 3-2. Fairfax Countywide Annual SQI



Since 2014, four larger, county-managed water control impoundments in the [Pohick Creek watershed](#) have been monitored by DPWES. By monitoring the lakes over time, it has been shown that dissolved oxygen concentrations strongly stratify during the growing season, may experience summer algal blooms fed by excess nutrients, and that periodic dredging can lower nutrient, chlorophyll, and suspended solid concentrations (in the water column) but that these concentrations tend to trend back up over time, post-dredging. It is reasonable to believe that other unmonitored lakes in the county exhibit similar conditions.

Monitoring of these four impoundments is ongoing, to better inform long-term management of these small lakes.

The Reston Association (RA), the homeowner's association for the planned community of Reston, has an active watershed and lake management program. Four lakes, Audubon, Anne, Thoreau, and Newport, as well as two ponds, Bright and Butler, are monitored. Information about Reston's lakes can be obtained from its most recent [Lake Report](#) and the [2024 RA State of the Environment Report](#). RA evaluates control methods of aquatic plants and algae from both a budget and ecological impact standpoint.

[Lake Accotink](#) has been impaired by sedimentation ([2017 Accotink Creek TMDL](#)). In 2003 the Lake Accotink [Task Force was formed](#) to evaluate and advise the County Board of Supervisors (BOS) how to best preserve this community resource. Based on the Task Force's recommendations, the BOS has directed staff to 1) further [study sedimentation occurring in the lake and stream](#) (a new [partnership with USGS](#)), 2) conduct [a preservation \(smaller lake\) feasibility study in conjunction with public input, and 3\) evaluate the impounding structure \(FCPA dam analysis\)](#). [All of these actions have been initiated](#) and are currently ongoing.

COMMENT: EQAC believes current stream monitoring efforts present an accurate picture of stream conditions within Fairfax County, and recommends these efforts continue.

COMMENT: EQAC has no recommendation concerning Lake Accotink to offer at this point, EQAC will continue to follow this activity.

Flooding

DPWES is very active in both [providing information](#) and in constructing, monitoring, and maintaining facilities to alleviate/prevent flooding. [Coastal flooding is a concern for communities along the tidal Potomac River](#). The communities of Belle Haven and New Alexandria are particularly vulnerable. DPWES operates and maintains two flood control systems in the Belle Haven area: the New Alexandria Tide Gate and the New Alexandria Pump Station. These provide only a limited amount of flood protection to this community built in the floodplain of the Potomac River.

Over the next century, precipitation events are expected to become more intense, which is predicted to lead to more frequent flooding. The strategies in the [Resilient](#)

[Fairfax plan](#) address the issues of both floodplains and urban flooding. The work to address documented structural flood risk is important, as climate change, aging county infrastructure, and nearby development with impervious surface may affect flood risks to at-risk properties.

On June 17, 2025, DPWES and LDS provided the BOS Land Use Policy Committee with an [update and recommendations](#) on the *Countywide Flood Risk Reduction Policy*, which aims to establish a framework of programs, projects, and regulations to conserve floodplains and manage stormwater with the goal of eliminating adverse flooding impacts within an established level of service. This new policy replaces an older 1997 policy. Staff estimated in addition to the \$95 million Capital Improvement Program projects (planned for completion within 10 years), an additional \$600 million of projects are needed.

COMMENT: Significant expenditures will be needed to protect life and property against future flooding. The funding issues are discussed at the end of this section, leading to a priority recommendation.

Total Maximum Daly Load (TMDL) Action Plans

Fairfax County has developed [comprehensive watershed management plans](#) for each of the county's 30 watersheds. These are grouped into 13 major watershed management plan documents. Many streams in the county are listed as impaired (poor biological health) by DEQ and several have established TMDLs (and County-developed TMDL Action Plans) for pollutants such as sediment, chloride, PCBs, and Bacteria (see Stream Monitoring section, above). These are referred to as our “local” TMDLs. TMDLs establish the maximum amount of pollutants a water body can receive while still meeting state water quality standards. Action Plans are required to be developed to address each TMDL. This results in a number of specific local TMDL Action Plans for Fairfax County:

- [Bacteria TMDL Action Plan](#) (updated 2025)
- [PCB TMDL Action Plan](#) (updated 2025)
- [Sediment TMDL Action Plan](#) (updated 2025)
- Chloride TMDL Action Plan (under development)

As part of the Chesapeake Bay drainage, Fairfax County is also subject to the [Chesapeake Bay TMDL and Action Plan for required reductions of nitrogen, phosphorous, and suspended sediment](#). TMDL compliance ultimately is enforced through the County’s [Municipal Separate Storm Sewer System \(MS4\) Permit](#). Approximately 7,000 outfalls in the County are regulated under this permit. The

permit was reissued on January 4, 2024, and expires January 3, 2029. The County's [MS4 Program Plan and Annual Report](#)⁶ goes into great detail concerning planning, implementation, monitoring, and reporting.

COMMENT: EQAC believes DPWES has Fairfax County in compliance with current TMDL requirements, and no specific action (other than financing, discussed below) is recommended at this time.

Public Outreach

A large element of controlling runoff and nonpoint pollution is best done at the source, which often involves private landowners. DPWES has a [number of programs](#) for educating the public in properly handling runoff and in reducing nonpoint pollution. Some of these programs include: properly designing and maintaining private facilities, respecting [Resource Protection Areas \(RPA's\)](#); and [changing common behaviors](#) to avoid pollution. The MS4 Permit also has specific Public Outreach requirements. DPWES also engages extensively with Fairfax County Public Schools to promote environmental education and operates a number of [award-winning outreach and education programs](#) and tools, like *Replant*, *Revitalize*, *Renew!* and [Sewer Science](#) in the classroom.

COMMENT: EQAC believes a well-informed public is critical for stormwater management efforts and supports present outreach efforts and initiatives.

Stream Restoration

For urban streams, “flashier” runoff results in scouring, downcutting, and loss of streamside vegetation. Stream channels incised from downcutting become disconnected from their floodplains. Water cannot overflow banks onto the adjacent floodplain where high flows can be dissipated and drop their sediment loads. Silt and sediment from erosion smother the stream bottom and destroy in-stream habitat for sensitive benthic macroinvertebrates. Loss of shade results in increased water temperatures. Fairfax County has an active (albeit limited) [program of stream restoration](#) to counter these effects.

Stream restoration typically designs the restored stream to handle the new urban flow regime and to reconnect with its floodplain to provide a healthy natural ecosystem. (See Figure 2.) The restored stream also may provide recreational and aesthetic benefits. However, restoration itself is neither a cheap nor a gentle process and often involves heavy construction. DPWES coordinates with

⁶ The 2025 report was not yet available when the 2025 ARE was prepared.

landowners and nearby community groups to minimize impacts and achieve project goals.

Figure 3-3. Colvin Run at Lake Fairfax Park before and after restoration. *Source: DPWES.*



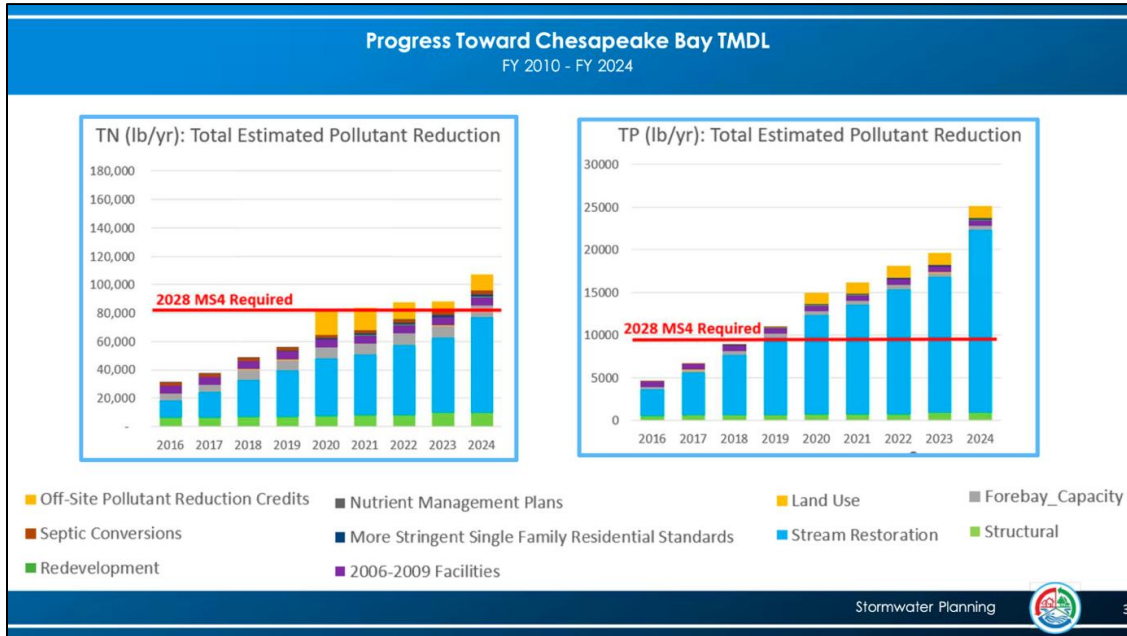
DPWES has successfully completed 273 stormwater projects treating about 66,299 acres and restored 29 miles of degraded streams and outfall channels since July 2009. This is about 3 percent of the County’s stream miles. (Complete restoration is neither feasible nor practical for some urban streams.) Typical cost for restoring a stream is approximately \$9M per mile (or \$1,700 per linear foot) and continues to increase. Despite this cost, stream restoration is almost an order of magnitude more cost-effective than other Best Management Practice (pond retrofits, green stormwater infrastructure) for reducing sediment and nutrients. DPWES also has been very effective in receiving VA Stormwater Local Assistance Fund (SLAF) grants for several restoration projects - \$53 million, to date.

Stream restoration has been the driving force in successfully meeting the County’s TMDL Sediment, Nitrogen, and Phosphorus limits for Chesapeake Bay. Figure 3 shows how critical stream restoration has been as a best management practice.

COMMENT: EQAC commends the DPWES stream restoration program for this remarkable achievement. EQAC supports continuing DPWES’ stream restoration efforts at their current level, but with a shift in priorities towards achieving more local TMDL goals and in providing recreational and other benefits to local communities.

COMMENT: EQAC supports efforts to study the county’s investments in stream restoration.

Figure 3-4. Bar Charts, 2016-2024, Showing How Critical Stream Restoration Has Been to Reducing Discharges to Chesapeake Bay. *Source: DPWES presentation to EQAC, July 9, 2025.*



Facilities Construction, Inspection, and Maintenance

Fairfax County’s stormwater system now represents more than a billion dollars in public infrastructure. It includes roughly 1,420 miles of pipe, about 200 miles of open channels, and nearly 66,800 structures, with some assets approaching 80 years old. In parallel, the County manages and oversees more than 9,000 public and private stormwater facilities, everything from ponds, proprietary devices, infiltration practices, underground and rooftop detention, and sand filters, to green stormwater infrastructure such as bioretention, swales, tree filters, permeable pavement, and green roofs. Approximately 7,000 stormwater outfalls fall under MS4 permit requirements, and DPWES operates 20 state-regulated dams that require focused operations, inspections, and capital care. At the same time, the system is growing by roughly 500 facilities and eight miles of pipe each year, and redevelopment is adding complexity. Many facilities built in the 1980s and earlier are reaching end of life, just as more intense storms and higher unit costs raise the consequences of deferring work. DPWES manages a large number of [Stormwater Improvement Projects](#), with a [summary report available for each Supervisor District](#).

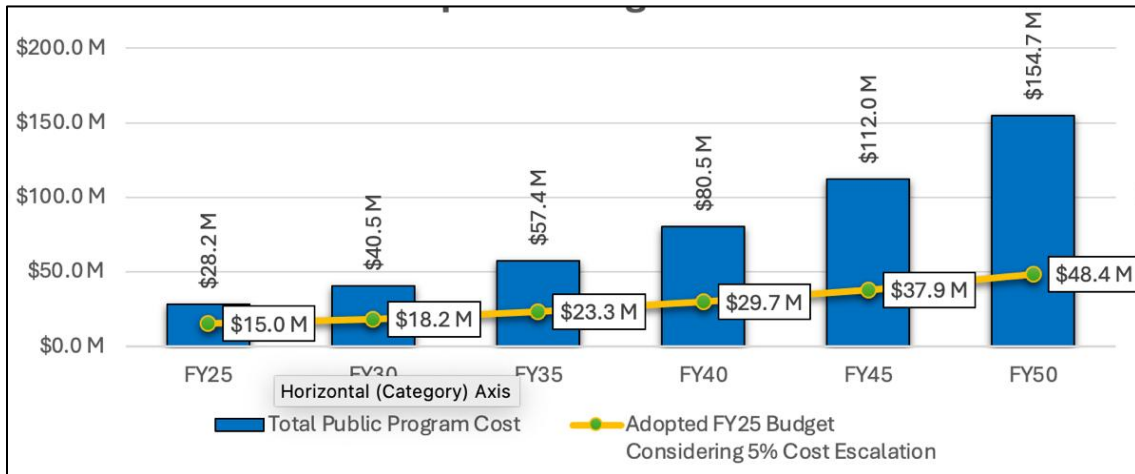
Over the past year, the [Maintenance and Stormwater Management Division](#) (MSMD) has shifted from reactive decisions (i.e., waiting until things break) to a structured

asset-management program across both conveyance and facilities. The rationale is clear: aging infrastructure, a growing inventory, and stricter compliance make reactive fixes costlier and riskier, while resilience to more intense storms and protection of water quality require proactive, risk-based management. This framework establishes true lifecycle management, including planned maintenance, rehabilitation, and replacement over each asset’s service life, and introduces estimates of annualized replacement cost by asset type, age, and condition. Enabled by [Trimble Cityworks](#), the approach targets inspections, O&M, and capital to the greatest risk-reduction and performance benefit, reducing surprises, improving reliability, and providing a transparent, defensible basis for stormwater funding.

COMMENT: EQAC supports use of a structured asset-management program.

The current budget for stormwater facilities is \$15M, with no plan for projected increases, about half of what’s needed today. Even if one assumes a 5% annual growth on the budget, funding, as shown in Figure 3-5, only covers 53% of today’s need and just 31% by FY50. The shortfall widens from \$13M now to \$106M by FY50. More funding and staff are needed to keep pace with the growing and aging inventory.

Figure 3-5. Stormwater Facilities Branch Public Program Anticipated Budget Needs.



The Stormwater Service District tax is a funding mechanism, independent of the general fund, that enables the county to reinvest in its aging infrastructure. It was established by the Board of Supervisors in 2010 to address more stringent regulatory requirements. The current tax is \$0.0325 (three and one quarter cents) per \$100 of assessed real estate value, which is estimated to generate approximately \$109 million in FY2026. This is in addition to any outside grants

funding received by DPWES. EQAC recommended in 2024 increasing this tax rate to \$0.0350 per \$100, but the recommendation was not acted upon.

EQAC believes the current funding shortfall for stormwater maintenance is putting Fairfax County on a course to see serious stormwater infrastructure deterioration in the mid-term future, along with possible violations of MS4 requirements. Given the complexities of funding, this recommendation from previous years has been modified to provide funding flexibility. Nevertheless, the message is clear: funding must be increased.

RECOMMENDATION: Increase funding for stormwater management either by raising the Stormwater Service District rate or by other means to provide a sufficient, responsible stormwater infrastructure maintenance program.

Recommendation 2025-7 Water

Virginia Department of Transportation (VDOT) Stormwater

Nearly 1,000 acres of impervious road surface area runoff are treated through a system of more than 200 stormwater basins and other measures throughout the county under the [Virginia Department of Transportation](#)'s (VDOT's) Virginia Pollutant Discharge Elimination System (VPDES) General Permit (for discharge of stormwater from small [MS4s within the urbanized areas of Virginia](#)). TMDLs have been developed for sediment, nitrogen, and phosphorus by the VDEQ.

Fairfax County continues to explore ways to partner with VDOT on potential stormwater management enhancements that go beyond minimum state regulations and better reflect the county's more stringent stormwater management requirements.

4. WASTE

Board of Supervisors Environmental Vision:

“Fairfax County will use integrated waste management principles to ensure future system capacity and sustainability. The County will promote policies and practices that maximize resource conservation and pollution prevention. The objective is an increase in waste reuse, diversion, and recycling. Furthermore, the County will strive to decrease the amount of material disposed of.”

Introduction

The Department of Public Works and Environmental Services’ Solid Waste Management Program’s (SWMP’s) Operations Division oversees the collection, transfer, and disposal of solid waste and recyclables within the county. There are two county-owned disposal facilities; the I-66 Transfer Station, and the I-95 Landfill Complex. Most of Fairfax MSW is processed from Waste-To-Energy (WTE) at ReWorld (formerly Covanta Fairfax) and is located on the I-95 Landfill Complex. The SWMP also provides collection services to approximately 44,000 single family homes. Private trash haulers collect the remaining single-family residences, multi-unit residences and commercial establishments, taking recyclable materials to Material Recovery Facilities (MRFs) and solid waste to the county disposal facilities. The six functions of the SWMP are:

- *Source Reduction* is the elimination of waste before it is created.
- *Reuse* encourages using items multiple times for their original purpose or different function.
- *Composting* diverts organic materials from the waste stream into soil supplements.
- *Recycling* converts waste material into reusable materials.
- *Collection and Transfer* is the collection of waste and recyclable materials and consolidation of materials at a recycling facility (SMRF) or a transfer station.

- *Municipal Solid Waste (MSW) Disposal* is incinerated at ReWorld Waste (formerly Covanta Fairfax). The ash remaining after incineration is landfilled at the I-95 Landfill Complex.

Major Solid Waste Challenges in 2025

Zero Waste

The Board of Supervisors adopted the Communitywide Energy and Climate Action Plan (CECAP) target of 90% waste reduction by 2040 and the Joint Environmental Taskforce (JET) goal of 90% by 2030. Despite these goals, the County’s recycling rate has a slight decline over the past decade, and per capita waste generation remains high—over one ton per person annually. Currently, more than 600,000 tons of municipal solid waste are incinerated each year at the ReWorld facility (formerly Covanta Fairfax), producing hundreds of thousands of tons of ash that are trucked to the I-495 landfill. This system is costly, polluting, and incompatible with the County’s climate commitments.

While Fairfax already recovers significant amounts of yard waste (64%), construction debris (78%), and metals (over 50%), other major waste streams remain under-recycled. Food waste is recovered at just 5%, paper at 25%, glass at 27%, and waste wood at 31%. These materials make up a large portion of what is still burned and landfilled. To make meaningful progress, Fairfax needs a coordinated, Countywide approach focused on reducing waste generation and increasing recovery of these under-diverted materials. [DPWES recommends](#) the County begin studying the feasibility of implementing Unified Sanitary Districts (USDs), which would allow DPWES to direct haulers to implement strategies that have been demonstrated across the country and internationally to dramatically cut waste and increase recycling.

Other jurisdictions offer successful models. [Los Angeles County](#) uses [hauler contracts with diversion targets to drive performance](#). [Hennepin County, Minnesota](#) combines robust organics collection with equity-focused outreach. [Oakland, California](#) and [Washington, D.C.](#) enforce mandatory recycling and composting rules with strong monitoring and public engagement.

Presently, DPWES Solid Waste Management is entirely supported by [user fees](#).⁷ Developing a countywide, effective zero waste plan, testing, and implementing zero waste strategies, monitoring and evaluating progress for mid-course corrections

⁷ Budget categories. 40130 Leaf Collection; 40140 Refuse Collection and Recycling Operations, 40150 Refuse Disposal and 40170 I-95 Refuse Disposal

will incur costs. User fees which fund SWMP services charge for discrete waste management services such as when the county directly picks up residential waste or manages waste dumped by haulers at the I-66 and 495 transfer stations. Financing a comprehensive zero waste program might more appropriately come from the County's annual operating budgets and five-year Capital Improvement Plans as the costs and benefits of the zero waste programs are spread across all residences and businesses in the county.

Organic waste, primarily food waste, makes up 25% to 40% of the municipal solid waste. Fairfax County's authority to regulate recycling hinges on the state's definition of "recyclable materials" and "recycling," which the statutes authorize the Waste Management Board (WMB) to establish in its regulations. The WMB does not give a specific definition for "recyclable materials," but it does define "recycling" to mean the process of separating a given waste from the waste stream to be processed into a raw material. The EQAC recommended the BOS include in its 2026 legislative plan a bill that would clarify that organic waste and food waste meet this definition and that local jurisdictions can manage recycling of these materials. The legislation would explicitly state that compostable waste falls within the definition of recyclable material for which local jurisdictions, such as Fairfax County, are authorized to provide recycling services and manage within the county.

RECOMMENDATION: Study Unified Sanitary Districts and any other policies that would enable DPWES to set uniform waste reduction and recycling performance standards and to monitor progress toward zero waste goals. USDs or other policies could provide the County with the ability to enforce standards and implement consistent programs. Means such as USDs would allow Fairfax to improve recycling services and employ transparent performance reporting.

Recommendation 2025-8 Waste

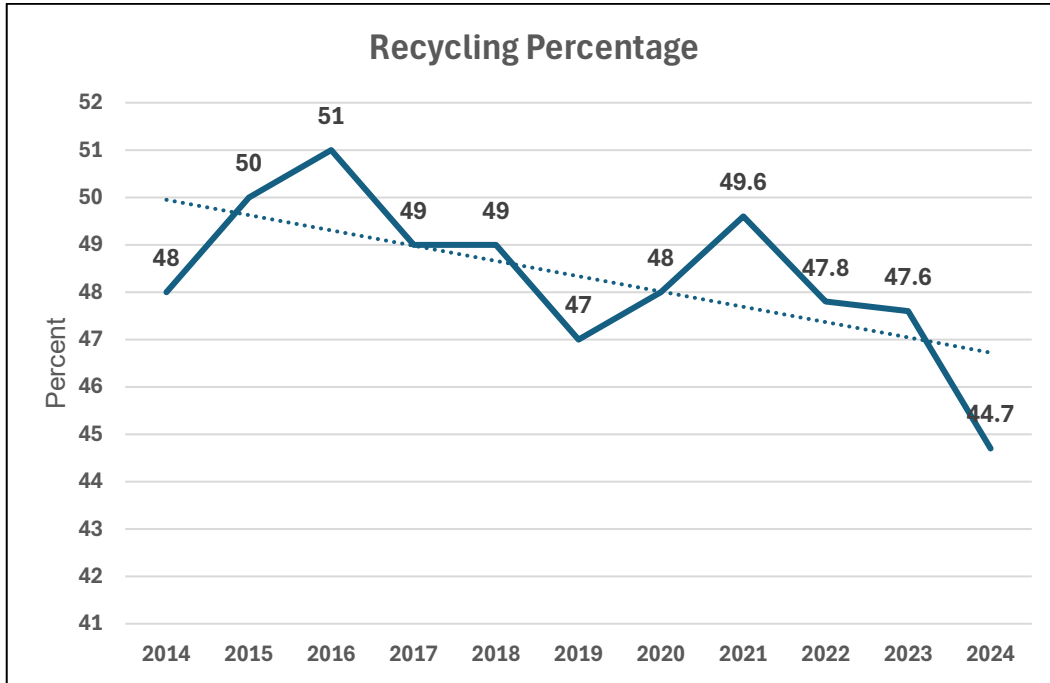
RECOMENDATION: Support development and implementation of the Zero Waste Plan through the annual County operations budgets and five-year CIPs and not rely on user fees or a separate zero waste assessment to fund implementing zero waste. *Recommendation 2025-9 Waste*

COMMENT: Support [EQAC's legislative initiative](#) recommendation to the BOS to include authorization of local jurisdictions to mandate organics waste collection.

Recycling

Fairfax County code requires residents and businesses to recycle. Recycling rates have been declining. In 2024, the recycling rate (44.7%) was 4% lower than the average of the last 10 years (48.7%).

Figure 4-1: [Recycling Rates 2014-2024](#)⁸



Although the total rate has declined, there were notable increases in recycling rates in 2024 compared to historical averages, particularly for glass, food waste, construction waste, and metals recycled. Yard waste recycling remained steady. Declines occurred in paper, cardboard, and commingled recycling (primarily the single stream residential and commercial recycling).

⁸ Eric Forbes, Solid Waste Update, May 12, 2021. https://www.fairfaxCounty.gov/environment-energy-coordination/sites/environment-energy-coordination/files/Assets/EQAC_Solid%20Waste%20Update%205-12-21, and Solid Waste Management Chapter, Fairfax County Budget 2025, <https://www.fairfaxCounty.gov/budget/sites/budget/files/Assets/Documents/fy2025/adopted/volume2/Solid%20Waste%20Overview.pdf>. Fairfax County CY 2024 submission to Virginia Department of Environmental Quality, Form 50-30.

Table 4-1: Recycling and Waste: Comparing 2024 to Historical Averages

Recycled Material	2024	Historical (2012-2022) Average	Change from average
Glass	8,033	1,890	325%
Food Waste	23,628	8,354	183%
Total CCD	119,912	68,667	75%
Metal	71,608	60,686	18%
Yard Waste	213,418	207,556	3%
Commingled	44,222	95,375	-54%
Paper and Cardboard	62,475	84,931	-26%
Total Other Materials	27,276	39,318	-31%
Total Recycled	558,054	564,270	-1%
Total MSW and Recycled	1,258,295	1,186,264	6%
Recycled Percent of Total	45%	48%	-6%

In 2024, [DPWES conducted a study](#) to determine what actually gets dumped at I-66 and 495 waste collection stations. Contractors sorted through eighty-seven truckloads of waste: forty-five commercial loads and forty-two single-family residence loads. To ensure the samples were representative of Fairfax County, multiple loads of residential and commercial waste were sampled from each Supervisory District.

Figure 4-2: Fairfax County Waste Characterization Study, July 2024



Table 4-2 shows the amounts of recyclable materials that were found in the waste to be incinerated and the amounts of recyclables that had already been removed through residents and businesses recycling. The last column shows the proportion of materials that got recycled from the total that could be recycled.

Table 4-2: Fairfax Countywide Waste Characterization Study

Recyclable Material	Can be diverted	% of all solid waste*	Estimated tons	Tons recycled**	Percent recycled
Food Waste	All	18%	195,432	9,288	5%
Paper	All	17%	185,439	62,475	25%
Yard Waste	All	10%	107,710	189,295	64%
Waste Wood	All	5%	53,300	24,123	31%
Glass	All	2%	22,208	8,033	27%
Metal	All	5%	56,631	71,608	56%
Plastic	Some	13%	72,302	1933	3%
Commingled	Some	10%	62,154	44,222	42%
Textiles	Some	4%	26,003	1040	4%
Batteries	Some	0%	0	724	100%
Electronics	Some	2%	12,685	3,304	21%
Construction debris	Some	23%	33,408	119,992	78%
TOTAL			1,110,411	560,930	34%

* Fairfax Waste Characterization Study, DPWES, 2024
https://www.fairfaxcounty.gov/boardofsupervisors/sites/boardofsupervisors/files/Assets/Documents/PDF/Agenda%20Item%203_SWMP%20Handout_Waste%20Characterization%20Study_A-1a.pdf

** Public Solid Waste Services, 2023, Northern Virginia Regional Commission
https://www.novaregion.org/DocumentCenter/View/14461/NVRC_2023-Waste-Management-Report-10-24-24-small

The table shows that about two thirds of recyclable materials are still not recovered. Only a tiny amount (5%) of food waste is recovered. All food waste could be recycled through composting, edible food diversion or feeding farm animals. However, Fairfax lacks the authority from the Commonwealth legislature to require food waste recycling, and there is not enough capacity in the region to manage large new amounts of food waste.

There have been notable successes. Most construction debris and metal are recycled, diverted before reaching the I-66 and 495 tipping floors. Well over half of yard waste is diverted to compost facilities and mulch. Although no batteries were found in the waste composition study, DPWES solid waste management staff report⁹ lithium battery fires have occurred in trash trucks and at the tipping floors.

Figure 4-3: Dump truck fire, April 24, 2025. Fairfax County Fire and Rescue Department.



Fairfax County also contracted for a waste characterization study of County and FCPS operations. Though less comprehensive than the Countywide study, findings from 2024 report on specific County and school sites¹⁰ mirror it. For

⁹ Matt Adams, Eric Forbes, DPWES/EQAC meeting, May 19, 2024.

¹⁰ HDR Engineering, Solid Waste Characterization Study, Fairfax County, VA. April 2, 2024. Sites studied include Fairfax County Government Center, Fairfax Parks, Mount Vernon Government

example, at the Fairfax Government Center, 20% of items thrown in the trash were recyclable and 40% was compostable. In County parks trash, 41% were recyclable and 10% compostable. At FCPS sites evaluated, 23% of trash was recyclable and 40% was compostable.

COMMENT: DPWES should be tasked with monitoring and reporting annually on recycling rates by categories in Fairfax County government and FCPS operations and countywide. Waste composition studies like those conducted in 2024 should be repeated to chart progress and to adjust policies and programs if needed to reach zero waste goals.

COMMENT: DPWES should be tasked with testing the effectiveness, costs, and benefits of recycling improvement strategies within Fairfax government operations and with the 10% of residential customers whose trash DPWES directly collects.

Plastic bags

Virginia Code § [58.1-1745](#) authorized “*any County or city may, by duly adopted ordinance, impose a tax in the amount of five cents (\$0.05) for each disposable plastic bag provided, whether or not provided free of charge, to a consumer of tangible personal property by retailers in grocery stores, convenience stores, or drugstores.*” On January 1, 2022, retail outlets in Fairfax County began collecting the tax. By December 2024, over 3.4 million fewer bags have been used since the tax took effect,¹¹ generating \$7.7 million in revenue to the County that has funded environmental education programs, pollution and litter mitigation and cleanup efforts, and the distribution of reusable bags to residents in need. From 2022 to 2023, there was a decrease of 2.5% in plastic bag use and a 5% drop from 2023 to 2024. That leaves a lot of bags, more than thirty-two million in 2024, still in circulation, still littering Fairfax streets, trees and waterways.¹²

Center, Mount Vernon Fire Station, George Mason Library, Fairfax County Juvenile Detention Center, and 6 Fairfax public schools.

¹¹ <https://www.fairfaxCounty.gov/environment-energy-coordination/disposable-plastic-bag-tax-fairfax-County>

¹² https://www.fairfaxCounty.gov/boardofsupervisors/sites/boardofsupervisors/files/Assets/meeting%20materials/committees/2024/Agenda%20Item%205_Plastic%20Bag%20Tax%20Revenue%20NI_P_A-1a.pdf

Figure 4-4: Plastic bag litter along Fairfax roads, streams, and parks



Many nations¹³ and ten states – California, Connecticut, Delaware, Hawaii, Maine, New Jersey, New York, Oregon, Vermont and Washington – had some form of statewide ban on single-use plastic bags as of 2023 and bans in Colorado and Rhode Island went into effect on the first day of 2024.¹⁴ As of 2021, more than 500 cities and towns across 28 states had a plastic bag ordinance in effect.¹⁵ Bans on single use plastic bags have been more effective than a bag tax in reducing pollution from plastic bags. Authorizing local jurisdictions to increase the bag tax or flat out ban single use plastic bags will cut litter and trash.¹⁶

COMMENT: Support EQAC’s [legislative initiative](#) recommendation to the BOS that it seek legislation that would authorize counties and towns to ban disposable plastic bags.

¹³ https://en.wikipedia.org/wiki/Plastic_bag_ban

¹⁴ National Conference of State Legislatures, State Plastic Bag Legislation, <https://www.ncsl.org/environment-and-natural-resources/state-plastic-bag-legislation>.

¹⁵ Jennie Romer, Surfrider Foundation, Round-Up of Statewide Bag Laws and Preemption (blog post), February 24, 2021, <https://web.archive.org/web/20230829182153/>

¹⁶ Using data compiled by the nonprofit Ocean Conservancy, researchers analyzed results from 45,067 shoreline cleanups between 2016 to 2023, along with a sample of 182 local and state policies enacted to regulate plastic shopping bags between 2017 and 2023. They found areas that adopted plastic bag policies saw a 25 to 47 percent reduction in the share of plastic bag litter on shorelines, when compared with areas without policies. The longer a policy was in place, the greater the reduction. <https://www.nytimes.com/2025/06/19/climate/plastic-bag-bans-litter.html>

PFAS: Forever chemicals on Fairfax lands

Contamination of soil by PFAS and other toxic substances presents a persistent threat to public health and environmental safety in Fairfax County, Virginia. PFAS (per- and polyfluoroalkyl substances) are known as “forever chemicals” because they resist degradation in the environment and bioaccumulate in living organisms. Recent testing shows [PFOS and PFOA levels in Fairfax County Water Authority](#) supplies already exceed the EPA’s Maximum Contaminant Levels (MCLs) of 4 parts per trillion, pointing to a larger concern: that the contamination is not only in the water, but also in the land. Industrial sites like the Micron facility, historic use of PFAS-laden firefighting foams at Dulles Airport and Fort Belvoir, and legacy unlined landfills such as the Hidden Lane Landfill Superfund site in Loudoun County contribute to toxic plumes leaching into groundwater and the Occoquan watershed. A comprehensive site inspection at [Fort Belvoir](#) found PFAS contamination in groundwater and soil at 12 of 17 tested locations, with levels exceeding EPA screening thresholds by over a thousand times in some areas.

These contaminants do not remain isolated. They enter surface and groundwater systems, affecting drinking water, agricultural soils, and even animals that graze on contaminated land. In regions like Fairfax County, where industrial activity has been limited but landfills and military installations are widespread, these chemicals can persist in soils for decades and migrate through watersheds, raising long-term concerns for food safety and public health. For these reasons, PFAS contamination should not be addressed solely in water and wastewater planning but integrated throughout the County’s environmental assessments, including solid waste and land use, to reflect its systemic, cross-media risks. DPWES has taken steps to seek out sources of PFAS within the county and identify sources that either are or have the potential to contaminate other areas. This work should be continued so that sources of PFAS can be identified and cleaned up at the source, which is much more efficient than seeking to clean up diluted concentrations of these forever chemicals.

COMMENT: Support EQAC’s [legislative initiative](#) recommendation to the BOS to phase out PFAS chemicals commercial products that contaminate the Commonwealth’s land, surface water, and ground water, threatening Virginians’ health and polluting the environment.

5. PARKS, ECOLOGICAL RESOURCES, AND WILDLIFE

Board of Supervisors' Environmental Vision:

“Parks, trails, and green space provide habitat and other ecological resources that promote the physical and mental well-being of residents through supporting healthy lifestyles and allowing for interaction with our natural environment... “

“Ecological resources that include the soil, water, air, plants, animals, ecosystems and the services they provide are considered natural capital and green infrastructure. The public, or ecosystem, services provided by this green infrastructure are often more cost-effective than the engineered alternatives, and thus are managed as any other infrastructure or capital asset through deliberate inventory, planning, maintenance, enhancement, and restoration to ensure healthy, high functioning, and resilient ecosystems and environment. Maintaining healthy, natural ecosystems is a priority of Fairfax County.”

“Actively manage urban ecological stressors such as overabundant white-tailed deer, non-native invasive vegetation, forest pests, urban stormwater flows, soil compaction and erosion, and others.”

Introduction

The Office of Environmental and Energy Coordination [Natural Resource Metrics webpage](#) reports approximately 55% of Fairfax County is forested land. 48,000 acres is considered parkland with the Fairfax County Park Authority (FCPA) managing approximately 23,000 acres of that land. The county’s wildlife and ecological resources, owned by different entities, are dispersed across the county. This chapter focuses on the status of the county’s progress to protect or enhance wildlife and natural ecosystems with an emphasis on the components described above in the Board’s Environmental Vision.

Current Status and Concerns

As the county continues to develop land, it is important to actively preserve, protect, enhance, and expand its current park land and tree canopy, not only for the

enjoyment of residents but also as a climate and resiliency strategy. County government plays an important role in preserving and protecting ecological resources, particularly on private land, through its site planning process.

FCPA Funding Model

The current funding structure for FCPA continues to create challenges in supporting the long-term health of FCPA's natural resources. One-off funding sources, such as funds from proffers, donations, [Environmental and Energy Program \(Fund 30015\)](#), and project-based bond funds, play an important role. However, project-based funding means that once a project, such as an ecological restoration, has been completed, the long-term maintenance and upkeep—managing for invasive plants, for instance—must be funded through different means. Logically, even if a generous donor increased FCPA lands by 1%, the annual maintenance budget should increase by 1%.

Underscoring the discrepancy in funding versus need, [FCPA's 2016 Needs Assessment](#) reported that an additional \$2,350 per acre of annual funding (for all 17,000 acres of natural area owned by FCPA--close to \$40M/year) would be needed to perform the necessary maintenance activities for the county's natural resources. FCPA is currently finalizing their 2026 Needs Assessment. However, in a presentation provided to the Park Authority Board and EQAC on [May 14, 2026](#), today's funding falls significantly short of that goal as part of the County's FY26 budget.

Relying on one-time funding, such as budget carryovers, grants, etc., to pay for recurring FCPA activities is an unsound financial practice that continues to lead to painful choices. It causes FCPA to lack the long-term security needed to effectively protect natural resources, particularly in our urban areas that have the highest stressors to natural resources and contain the highest populations of vulnerable communities.

EQAC commends the continued allocations in the budget, beginning in FY23, in FCPA's Landscape Legacy and Sustainability Program. This recurring program funding is a good start and plays a critical part in maintaining the integrity of some of FCPA's key areas in the long-term. EQAC appreciates FCPA's focus on restoring areas with rare natural resources, such as Poplar Ford and Elklick, but also pro-

actively identifying restoration projects in every district in the county to ensure more equitable investments in restorations.

Particularly challenging for this past year's funding cycle is the County Executive directive to cut 10% from every county department. These necessary cuts imposed on the already strained budget projections that the FCPA is facing create additional risk of FCPA's ability to sustain the level service for the county's top-tiered conservation and maintenance for our natural resources and their natural resource management programs, such as the Landscape Legacy and Sustainability program or the Invasive Management Area program.

The County needs to ensure stable funding sources for the FCPA services that maintain their natural resource experiences and sustain other natural resource management programs to meet these program goals.

COMMENT: Ensure stable funding sources for the Fairfax County Park Authority (FCPA) services that maintain their natural resource experiences and sustain other natural resource management programs to meet these program goals.

In a [June 25, 2024 Board Matter](#), a motion passed unanimously by the BOS to have the County Executive explore the establishment of a Public Recreational Facilities Authority. It was stated that the advantages to the county could be to better facilitate collaboration on and construction of new facilities, foster partnership with neighboring jurisdictions or institutions, and generate opportunities that benefit County residents. It's speculated that this may also be a potential means to boost county revenue. EQAC has concerns on how this might impact the overall revenue of the FCPA as it relates to potential funding framework for its natural resources programs.

COMMENT: EQAC will continue watching the Board's exploration of a Public Recreational Facilities Authority in the coming year to discern potential impacts to FCPA management of the county's natural resources.

Natural Resources: Planning Resources and Protection Opportunities

The county's [Comprehensive Plan](#) contains strong language in support of the Board's Environmental Vision, particularly in the [Environment](#) section. A key objective the county should continue to focus on is identifying, protecting, and enhancing an integrated network of ecologically valuable land and surface waters for present and future residents of Fairfax County such as designating

Environmental Quality Corridors (EQCs).¹⁷ While OEEC has a [Natural Resource](#) webpage with a comprehensive list of mapping tools for natural resources and areas of concerns associated with these resources, it should be noted that a comprehensive, countywide GIS layer with approved and/or potential EQCs does not exist.

COMMENT: Authorizing Strategy AE.1a of Resilient Fairfax (Develop a Consolidated Natural Resources Management Plan) would produce a resource to document EQCs and other ecologically important areas.

EQAC acknowledges the County’s efforts in prioritization of projects funded by the Tree Preservation and Planting Fund in areas identified as Heat Island, but one aspect that the county needs additionally to prioritize is ensuring equitable distribution of ecological corridors, focusing on the establishment and enhancement of these corridors in the most vulnerable areas of the county. A network of interconnected green spaces and increased tree canopy where it is lacking today would benefit residents and wildlife alike, such as in some of the county’s more urban settings. Private property contains a significant amount of ecological resources, which is worth noting here, as individual properties have the opportunity to be “habitat stepping stones” linking public lands as part of ecological corridors. While the Northern Virginia Soil and Water Conservation District and Fairfax County have programs such as the [Conservation Assistance Program](#) and the [Flood Mitigation Assistance Program](#), which provide financial assistance to homeowners for projects that can remediate or enhance natural resources, the County should consider policy changes or incentives, similar to the USGS [Conservation Reserve Enhancement Program](#) for private landowners to conserve tree canopy, which may help further this goal.

RECOMMENDATION Authorize the development of a consolidated natural resource management plan that ensures frequent reliable data collection methods drive decision making for more equitable investment in ecological restorations and corridors. *Recommendation 2025-10 Parks, Ecology, & Wildlife*

Tree Canopy

EQAC commends the county for tree canopy being an important component of the Community-wide Energy and Climate Action Plan (CECAP) as well as Resilient

¹⁷ [Objective 9 of the Environment section of the Comp. Plan discusses EQCs.](#)

Fairfax. One of CECAP’s sector goals proposes that Fairfax County expand the tree canopy to 60% with a minimum of 40% tree canopy coverage in every census tract by 2030 and a minimum of 50% tree canopy coverage in every census tract by 2050, prioritizing areas of highest socioeconomic need first¹⁸. Similarly, in Resilient Fairfax, the goals incorporated in “Adaptive Environments Implementation Roadmaps”¹⁹ include a focus on enhancing the county’s tree canopy. The two top concerns highlighted below include establishing a more effective means of evaluating the quantity and quality of tree canopy data and better means to incentivize biophillic designs with future land development.

Maintaining Current Reliable Tree Canopy Data

The tree canopy of Fairfax County is good, but its exact extent is subject to some interpretation. UFMD released a summary of results of the 2012-2021 tree cover analysis done by Casey Trees via a memo to the Board of Supervisors in May 2024. This analysis, using National Agriculture Imagery Program (NAIP) 0.6-meter land cover data, showed an **overall increase** in tree canopy from 52% to 55%, and an increase reported in every district in the county. Conversely, the [Chesapeake Program Tree Canopy Network did a tree canopy analysis](#) of Fairfax County using different data comparing 2014-2021 canopy coverage on developed lands showed a total coverage of 55%, but shown an **overall loss** of 1,736 acres of tree canopy attributed to land development.

While these two different data sets cannot be compared directly, their conflicting nature underscores the complexity of, and the need for ongoing, tree canopy analysis²⁰.

Tree Canopy Extend and Community Vulnerability

¹⁸ Page 56: [CECAP implementation plan](#); county staff noted that where this plan says “block” it should be “tract”:

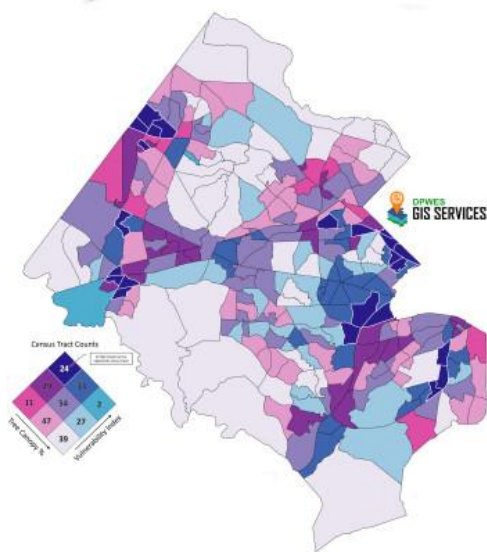
¹⁹ [Resilient Fairfax](#)

²⁰ A Note About Reporting on Tree Canopy Coverage

One note of concern about tree canopy reporting is the limitation of the current technology. Current imagery can be interpreted to measure canopy coverage (quantitative), but it cannot today report on canopy quality. For example, invasive vines (which threaten tree canopy) and invasive trees such as Callery pears and Tree of Heaven show up as tree canopy coverage the same as a native oak tree. As such, interpretation of current and future reports must be carefully considered. A high quantity of tree canopy may not reflect a high quality of tree canopy and we appreciate the mention that “staff remain cognizant that changes in forest composition, loss of mature trees, and increased abundance of invasive plants, are not fully accounted for in the study” in the May 2024 memo. The 2017 i-Tree Eco Urban Forest Assessment reported on field study data from 2009-2010 of 204 plots across the county. This on-the-ground sample data can help the county extrapolate quality; however, this data too must be kept current to be most useful.

EQAC appreciates that Strategy IAP.2f of Resilient Fairfax calls for the county to “Continue to Collect Tree Canopy Data” – analysis of this data is equally important. In 2021, staff in the Department of Public Works and Environmental Services (DPWES) put together an initial map²¹ (Figure 5-1) overlapping areas of existing tree canopy coverage with a vulnerability index that helps identify areas with the greatest need of increased tree canopy. These data show the areas of greatest need are in the vicinities of Centreville, Chantilly, Herndon, Seven Corners, Bailey's Crossroads, Springfield, and along the Route 1 corridor. Additionally, a graduate student at Virginia Tech is working with Casey Trees, using data from Fairfax County, to analyze development plans from 2012 versus current conditions on the ground to see if the county has achieved the canopy coverage proposed. The results of this master’s thesis is expected to be completed in 2025, and it is expected that the data and findings will be publicly available. The County should seek new tree canopy data and analysis, such as the data mentioned above, as frequently as possible to ensure maps such as in Figure 5-1 can help drive decision making. Without regular data updates *and* analysis, the county lacks a critical tool needed to achieve a healthy, native tree canopy that, in the spirit of One Fairfax, is equitably distributed across the county to ensure all residents reap the benefits of tree cover.

Figure 5-1: Tree Canopy and Vulnerability Index Mapping Areas of Greatest Tree Canopy Need. Source: [Tree canopy & vulnerability map of Fairfax County](#) developed by DPWES staff Yeoanny Venetsanos and Juan Reyes, 2021



²¹ Tree canopy & vulnerability map of Fairfax County developed by DPWES staff Yeoanny Venetsanos and Juan Reyes, 2021.

Improving land development

As properties continue to develop and re-develop, well-designed land use can contribute to a healthy ecology. This topic is further addressed in the Land Use chapter in greater detail, but it is worth noting here that concepts such as [biophilic designs](#) (designs of buildings aiming to increase occupant connectivity to the natural environment) can significantly enhance an area’s natural resources. The following are key areas for consideration:

- In late 2022, UFMD’s Forest Conservation Branch (comprised of thirteen foresters) moved out of UFMD and into Land Development Services (LDS). This move has allowed UFMD to focus on urban forestry (and not development) which could help better to achieve the goals of new policies such as Resilient Fairfax and CECAP. We urge Fairfax County to monitor this change to be able to see what the outcomes have been.
- EQAC supports the recommendations listed in the Tree Commission’s 2025 [Annual Report](#), particularly those that seek to enhance land-use policies for conservation and enhancement of our urban forests in vulnerable communities.

RECOMMENDATION Create or advocate more incentives to preserve tree canopy on private property and to promote environmental corridors to achieve a healthy, equitable tree canopy. *Recommendation 2025-11 Parks, Ecology, & Wildlife*

Animal Services Consolidation Proposal

EQAC commends the Fairfax County Police Department (FCPD) for continuing to fund and staff the Wildlife Management Program, especially the [Deer Management Program](#) and the [Canada Geese Management Program](#). While both programs are equally as important to achieving the Board of Supervisor’s (Board) Environmental Vision, this year’s focus on wildlife management will highlight concerns with the 2024 Animal Services Consolidation Proposal and discuss the needs of greater public outreach within the overall Wildlife Management program.

On May 7, 2024, the Board adopted the FY25 Budget with the Animal Service Consolidation plan included. While the Board agreed with the [staff proposal to consolidate animal control services into the Department of Animal Sheltering \(DAS\)](#), they also acknowledged the concerns from the public and staff regarding how this new model would impact service delivery. Given the concerns voiced by residents, the Board requested additional clarification from staff on how this consolidation will be operationalized and a clear timeline of implementation strategies needed to provide further transparency. Furthermore, staff was directed

to return to the Board as part of a Safety and Security Committee meeting to provide additional details regarding the roles of DAS staff and police officers under this new structure and any changes to the philosophical approach to wildlife and other services.

In the 2024 ARE, EQAC supported the request made by the Board and further recommended that part of the effort, staff should conduct a comprehensive analysis on the potential impacts and benefits on wildlife via this new model and presented to the Safety and Security Committee meeting to discuss how the new model accomplishes the position of staff claiming the new model supports One Fairfax, results in better outcomes for wildlife in the county, maintains safety for residents, reduces the budget, and provides greater efficiency. During the February 2025 Safety and Security Meeting, staff presented an update on the [consolidation plan](#) and updates on the [wildlife management program](#). In that presentation, the DAS and the Wildlife Management Program reported on the respective framework of the programs established since the plan was adopted. Furthermore, it was reported by the DAS that response to wildlife calls in the county remain unchanged and highlighted future steps the program is seeking to ensure best practices are being followed as well as consistency with services provided under the previous model.

COMMENT: EQAC believes its previously stated concerns still remain and will continue to monitor the progress of the consolidation effort to ensure the exceptional services from an exemplified framework under the previous model are maintained under this new model.

Proactive Public Education and Outreach

The archery program is the largest contributor to managing the deer population in Fairfax County, accounting for approximately 91% of the total deer harvested in FY 2024. The success of the program relies on the willingness of qualified volunteers to participate. The Wildlife Management program reported 504 volunteers participated in the program in FY 2025, contributing 34,406 hours. County wildlife staff, who operate the Deer Management Program, have hosted classes for deer processing (field to table) and International Bowhunter Education Program (IBEP) courses. These events are not advertised for the public due to staffing constraints but have only been offered for members of the Deer Management Program and individuals who have contacted staff with interest in joining the county program.

County staff have established education material to inform county residents of concerns regarding the impacts of over-populated deer populations and the Deer Management program. However, due to resource limitations of dedicated staff, the

sharing of that information is limited to individuals who are seeking that information instead of utilizing an outreach approach. While the deer management program has some outreach framework, other programs have even less established public outreach opportunities. There is an opportunity to increase this outreach of its many initiatives and focus on all areas of the county, including areas with less access to natural resources such as our urban areas.

On [April 9, 2025](#), the Wildlife Management program presented an update on their program to EQAC. Regarding EQAC's recommendation for an added position to the program dedicated specifically to public outreach, it was reported that the position has not been authorized. For the program to remain successful, it must continue to effectively raise public awareness so that the county's residents can stay informed on wildlife management issues and promote wildlife management educational opportunities.

COMMENT: EQAC recommends that the Wildlife Management program be authorized for an additional position to support public outreach. This position would not only support the deer management program, but the entire wildlife program with creation of outreach materials (brochures, info cards), community presentations, exhibit booths at outreach events, handling media inquiries with FCPD's Public Affairs Bureau and Office of Public Affairs, social media, etc.

6. CLIMATE AND ENERGY

Board of Supervisors' Environmental Vision:

“The county will continue its leadership and commitment to promote and encourage energy efficiency and conservation efforts and renewable energy initiatives by employees, employers and residents. The county will work with local authorities, businesses, and residents to encourage sustainable reductions of the county’s geographical emissions that will contribute to achieving the targets as identified by the Cool Counties Climate Stabilization Declaration and the Metropolitan Washington “

Introduction

Anthropogenic activities resulting in Greenhouse Gas emissions (GHGs) are the cause of climate change. The United States leads the world in the cumulative release of [GHGs per capita](#). Within the U.S., actions at the federal, state and local level have all been part of the work that has been undertaken to reduce GHG emissions. Given the history of the United States in contributing to GHG emissions, it is important that the United States show leadership in reducing GHG emissions and it is appropriate that Fairfax County join national and state partners in reducing GHG emissions.

The summer of 2024 set [record high temperatures worldwide](#) and the Washington Metropolitan area, including Fairfax County. The Fairfax County website notes that the summer of 2024 observed higher temperatures that indicate that [our climate is changing](#) with hotter temperatures.

To limit the adverse impacts of global warming, the Paris Agreement of 2015 was adopted by 196 parties at the United Nations Climate Change Conference. The [agreement](#) calls for limiting global warming to 1.5°C above pre-industrial levels. [Major reductions in GHG emissions will be required to meet the goal of limiting an increase in temperature to 1.5°C.](#) Scientific experts find that [current efforts will not be sufficient to limit the increase in temperature to 1.5° C.](#) Many scientists fear that existing and projected levels of CO₂ in the atmosphere mean that [current efforts to limit rising temperatures won’t have an impact until after we’ve experienced increases of 3 degrees C or 7.4 F.](#)

Like many other local governments, Fairfax County is undertaking efforts to both reduce GHGs and make the county resilient to climate change impacts. The county has adopted several programs to address climate change: 1) the Community-wide Energy and Climate Action Plan (CECAP); 2) the Resilient Fairfax, which is the county's plan to boost resilience to changing climate-related condition, (such as changes in temperature, precipitation and storm severity); the county's Operational Energy Plan and the Joint Environmental Task Force, which joined political and administrative capabilities between the county and Fairfax County Public Schools to address climate change and environmental sustainability²².

While Fairfax County is making significant progress in addressing climate change, programs that have historically been funded by the federal government and are being funded by other governments are proposed to be eliminated by the current federal administration. This threat to funding will slow progress on climate programs, including making county residents more vulnerable to climate impacts and slowing progress to reduce toxic tailpipe and GHG emissions from vehicles.

Community-Wide Energy and Climate Action Plan (CECAP)

CECAP sets a goal for the county to reach carbon neutrality by 2050 and a reduction in GHG emissions of 50% by 2030. CECAP was adopted in 2021 and followed by an implementation plan in 2022. According to the most recent GHG inventory by the Metropolitan Washington Council of Governments (MWCOG), Fairfax County community-wide GHG emissions decreased by 30% between 2005 and 2020, despite a 12% growth in [population](#). The Fairfax County Climate [Dashboard](#) provides information on past and projected GHG emissions. This information shows that GHG emissions associated with buildings and transportation dominate the county's GHG emissions.

²² See Appendix A, Spotlight on Fairfax County Public Schools for information on the schools.

Figure 6-1. Fairfax County [Greenhouse Gas Emissions](#) with Future Scenarios

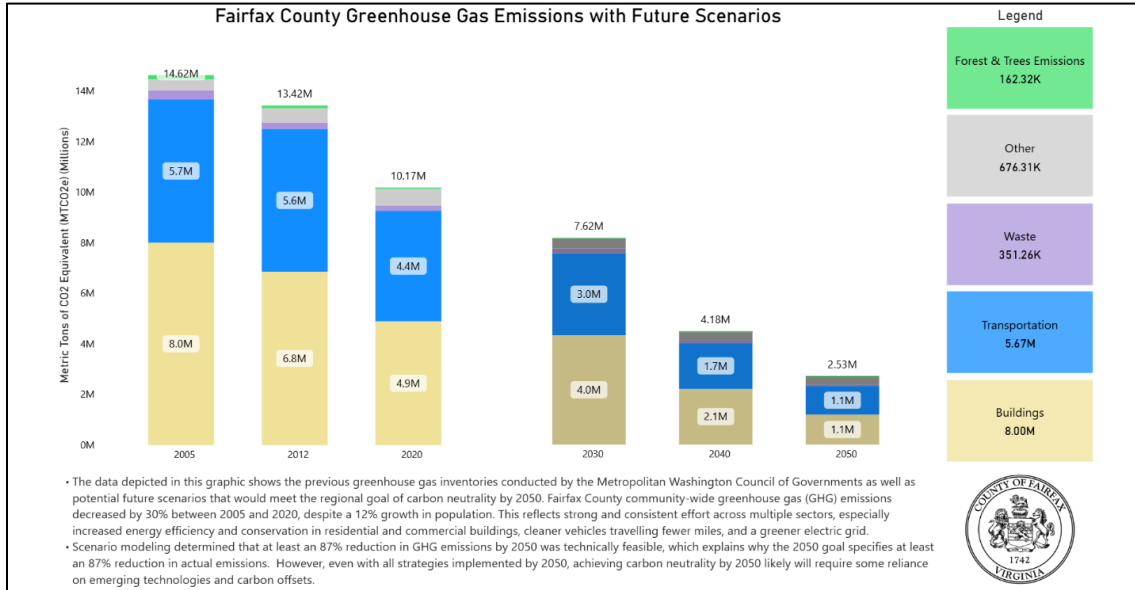


Figure 6-1 shows that GHGs associated with building operations and transportation dominate GHGs for the county. EQAC appreciates that the county has focused many CECAP related efforts on buildings, energy and transportation. However, EQAC also recognizes that a plan is needed to reach county goals and for those actions to be funded. Thus, efforts to reduce emissions attributed to buildings and transportation should continue to be a priority. Having a plan to show that resources are being directed so that the county will reach its climate goals is important to the BOS and the residents.

To explore how available data might support a plan to reach CECAP goals, this chapter reviews the strategies associated with the greatest emission reductions provided in the final CECAP report. Countywide GHG emissions come from transportation (44%), residential and commercial buildings (49%), air conditioning and refrigerant escaped gases (5%), and waste (2%). Thus, the vast majority of opportunities to reduce GHG emissions result from buildings, energy, and transportation.

The county’s [Community-Wide Energy and Climate Action Plan](#) includes a dozen strategies. Each strategy can have from two to five actions. The final CECAP report only provides emission estimates at the strategy level but provides qualitative cost information for each action.

Table 6-1. Strategies Associated with Buildings, Energy Production and Transportation

County Estimate of Emissions Reduction (MT CO₂e)	Strategy	Comment
2,044,000	Increase electric vehicle (EV) adoption	The county should continue efforts to promote EV adoption and support the development of EV charging. Adoption of EVs is critical to meeting the county’s climate goals. The county can make it easier to own an electric vehicle by providing/facilitating the placement of charging options (especially Level 3), promoting state and local tax credits, and requiring charging capabilities in construction.
1,390,000	Increase the amount of renewable energy in the electric grid	Dominion Energy controls the mix of renewable energy in the electrical grid in Northern Virginia and they must be held to Virginia Clean Economy Act requirements.
1,324,000	Increase Energy Efficiency and Conservation in Existing Buildings	Legislative changes are needed to know even more about energy efficiency and conservation, let alone require it.
129,000	Implement Green Building Standards for new Buildings	While the county has Green Building standards for county projects and the Environmental Element of the Comprehensive Plan applies the Green Building Policy to private developments that go through the entitlement

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		process, green building standards should be applied to all building projects that provide an opportunity to reduce energy.
1,145,000	Electrify Existing Buildings	The county can electrify its buildings but private and other governmental entities control electrification so outreach should help with voluntary conversion, but legislative changes will be needed.
946,000	Increase fuel economy and use of low-carbon fuels for transportation.	Success with this action will require choosing vehicles that are fuel efficient or use low-carbon fuels.
733,000	Increase energy supply from resource-recovered gas, hydrogen, and power-to-gas	This action will have benefits in the future.
462,000	Increase production of onsite renewable energy	Fairfax County is undertaking this kind of work (e.g., Lorton Landfill solar farm) but much more is needed on the private side.
392,000	Support sustainable land use, active transportation, public transportation and transportation demand management to reduce vehicle-miles traveled.	This strategy requires county leadership. This estimate of GHG reduction may well be underestimated.

Some conclusions that can be drawn include:

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1. Shifting to renewable energy is critical to achieving GHGs reduction goals and the use of fossil fuels to generate energy should be eliminated to the extent feasible.
2. Moving power utilities, Dominion Energy for Northern Virginia, to renewable energy is under state control but would greatly facilitate meeting GHGs reduction targets.
3. Electrification of the vehicle fleet both reduces toxic air pollutants (see air chapter) and lowers GHG emissions over vehicles powered by fossil fuels.

If the electrical grid relied solely upon renewable energy, buildings were electrified (that is not reliant on burning diesel, natural gas or other fossil fuels) and the transportation network was powered by the electrical grid or other renewable energy, the county would meet its GHGs reduction goals.

Many actions will either require voluntary action or legislative changes. [The World Bank](#), the [National Center for Science Education](#), and others highlight the importance of outreach and education to build support for actions to address climate change. Outreach to inform the public of the actions that they can take. There is widespread concern for the impacts of climate change from individuals to corporations to government organizations. If people understand what they can do in their community to take action to combat climate change, better participation can be expected. EQAC commends the county for establishing programs to encourage residents to take actions (e.g., Sustain Fairfax, grants to help community associations establish EV chargers, waiving permit fees for EV charger installation, home audits and other).

The county created the [Green Business Partners](#) program to recognize businesses that are engaged in or are working to adopt sustainable business practices that advance climate action and will help create a carbon neutral economy. As of October 1, 2025, the Green Business Partners program has 31 Members and 22 Leaders for a total of 53 Fairfax County businesses. In addition, there are 14 Allies (businesses that are not located in the county but work with county business to green operations that support businesses to adopt green practices). The Green Business Partners Program recognizes companies for obtaining or working toward a 3rd party certification for greening their business, which can overlook businesses that have made or are making even greater progress in reducing GHG emissions.

The Green Business Partners program does not include many of the leading companies with known strong environmental sustainability commitments and practices Among the Fortune 1000 companies in Fairfax County, 14 of these companies are headquartered in Fairfax County and 4 are in the Green Business Partners program (Freddie Mac, General Dynamics, Leidos, and Maximus). While the focus of the Green Business Partners was to focus on businesses who had obtained or were seeking to obtain some 3rd party certification, such as LEED, staff recently shared that there are efforts to explore ways to entice more businesses to participate in the Green Business Program and recognize companies for progress in important measures such as reducing GHG emissions, energy efficiency and other useful measures. In a survey conducted by the Green Business Partners Program, businesses have indicated that recognizing basic environmental metrics like reporting GHG emissions and efforts to reduce GHG emissions would help to bring more businesses into the Green Business Program. We agree and applaud the efforts to entice more programs to join the Green Business Program and recognize additional metrics beyond 3rd party certification.

While legislative actions would be needed for the county to require more sustainable practices, businesses can and are taking voluntary actions to improve the environment and they should be recognized for their work.

RECOMMENDATION: Regularly convene business leaders to share successes and expertise. The county should find recognize these business leaders for accomplishments in reducing GHG emissions, energy efficiency and other environmental accomplishments in a manner that is meaningful to them.

Recommendation 2025-12 Climate & Energy

Reducing Emissions from Buildings

Building energy needs can be reduced by the use of green energy (i.e., energy from sources that do not contribute to GHG emissions) and energy efficient building.

The following information has been modified from Table 1 in the final CECAP report. The tables below include a comment column, which was prepared as part of this chapter. It should be noted that cost represents a cost estimate to community members.

Table 6-2. Potential GHG Reductions from Buildings (Modified from Table 1 in CECAP Report)

Strategy	Action	Cost	Timeframe	Comment
S1 Increase energy efficiency and conservation in existing buildings (1,324,999 MT CO ₂ e)				
S1a	Increase energy efficiency in residential buildings	\$\$\$	Immediate	Increasing energy efficiency in residential buildings is feasible but outreach will be critical to gain support for work with savings that would pay into the future.
S1b	Increase energy efficiency in commercial buildings	N/A	Immediate	Similar to residential
S1c	Increase energy efficiency in local government existing buildings and streetlights	\$	Immediate	This work has been underway for years and has been effective in also reducing future operating costs.
S1d	Develop and expand district energy and CHP* systems	N/A	Immediate	
S1e	Expand gas and electricity demand flexibility	\$	Immediate	Dominion demand management can be helpful, including Residential low income pilot Demand Side Management Program for Income-Qualified Pilot Program Notice of Filing business demand side management Targeted Sector Programs
S2 Electrify Existing Buildings (1,145,000 MT CO ₂ e)				
2a	Electrify existing residential buildings	\$\$\$	Immediate	Costs would be reduced if changes were made when

				equipment replacement is needed
2b	Electrify existing commercial buildings	N/A	Immediate	Similar to residential for companies
2c	Reduce the use of high-GWP refrigerants	None	Soon	While EPA regulation to phase down HFCs to 85% by 2036, some companies in the county were eliminating these high-GWP refrigerants years before the regulation was adopted.
S3 Implement Green Building Standards for New Buildings (129,00 MT CO₂e)				
S3a	Increase building code stringency for residential and commercial buildings	\$\$	Immediate	Virginia legislation is needed to compel uniformity, but voluntary actions have been effective
3b	Support all-electric new residential and commercial construction	\$\$	Immediate	Legislation would be needed for uniformity, but voluntary actions are effective
3c	Support green building principles and practices	N/A	Immediate	Many like the idea of green building principles and practices but may not be clear on actions.
3d	Support reuse of existing buildings	N/A	Immediate	See recommendation in Land Use chapter

*Combined Heat and Power

Electrifying residential and commercial buildings by moving away from fossil fuels and reducing the use of refrigerants that have a high global warming potential are important to GHG reduction efforts. Similarly, increased energy efficiency and conservation in existing buildings will also be important to meeting GHG reduction goals by reducing energy needs (and associated GHG emissions). The CECAP Report shows that we can expect the least benefit from implementing green building standards for new buildings. While green building standards have evolved and are likely to continue to evolve with time, reducing energy needs will continue to have benefits into the future. In the absence of legislation to compel changes, decisions to undertake these strategies will be dependent upon voluntary actions.

Comment: As shown above, the county is limited in the steps it can take to address building energy efficiency. Legislative changes are needed and EQAC has provided legislative recommendations to allow the county to take steps to improve building energy efficiency.

Using Renewable Energy to Reduce GHGs

Switching from fossil fuels to renewable energy for the generation of electricity needs is another important strategy to reduce GHG emissions.

Table 6-3. Strategies to Reduce GHGs with Renewable Energy

Strategy	Action	Cost	Timeframe	Comment
S4 Increase the amount of renewable energy in the electric grid (1,390,000 MT CO ₂ e)				
4a	Develop Large Offsite grid renewable energy	\$	Immediate	There are efforts to develop large offsite grid renewable energy from the county and others
4b	Increase energy efficiency in commercial buildings	N/A	Immediate	Similar to residential for companies
4c	Maintain nuclear energy at current levels	No Cost	Immediate	Small nuclear reactors are favored by Dominion Energy and some data centers so growth of nuclear energy seems likely.
S5 Increase production of onsite renewable energy (462,000 MT CO ₂ e)				
5a	Expand solar PV on existing buildings	\$\$\$	Immediate	While PV on existing building may be expensive, it will pay for itself over time.
5b	Support solar PV in all new construction	\$\$	Immediate	Solar PV in all new construction will add to cost when resources might be tight for the client.

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5c	Support Community Solar	\$	Soon	Community solar may be very welcomed by community members
5d	Develop battery storage products	\$\$\$	Soon	An ordinance is in development, and some progress is being made.
S6 Increase energy supply from resource-recovered gas, hydrogen, and power-to-gas (733,000 MT CO ₂ e)				
6a	Expand the supply and use of resource-recovered gas, hydrogen, and power-to-gas	N/A	Future	Hydrogen in particular may be a long way off-if fossil fuels are used to generate hydrogen, then there would not be a net benefit.

Increasing the amount of renewable energy in the grid is required by the Virginia Clean Economy Act, which requires Dominion Energy to achieve carbon neutrality by 2045. Increasing energy from renewable sources has the greatest potential to reduce GHG emissions among these strategies. Residential customers can voluntarily seek to purchase green energy from their energy provider or install renewable energy on their property. Owners of commercial building have similar options, but the choices of some companies may be dictated by strong environmental policies, which currently receive limited recognition by the county.

Unfortunately, the county usually lacks the authority to track, much less compel parties to undertake these actions. In the absence of objective information tracking metrics used to evaluate the extent that progress is being made, it will be difficult if not impossible to claim progress in greening businesses. Therefore, developing the capability to track progress for residential, commercial, or other entities on energy use, grid storage, and reliance on energy utilization is important for success of this strategy and EQAC recommends that the county support legislation for the state to collect and report on energy and water use. In the absence of state action to undertake these tasks, the county should support legislation to allow the county to do so. This information is important to see progress and to highlight successful efforts of businesses to green their business, especially reducing GHGs.

Data Centers pose several concerns to that have been documented in several memoranda to the Board of Supervisors. There are several concerns associated with data centers, including:

- Impacts to adjacent communities from noise and aesthetics.
- While some data centers employ green energy, many data centers do not employ green energy and the growth in energy demand ([largely due to data centers and is largely being met with energy from fossil fuels](#)), reducing the chances for meeting carbon neutrality goals. EQAC recommends that those data centers that use renewable energy be recognized for this important environmental contribution.

As noted in the Water Chapter, evaporative cooling can use enormous quantities of water to dissipate heat generated and is used because it is a cheap way to cool data centers. Evaporative cooling can create a waste of concentrated salts that will negatively impact drinking water sources.

There are two primary concerns related to the energy needs of data centers. First, available information indicates that the significant energy needs of data centers have triggered the need for more power plants, but it is important to recognize that companies that own/operate data centers have aggressive carbon neutrality goals—so these facilities should be employing green energy. Unfortunately, the lack of reporting on energy use or otherwise sharing this information precludes the identification of facilities that provide their own green energy, which is why EQAC has included energy reporting in our legislative recommendations. Facilities employing green energy should be recognized and applauded. Second, in order to meet energy demands of data centers, [the construction of power plants to provide additional energy is increasing the cost of electricity](#).

Data center owners/operators have endorsed the use of a data center campus/technology center, which would allow the data centers to take advantage of data cables, electrical substations, and other infrastructure. A campus would also benefit nearby neighbors by avoiding the placement of noise generating equipment (e.g., generators, cooling equipment) on the side of buildings that faces neighbors. Noise and pollution can be further reduced by employing generators that are designed to reduce noise and pollution. Fairfax County has taken steps to reduce these impacts by requiring the enclosure of equipment where possible and requiring noise studies to ensure compliance with noise standards. We also

understand that the county is requiring best available technology to reduce noise and pollution from onsite backup generators.

RECOMMENDATION: The County should adopt a strategy for the siting of data centers. If hyperscale data centers are sought, a technology campus will help to insulate communities from noise and other impacts of data centers.

Recommendation 2025-13 Climate & Energy

The county established the [Going Solar in Fairfax County](#) website to encourage businesses and residents generate carbon-free power on their own properties. In addition, the website includes information on [Switch Together](#) and [Solarize Virginia](#). Participants in these programs can receive a free virtual assessment to determine if their home or business is well-suited for solar energy, gain access to qualified solar installers and financing, get lower costs for purchasing solar and battery storage, and purchase and install EV charging stations along with their solar purchase. Since 2015, 445 households in Fairfax County have gone solar through Solarize Virginia. 2023 was the first year Switch Together was promoted by Fairfax County Government, and the program had 1,715 registrations and 122 signed contracts for solar in Fairfax County. A new marketing campaign dramatically increased sign-ups in the program in 2024.

Encouraging residents and businesses in Fairfax County to install solar and other alternative energy sources is a priority, which is included in CECAP. In response to concerns over the loss of prime agricultural and forested land, Virginia now has a [regulation](#) that requires land disturbances be offset by conservation easements on some large solar projects. Siting solar panels on buildings, parking lot roofs, parking lots, and other appropriate locations in urban and suburban areas is therefore increasingly important. However, the goal should be to attain carbon neutrality and offsite solar may also be used to achieve where onsite solar is insufficient or impractical. We appreciate the installation of solar canopies above parking lots, such as Metro is doing in several locations. Siting solar farms on brownfields and abandoned mines, which are already environmentally impaired, is generally well suited to this purpose.

Another barrier to onsite energy is that [Dominion Energy imposes 100 percent of the costs of grid interconnection equipment needed for mid-sized solar installations on individual solar installers. This action is undercutting the economic viability of solar panels on several Fairfax County buildings, including schools.](#) While efforts are underway to change this at the state level as a result of a new law directing the State

Corporation Commission to review the connection rates and progress is expected soon.

Information on the progress of Fairfax County Public Schools to address climate change is summarized in the Spotlight on schools.

The last strategy in this group addresses expanding the supply and use of resource recovered gas, hydrogen and power-to-gas in the future.

COMMENT: EQAC has recommended that the county support the legislative recommendation to allow counties to require solar energy on buildings and parking lots. While the county has made good progress in promoting solar energy to the private sector and installing solar energy on county property (including schools), the instillation of more solar energy is important to meeting carbon neutrality goals.

Reducing Transportation Emissions

Emissions associated with transportation provide significant opportunities to reduce transportation related GHG emissions.

Table 6-4. Strategies to Reduce GHGs from Transportation

Strategy	Action	Cost	Timeframe	Comment
S7 Increase electric vehicle (EV) adoption (2,044,000 MT CO ₂ e)				
7a	Leverage county assets to expand EV use across on-road vehicles and off-road equipment.	N/A	Immediate	While progress has been made, FCPS cancelled orders for electric school buses.
7b	Increase EV adoption by residents, businesses, and private fleets.	\$\$\$	Immediate	EV adoption is increasing but the potential loss of federal benefits for EVs and high tariffs is a deterrent to potential EV purchasers.
7c	Install EV chargers in new buildings.	N/A	Immediate	County staff have stated that Comprehensive Plan language will include language to require some EV chargers and capacity to provide charging stations for all parking (see EQAC comments on draft Comprehensive Plan language).

S8 Support sustainable land use, active transportation, public transportation and transportation demand management (TDM) to reduce vehicle miles traveled (392,000 MT CO ₂ e)				
8a	Support the use an improvement of bicycle and pedestrian infrastructure.	\$	Immediate	In addition to reducing vehicle miles traveled, improvements to walking and bike paths are also important for a healthy Fairfax.
8b	Support the use and improvement of public transportation and commuter services.	\$	Immediate	Supporting public transportation is critical to providing people with an alternative to single occupancy vehicles.
8c	Support smart-growth and transportation demand management (TDM) strategies.	\$	Soon	Tysons and other high-density development near metro are already having real benefits by providing residents the ability to live, work and recreate within a neighborhood.
S9 Increase fuel economy and use of low-carbon fuels for transportation (946,000 MT CO ₂ e)				
9a	Support low-carbon fuels for transportation.	\$\$\$	Immediate	Alternative fuels have a reduction in GHG emissions but much less than EVs, especially when EVs are powered by green energy.
9b	Support improvement to fuel efficiency.	\$\$\$	Immediate	Improvements to fuel efficiency in the county depend upon turnover to vehicles with lower emissions.
9c	Support low-carbon fuels for aviation.	N/A	Future	This action will require technological changes.

In a [recent examination of GHG reductions from vehicle electrification](#), comparisons among battery EVs, plug in hybrids, hybrid and gasoline powered vehicles documented clear and significant GHG reductions for light duty vehicles. This study showed that battery EVs were most effective in reducing GHG emissions.

The adoption of EVs, including buses and heavy-duty trucks has the greatest potential to reduce GHG emissions. The numbers and trends for EVs are discussed in the Transportation Chapter. Reasons to shift from gasoline or diesel-powered vehicles to electric, especially battery EVs include:

1. Battery EVs require less maintenance than gasoline powered vehicles.

2. Battery EVs a) do not emit [toxic tailpipe gases](#), which are associated with many health impacts and threaten compliance with National Ambient Air Quality Standards (see Air chapter) and b) have a lower GHG footprint than gasoline powered vehicles.²³
3. The cost of charging an EV is typically less than the cost of gasoline, especially when a home charging unit is available.

Federal plans to reduce support for environmental programs poses a threat to important county projects. For example, the federal government will terminate the \$7,500 tax credit for EVs. A significant concern to the adoption of EVs is the limited options for charging, especially in multi-family buildings. The county has obtained a grant in partnership with the Metropolitan Washington Council of Governments that will be used to install Level 2 chargers. [Level 2 chargers typically provide 10 to 20 miles of range per hour of charging. Where quick charging is needed, Level 3 charges are preferred, which typically provide 180 to 240 miles of range per hour of charging.](#)

In the absence of the ability to charge vehicles at their residence at a reasonable price, residents of multifamily buildings will likely need to go to much more expensive Level 3 commercial charging stations, which can be almost an order of magnitude more expensive than overnight charging at a home charger. Charging stations in multi-family buildings should ideally be managed by the association or property manager so that exorbitant rates are not charged to residents by a private, for-profit company.

RECOMMENDATION: In order to support the county’s goals that 1) at least 15% of light-duty vehicle registrations be of electric vehicles by 2030, and 2) to reduce toxic air pollution from vehicle emissions (including school buses), the county should support the timely and effective implementation of its EV readiness strategy, including the development of a robust EV charging network so that residents of multifamily buildings and travelers will have convenient and low-cost EV charging options. *Recommendation 2025-14 Climate and Energy and Air Quality.*

²³ Reducing GHG emissions from transportation can be achieved by increasing the percentage of electric vehicles on the roads, significantly increasing gas-powered vehicles average miles per gallon (MPG), increasing use of mass transportation, biking and walking, and cutting the number of vehicles and trips made. An [EPA calculator](#) that incorporates the mix of energy sources used to generate electricity finds that a gas-powered vehicle must get at least 70 miles per gallon to have a lower carbon footprint than an electric vehicle. This EPA estimate is based on a mix of energy sources from 2021.

Conversion from gas to electric powered lawn equipment is another opportunity to reduce GHG emissions and reduce exposure to toxic gases from the combustion of gasoline. Recognizing this opportunity Fairfax County participated in the Clean Air Partners' "Green Your Lawn Event", which provides an opportunity to trade gas powered equipment for electric equipment. This program was a success, but more residents would likely participate with more effective outreach.

COMMENT: This program is a great idea and has been well received by at least some. Conversion to battery powered lawn equipment reduces noise, pollution and GHG emissions.

As outlined in the [Climate Plans 2024 Program Update](#), GHG emissions from county operations constitute only about 5 percent of the county's GHG emissions. The county's efforts to address climate change are available on the [Operational Energy Strategy website](#), which is an excellent source of information. The county's efforts will likely serve as a model for others as the county installs renewable energy, deploys electric vehicles and chargers, and prioritizes energy efficiency in new construction and major renovations.

Fairfax County is also making significant progress in growing the use of onsite renewable energy such as solar. While a number of projects on schools and other county structures have been built, the recent kick off of the solar farm that will be built over the Lorton landfill is a large project that will provide 5% of the county government's electricity needs.

Expanding solar photovoltaic on existing buildings and new construction, supporting community solar, and developing battery storage projects should all continue to be supported. Progress in these areas is growing. While the loss of federal support for renewable energy projects is threatening progress, the payback of renewable energy should continue to grow but the rate of growth will likely be diminished until incentives are reinstated.

COMMENT: The county serves as a model for other localities as it exhibits leadership in demonstrating the feasibility of undertaking the actions that are advocated to address climate change.

Climate Resilience

The [Resilient Fairfax Plan](#) provides strategies to adapt and build long-term resilience to the [impacts](#) of climate change. Implementation of the strategies began once they were adopted by the Board of Supervisors in October 2022. It is easy for county

residents to appreciate the benefits of the county’s efforts to be resilient to the impacts of climate change.

Figure 6-2. Resilient Fairfax Outcomes. Source: [Overall Resilience Metrics | Office of Environmental and Energy Coordination](#)

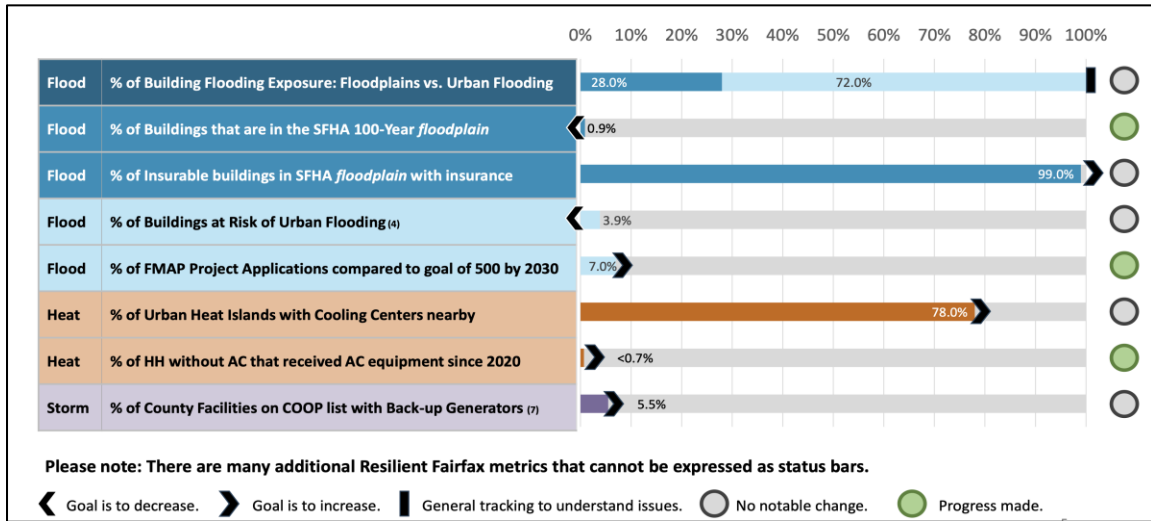


Figure 6-2 shows Resilient Fairfax outcomes that the county tracks. Clearly, there is a lot to be done to improve the county’s climate adaptation and resilience. The Resilient Fairfax Plan has identified 48 strategies and actions that should be taken to improve climate adaptation and resilience.

We are already experiencing the consequences of climate change, such as an increase in intensity of flooding (flooding is intensified as temperatures rise so that the air can hold more water) and higher temperatures that disproportionately threaten the health of vulnerable populations. The resiliency work is important to boost the resilience of our residents, public services, infrastructure, and natural resources to the changes flooding, temperatures, storms, and other climate change impacts. Throughout Fairfax County, neighborhoods are facing increased risk of urban flooding, fluvial/floodplain flooding, and tidal flooding due to climatic changes.

The county’s 48 resilience strategies are organized into 4 pillars:

- Climate Ready Communities (CRC): includes strategies relating to enhancements of public services, such as upgraded cooling and flood services and programs.

- Resilient Infrastructure and Buildings (RIB): includes strategies to boost the physical resilience of our critical facilities and infrastructure to a changing climate
- Adaptive Environments (AE): includes strategies to both protect natural resources that naturally provide resilience benefits and to restore natural resources that are vulnerable to a changing climate.
- Integrated Action Planning (IAP): sets the county up for success by integrating climate adaptation and resilience into various county-wide plans, policies, data, and funding.

COMMENT: The county should continue funding resilience work from ensuring that it maintains continuity of operations in the event of an emergency, ensuring stormwater infrastructure can accommodate water so that areas do not flood, and continue the many actions needed to make the county resilient to climate impacts.

Residential homes without air conditioning

An increase in extreme heat days and average temperatures increases the risk for heat-related illnesses such as respiratory difficulties, heat cramps, heat exhaustion, and heat stroke. Residents without sufficient access to air conditioning are at extreme risk of [heat related illnesses](#) during periods of prolonged extreme heat, as was experienced in summer 2024. While mobile home parks often have lots of heat-absorbing concrete with little shade other housing, especially older housing with inadequate insulation that lacks air conditioning can pose a danger to inhabitants. Many, especially older model homes are often poorly insulated, and many residents frequently cannot afford their utility bills or air conditioners. Often, those residents who are low income and do not qualify for utility assistance, live in housing with poor or inadequate insulation and are surrounded by heat islands are at greatest risk of heat related illnesses.

During the 2024 summer of persistent extreme heat, Fairfax County’s Office of Environmental and Energy Coordination (OEEC) partnered with the Faith Alliance for Climate Solutions, Rebuilding Together, Daniels Run Peace Church and staff from Hybla Valley Community Center to bring relief to residents of Harmony Place Mobile Home Park who were without sufficient air conditioning (AC), or no AC at all. Within just a few days of being notified of the urgent situation at Harmony Place, Fairfax County and non-profit partners across the county came together to create an innovative pilot project to provide window and portable AC units to these families. This effort to “fill the gap” and enhance access to extreme heat-related services is

part of the county's Resilient Fairfax Plan. As a result of this need, the county has transformed AC Rescue from a pilot project into a standing county program to assist residents in need. EQAC appreciates the efforts that OEEC undertook to partner with other organizations to address this and other resilience challenges.

COMMENT: EQAC appreciates the systematic assessment of urban heat islands that county staff has undertaken and supports further efforts to identify populations at risk and provide relief to these populations.

Heat Islands and Tree Cover

As discussed in the Land Use Chapter, heat islands are created in urban areas when concrete and asphalt absorb the sun's energy and heats the ground and surrounding surfaces. While the county has a tree canopy goal of 60% overall coverage with a minimum of 40% coverage in every census tract, road expansion (along with clearcutting of the right of way) and development are resulting in tree loss. While efforts should be made to replace trees from the areas where they are removed, replacement is not always possible and when trees are replaced, they are often young trees that will not provide the canopy that the previous trees provided.

As a part of the county's efforts to address heat islands, OEEC has worked with DPWES to plant trees especially in heat island areas. This work is commendable. Recommending that the county explore adoption of a policy to support tree planting should help to solidify current practices and provide more transparency to the work that the county supports.

COMMENT: EQAC submitted a memorandum to the [Board of Supervisors](#) recommending the County adopt a countywide Heat Island Mitigation Policy that relied upon tree planting, which would encourage tree planting in One Fairfax areas.

Communications and Outreach for Resiliency

EQAC commends the Resilient Fairfax Program for their outreach, communications, planning and taking community input into action. Funding to support Resilient Fairfax is funding that will help to reduce emergency situations. Planning for heat emergencies, flooding, and other climate related events is important and should be appreciated by county residents as their efforts clearly serve them. The Resilient Fairfax Program has an excellent website, and they also provide regular briefings to various groups.

COMMENT: While there is a significant funding need, the Resilient Fairfax program works with the community and has a sensitivity to One Fairfax priorities.

Budgets and Priorities

The Board of Supervisors and community members have raised concerns that CECAP Priorities have not clearly been established to show that the program will be adequate to meet CECAP goals. For CECAP, the county should prioritize CECAP actions by considering GHG reductions and feasibility as described earlier. The county has established goals and a plan is needed to show how investments in climate actions will lead to meeting the county’s goals. Resilient Fairfax has made good progress in prioritizing work and taking actions but there are still significant needs that require funding, such as addressing flood risks.

RECOMMENDATION: Prioritize climate funding and provide adequate funding for both CECAP and Resilient Fairfax to meet goals in the annual operations and CIP Budgets. *Recommendation 2025-15 Climate & Energy*

Climate change is impacting county residents, businesses and the environment now. Resilience is essential to reduce impacts of flooding, reduce heat related illnesses/death and reducing other impacts. Given the significant energy demands of data centers, renewable energy is needed to fill the energy shortfall created by data centers and other energy needs. CECAP and Resilient Fairfax are important programs that deserve funding in in the Operations and Capital Improvement Budgets, so that they will not be dependent upon carryover funding.

Planning and Implementation

In response to this challenge and as reflected in the above text, the county has established a climate website that has made significant progress in meeting this need. County residents appreciate the importance of taking action to address climate change and it is important that county residents can easily see what actions the county is taking and the progress that is being made. The complexity of the different programs requires a lot of work to understand both the requirements and progress.

7. AIR QUALITY

Board of Supervisors' Environmental Vision:

“The county will continue to support attainment of air quality through regional planning and action.”

Introduction

Fairfax County is part of a federal-state-regional-local partnership, which has worked for the last several decades to improve air quality. While air quality is a regional issue that is beyond the control of any one state or local government, governments at all levels play important roles in identifying measures that are needed to improve air quality and in implementing related strategies.

In the metropolitan Washington, D.C. region, air quality planning efforts have been focused on regional strategies to bring the area into attainment with federal air quality standards (i.e., the National Ambient Air Quality Standards, or NAAQS). The Metropolitan Washington Council of Governments (MWCOG), through the Metropolitan Washington Air Quality Committee (MWAQC), has coordinated, and continues to coordinate, these efforts for the Washington DC region, which include northern Virginia, DC and nearby Maryland counties.

The county's major responsibilities in the partnership involve participation and coordination with regional and state organizations on plans intended to reduce air pollution and improve air quality as well as the implementation of local programs that help to minimize or eliminate air pollution.

Over the past three decades, the region has made significant progress in improving air quality. Given the April 4, 2025 [decision by EPA](#) to issue a determination of attainment by the attainment date for the Washington DC area for the 2015 ozone standard, [all six pollutants \(Ground-level Ozone, Particulate Matter, Nitrogen Dioxide, Sulfur Dioxide, Carbon Monoxide, and Lead\) regulated by the federal Clean Air Act](#) have shown a downward trend in the region, and are all in compliance with federal air quality standards. Overall, the number of unhealthy air days has significantly decreased over the past 25 years though the number of unhealthy air days for both ozone and particulate matter (PM2.5) increased in [2023](#) mainly due to wildfire smoke originating in Canada.

The region has made tremendous progress in its air quality thanks to actions at the federal, state, and local government levels, including new regulations to reduce

emissions from power plants, passenger vehicles, and heavy-duty diesel engines as well as programs to improve energy efficiency and renewable energy use.

Fairfax County does not have an air quality monitoring program; it works with MWCOG and the Virginia Department of Environmental Quality (DEQ) to assess air quality in the region. DEQ is responsible for air quality monitoring in Fairfax County in addition to air quality facility inspections. It provides current air quality and forecast data for Northern Virginia and other Virginia regions at [VA DEQ Current Air Quality and Forecast](#).

CURRENT STATUS AND CONCERNS

Air quality, as measured by unhealthy air days, has fluctuated significantly in the past several years. The COVID-19 pandemic had a positive impact on air quality in 2020, with a number of actions taken to limit virus transmission contributing to lower emissions. This resulted in fewer unhealthy air days, with just two such days being recorded in 2020. However, that decrease was temporary. As the region reopened, data from MWCOG registered eight unhealthy ozone days in 2021. While data from 2022 showed a decrease in unhealthy air days compared to 2021, that reduction was again short-lived. The region recorded 15 unhealthy ozone days in 2023 (though mainly due to wildfire smoke coming from Canada) and 7 unhealthy ozone days in 2024.

Last amended in 1990, [the Clean Air Act requires EPA to set NAAQS for six principal “criteria” pollutants](#) (particulate matter, carbon monoxide, ozone, nitrogen dioxide, sulfur dioxide, and lead). It is worth understanding the concern for and impact of each pollutant within the county.

Criteria Pollutants

Particulate Matter

On February 7, 2024, the U.S. Environmental Protection Agency (EPA) strengthened the federal air quality standard for fine particulate matter by setting the level of the primary (health-based) annual PM_{2.5} standard at 9 micrograms per cubic meter. The previous standard was 12 micrograms per cubic meter. The Washington, D.C. metropolitan region already meets this new standard, having recorded PM_{2.5} levels below 9 micrograms per cubic meter since 2019.

Particulate matter poses a multifaceted risk to human health through its interaction with vital organs and biological processes in the body. For example, alveoli within the lungs are very sensitive to fine particulate matter. Larger, coarse particulate matter can end up in the digestive tract. Both fine and coarse particles can be toxic.

Fine particles are also the main cause of reduced visibility (haze) in parts of the United States. This haze from the wildfire smoke was readily apparent in the Washington, D.C. metropolitan region on the unhealthy air days in 2023.

The Washington Metropolitan region has made significant progress in reducing particulate pollution so that the region is in compliance with both PM_{2.5} (particulate matter with an aerodynamic diameter of 2.5 µm) and PM₁₀ (particulate matter with an aerodynamic diameter of 10 µm). Air quality trends data for PM_{2.5} (which is known as the fine particle standard) had elevated levels in 2023, which were largely attributed to Canadian wildfires. This wildfire smoke brought the worst air quality seen in the region in more than a decade. Wildfire smoke will remain an ever-increasing wild card in Fairfax County. Air quality agencies and research groups agree that understanding the composition of wildfire smoke remains a major scientific challenge due to its complex chemistry. This in turn makes it challenging to determine the magnitude and breadth of the immediate and long-term health effects on county residents. Wildfire smoke contains primary pollutants—volatile organic compounds, particulate matter, carbon monoxide, nitrogen oxides, and sulfur oxides—that are released directly by the fire. Once in the atmosphere, these chemicals react and transform, producing secondary pollutants like ground-level ozone and secondary organic aerosols (or haze). These secondary pollutants form through complex chemical processes that are still not fully understood. Additionally, they can travel hundreds, even thousands, of miles impacting people far from the fire's source.

Further exacerbating the negative impacts of wildfire smoke is unavoidable urban growth. As populations trend towards moving into and developing wildland areas, wildfires in wildland-urban areas are fueled by dry brush and towering trees. Burning homes, vehicles, and everyday household materials – including plastics, resins, and treated wood – release an additional unpredictable hazardous mix of pollutants into the air ([NOAA Chemical Sciences Laboratory](#)). Moreover, the smoke can also impact the weather itself. Aerosols made up of tiny particles can affect cloud formation and precipitation ([NSF NCAR](#)).

Carbon Monoxide

Carbon monoxide (CO) is another pollutant for which the EPA has established a National Ambient Air Quality Standard. Carbon monoxide is a product of incomplete combustion. Thus, carbon monoxide is emitted from vehicle and bus emissions, combustion of fossil fuels for power generation, wildfires and other sources. Because CO tends to disperse quickly from the point of combustion, the

biggest risk falls to firefighters close to the combustion source, such as with a fire, people living near roads, and at-risk populations. People with coronary artery disease are particularly susceptible. And lower levels of CO are also more common. When CO enters the bloodstream via the lungs, it readily binds with hemoglobin where oxygen should normally bind and it reduces oxygen delivery to organs, tissues, and the rest of the body. At high levels, CO exposure can cause headaches, weakness, dizziness, confusion, nausea, disorientation, visual impairment, coma, and even death in otherwise healthy individuals ([AirNow.gov](https://www.airnow.gov)).

Ozone

Ground-level ozone, colloquially called “smog”, can cause breathing problems for sensitive persons, especially those with asthma and other respiratory conditions. It is formed by chemical reactions between oxides of nitrogen (NO_x) - note EPA has set a NAAQS for nitrogen dioxide - and volatile organic compounds (VOCs) as they combine in sunlight and heat. Ground-level ozone is considered a summertime pollutant.

Nitrogen Dioxide

Nitrogen dioxide (NO₂) is a gaseous pollutant formed during the high-temperature combustion of fuels in vehicle engines, industrial facilities (primarily electric generating power plants), and many other sources (e.g., aircraft, marine vessels, lawn equipment, etc.). NO₂ is also a factor in the production of ground-level ozone as previously noted. It can irritate the lungs and lead to respiratory problems.

Sulfur Dioxide

Diesel vehicle exhaust can also contain sulfur dioxide (SO₂). SO₂ is a gas that forms when sulfur-bearing fuels, mainly oil and coal, are burned. High concentrations of SO₂ can result in difficulty breathing and respiratory illness.

Ozone, NO₂, and SO₂ can also have damaging effects on the foliage of trees and agricultural crops. Acid rain is primarily formed from the emissions of SO₂ and nitrogen oxides (NO_x) and it has harsh effects on ecosystems ([U.S. EPA](https://www.epa.gov)). For example, the eggs of some species of fish can't hatch in acidic waters. Acid rain can cause aluminum from soils to leach which is harmful to plant life. Like many things in nature, we often see many related synergies and feedback loops. It is important to take advantage of positive feedback loops (e.g., improving air quality/reducing heat islanding reduces acid rain which, in turn, preserves plant life which leads to further reduced heat islanding effects and so forth), while avoiding and mitigating negative feedback loops with urgency.

Lead

Lead is an especially concerning contaminant for young children under the age of 6. Swallowing and/or inhalation of lead or lead dust can cause well-documented health effects such as brain and nervous system damage along with slowed growth and development. Hearing, speech, learning and behavioral problems can persist ([CDC](#)).

Lead is a naturally occurring metal that can be found in gasoline; paints; drinking water via plumbing pipes; ceramics; batteries; certain foods and cosmetics; and soils near airports, busy roads, and buildings. County residents may not know their lead exposure unless their homes are tested ([CDC](#), [CDPH](#)).

Blood testing is a primary method of assessing lead risk, lead exposure within a population or individual. The county follows Virginia Department of Health guidelines and recommendations to investigate cases of childhood lead and investigate new trends and potential exposures. While county staff suspect children with elevated blood lead levels received their lead exposure in a foreign country before moving to Fairfax County, there is not sufficient information nor comprehensive data within the county to eliminate lead paint or other sources of lead as the source(s) responsible for these elevated lead levels. Given this uncertainty, EQAC supports the continued monitoring that the Fairfax County Health Department undertakes to follow up on high lead levels in children.

Comment: EQAC asks that the Board of Supervisors support the county in pursuing methodologies to track the prevalence of lead in the population – for example, but not limited to, blood lead screening in children as part of routine healthcare, testing of consumer products for lead, among others.

Commentary

The combustion of fossil fuels related, but not limited to, onsite centralized and distributed power generation, industrial processes, all modes of transportation, lawn equipment, agricultural activities, among others, contributes to both criteria pollutants and air toxics in the air.

Moreover, there is extensive use of motor vehicles in Fairfax County. Vehicle emissions are the largest single source of toxic and smog forming air pollution in the county and Northern Virginia ([Virginia Dept. of Environmental Quality](#)). Vehicle emissions are a major contributor to ground-level ozone formation and greenhouse gas emissions in Fairfax County and those impacts, combined with climate change, present a threat to the county's future air quality because rising temperatures

speed up the formation of ground-level ozone. As noted in the Climate and Energy Chapter, the [Community-wide Energy and Climate Action Plan \(CECAP\)](#) contains several climate action goals involving vehicle use in the county. These include increasing the use of electric vehicles in the county; reducing vehicle miles traveled; and increasing fuel economy and access to low-carbon fuels.

The environmental benefits and advantages of electric vehicles (e.g., battery electric vehicles (BEV), plug-in hybrid electric vehicles (PHEV), fuel cell electric vehicles (FCEV) over traditional gasoline vehicles are most notably: 1) having zero tailpipe greenhouse gas (GHG) and criteria pollutant emissions and 2) being more energy efficient from a fuel lifecycle standpoint. Something that has recently gained more widespread recognition revolves around the topic of brake dust emissions. Regenerative braking found in hybrid gasoline-electric vehicles and BEVs significantly reduces brake dust emissions. This is because electric motor(s) help slow the vehicle down by capturing braking energy leading to less reliance on the brake pads ([Virginia Tech](#)). Brake dust emissions are also impacted by other numerous factors such as traffic conditions, vehicle weight, individual driving styles, among others. More future research is emerging and needed to better quantify these factors and to understand the coarse and fine composition of brake dust.

In addition, as an alternative to the use of motor vehicles, the Fairfax County Board of Supervisors has directed the Fairfax County Department of Transportation to lead the effort to improve bicycle and pedestrian safety and mobility, including constructing bicycle and pedestrian improvements in high-priority areas of Fairfax County.

RECOMMENDATION: In order to support the county’s goals that 1) at least 15% of light-duty vehicle registrations be of electric vehicles by 2030, and 2) to reduce toxic air pollution from vehicle emissions (including school buses), the county should support the timely and effective implementation of its EV readiness strategy, including the development of a robust EV charging network so that residents of multifamily buildings and travelers will have convenient and low-cost EV charging options. *Recommendation 2025-14 Climate and Energy and Air Quality.*

EQAC has received public testimony calling for the banning of gasoline-powered lawn equipment. In 2026, EQAC plans to gather more information on this issue and make a recommendation to the Board of Supervisors. EQAC recognizes the merits of Fairfax County hosting “[Green Your Lawn Events](#)” to promote air quality awareness and sustainability.

RECOMMENDATION: The County should continue, and possibly expand, the Green Your Lawn Events and increase outreach and incentives to county residents to:

- Make the transition to electric-powered lawn equipment
- Only use gasoline-powered landscaping equipment on good air quality days
- Use organic fertilizers and pesticides
- Leave grass clippings to make their own mulch

Recommendation 2025-16 Air Quality

Per- and polyfluoroalkyl substances (PFAS), otherwise known as “forever chemicals” for their persistence, are a group of highly toxic chemicals. While some federal standards have been promulgated for PFAS, those standards might be adjusted per state adoption of policies associated with federal standards. However, in the interim, there is a need to understand the sources of PFAS in the county and take appropriate steps to reduce human exposure to PFAS. The Department of Public Works and Environmental Services has been a leader in the state in identifying sources and evaluating opportunities to reduce PFAS in the county.

Comment: EQAC supports the county’s efforts to stay apprised of the pros and cons of emerging PFAS destruction technologies and methodologies – e.g., at wastewater treatment plants.

Indoor Air Quality

When addressing the topic of air quality, it is critical for the community not to forget the importance of indoor air quality on health. While the county and regional governments are inherently best positioned for improving outdoor air quality, county residents can proactively improve the indoor air quality of the buildings they reside in. In fact, according to the EPA, Americans are indoors 90% of the time – in built environments such as homes, schools, workplaces, places of worship, and gyms. And ironically as average global temperatures increase annually, time spent indoors will continue to trend upwards. This is compounded by studies suggesting that indoor concentrations of air pollutants are increasing – driven by inadequate

ventilation, the myriad and types of chemicals in home products, hotter temperatures, and increasing humidity. The health effects of indoor air pollution can be just as destructive as that of outdoor air pollution – including respiratory diseases, heart disease, cognitive deficits, and forms of cancer. And similar to other environmental issues, sensitive populations such as children and older adults with preexisting conditions, Native Americans, and households of low socioeconomic status often have exposure to higher levels of indoor pollutants ([National Institute of Environmental Health Sciences](#)).

Indoor air quality is impacted by pollutants that penetrate from the outdoors as well as sources that are unique to indoor environments. While this synergy can be good news in situations where local outdoor air quality improvement partially contributes to improved indoor air quality, days of unhealthy outdoor air stress the importance of reducing indoor air pollution sources. These sources include, but are not limited to:

- Human activities near and within buildings such as smoking, burning solid fuels, cooking, and cleaning;
- Vapors from building and construction materials, equipment, and furniture;
- and biological contaminants such as mold, viruses, and/or allergens.

Common contaminants to be on the lookout for include:

- Allergens
- Asbestos
- Carbon Monoxide
- Formaldehyde
- Lead
- Mold
- Pesticides
- Radon
- Smoke

Commentary

According to the EPA, county residents can employ [three basic strategies to improve indoor air quality](#): 1) source control, 2) improved ventilation, and 3) air cleaners/filtration.

- **Source Control:** Reducing individual sources of pollution or reducing their emissions is usually the most effective strategy. Some sources (e.g., those containing asbestos) can be sealed or contained. Other sources (e.g., gas

stoves) can be adjusted or replaced to decrease the amount of emissions. Source control also tends to be more cost-efficient than the other strategies since increasing ventilation can result in increased energy costs.

- **Improved Ventilation:** On days where outdoor air quality is good and weather permits, increasing the amount of outdoor air entering the building is another strategy to reduce the concentration of indoor air pollutants. With the exception of newer, more advanced heating, ventilation, and air conditioning (HVAC) systems, most HVAC systems do not generally bring fresh air into the house. Opening windows and doors, operating window or ceiling fans, or running an HVAC system with vent controls open can increase the intake of outdoor ventilation. Local bathroom and kitchen fans exhaust contaminants outdoors while simultaneously drawing air in.
- **Air cleaners/filtration:** Air cleaners and filters on the market range vastly in cost, sophistication, and required operation and maintenance. Some are designed to cover individual rooms while others are designed for an entire house. Some models are more effective than others at removing certain particles. Most air cleaners/filters are not designed to remove gaseous pollutants. It is important to keep in mind that the effectiveness of an air cleaner/filter depends both on: 1) how well it removes pollutants from indoor air (i.e., efficiency) and 2) how much air it draws through the cleaning/filtering element (i.e., circulation rate).

In recent years, there has been some publicity suggesting that houseplants can reduce levels of some chemicals. There is currently no evidence that a reasonable number of houseplants can remove significant quantities of pollutants in indoor spaces. Moreover, overwatering of indoor plants could result in overly damp soils that lead to the growth of microorganisms affecting allergic individuals.

The county has already started making strides in prioritizing indoor air quality improvements. In the most recent [Draft Text for Healthy Communities Element of Plan Forward](#), Objective 4 in promoting climate health encourages “development that supports climate adaptation, including green infrastructure and healthy buildings to reduce the vulnerability of current and future residents, employees, and the overall community to the harmful effects of a changing climate.” Policy c. under this objective recommends that the county “apply the most current technology to optimize indoor air quality and promote physical and mental health, such as daylighting stairwells or reducing interior noise, in both new and retrofitted

buildings [and to] consider commercially available standards for healthy buildings to better support human and climate health.”

Comment: Fairfax County and OEEC should pursue steps to research and deploy indoor air quality standards and further include indoor air quality concerns and mitigation methods on its websites, resources, and outreach materials (e.g., Sustain Fairfax).

Appendix A Spotlight on Fairfax County Public Schools



Introduction

This Spotlight describes recent achievements by Fairfax County Public Schools (FCPS) and upcoming plans for Get2Green; energy; transportation; and potable water. As available, it identifies specific schools and facilities where achievements have taken place. The Spotlight includes comments and recommendations about opportunities to improve environmental performance for FCPS.

[FCPS](#) is the ninth largest school division in the United States, serving a diverse community of nearly 183,000 students with 199 schools and centers. FCPS has multiple departments and offices that have activities relevant to environmental topics. These include Facilities and Transportation Services; Food and Nutrition Services; Instructional Services; Office of Design and Construction; Office of Facilities Management; and Office of Safety and Security.

Current Concerns

Get2Green

Get2Green is FCPS' comprehensive program building a culture of environmental stewardship across the division. A collaborative initiative between Instructional Services and Facilities Management, Get2Green empowers students to become environmentally literate global citizens by integrating environmental stewardship into curriculum, operations, and school culture. The program's goals focus on increasing school participation in sustainability efforts, ensuring equitable access to environmental learning, and embedding hands-on environmental action in student experiences. With the expansion of the Get2Green program in FY 23, FY 24, and FY 25, the Get2Green staff now consists of a Senior Manager in Facilities Management and a Senior Manager in Instructional Services who co-lead the program as well as an Educational Specialist, Support Specialist, Business Operations Assistant, and five Resource Teachers in Instructional Services. Additionally, salary supplements are provided to a Get2Green Leader in every school and center to collaborate with students on creating a culture of environmental stewardship at their schools. Each school also receives dedicated funding to support their environmental stewardship goals. [Get2Green's web site](#) provides data dashboards with information about individual school energy use and recycling data.

Key Get2Green strategies toward achieving these goals include professional development opportunities, partnerships with community organizations, and an annual survey to track progress. A lending library of sustainability kits supports hands-on learning and Discovery Carts bring exciting hands-on learning to classrooms. Additionally, students participated in real-world environmental projects such as Revitalize, Restore, Replant planting events and watershed restoration. In the 2024-25 school year, the Get2Green team published Together We Grow, a comprehensive garden guide that helps schools engage students in designing, planting, and caring for garden spaces.

Get2Green partners with the National Wildlife Federation's EcoSchools US program to provide a framework and recognition platform for schools engaging students in environmental stewardship. Schools receive awards for completing various action cards, with the highest award being a Green Flag. For the 2024-25 school year, the number of FCPS Green Flag awards doubled from 11% to 22% of schools. Additionally, 3% of schools earned Gold, Silver, or Bronze awards. Participation in EcoSchools is only one measure of program success. Get2Green staff conducted 1,000 customized school support visits this year, and schools created portfolios to document their environmental action. With a history dating back to 2009, Get2Green has evolved from grassroots efforts into a strategic division-wide program grounded in equity and aligned with Portrait of a Graduate goals.

COMMENT: EQAC supports the continued implementation of the Get2Green program.

Implementation of Recommendations from the Joint Environmental Task Force

In July 2021, the FCPS Board accepted [recommendations from the Joint Environmental Task Force \(JET\)](#) surrounding energy, transportation, waste reduction, and workforce development for the school division. Commitments by the FCPS Board to implement the JET included:

- Being energy carbon neutral by 2040.
- Achieve 50% emissions reductions by 2030, as compared to a 2019 baseline.
- Produce 25% of the county energy use from in-county renewable energy generation by 2030, and 50% by 2040, using 2019 energy use as the baseline.
- Decrease total energy usage from all county facilities by 25% by 2030, and 50% by 2040, as compared to the 2019 baseline.
- All new county buildings and major renovation projects beginning planning and design in 2021 and after must achieve Net Zero Energy (NZE)

performance as defined below, unless county staff advises the Board prior to the 30% design phase why a project cannot meet the NZE standard. The JET defines an NZE building as one that is highly energy-efficient and produces onsite, or procures offsite as necessary, carbon-free renewable energy in an amount sufficient to offset the annual energy use associated with operations.

- Transition to electric or zero-carbon alternatives for school buses and eligible fleet vehicles by 2035; and to develop a plan to fuel the electric vehicles using non-carbon emitting fuels and carbon offsets with a complete transition to 100% clean fuel by 2030.
- FCPS and the County coordinate electrification efforts and share charging and maintenance infrastructure whenever possible.
- Achieve Zero Waste in county and school operations by 2030.
- Equip FCPS guidance counselors and career center staff with a standardized tool kit for talking with students about the range of green careers and the background necessary to enter those careers. Ensure the presence of green career professionals in career days and student interview days.
- Develop a comprehensive plan to offer one or more green career/economy-related programs for high school students to encourage participation in this emerging job market.

RECOMMENDATION: Fairfax County should coordinate with efforts by FCPS to increase the use of electric buses and providing charging stations.

Recommendation 2025-17 Schools

Limited information was made available to EQAC in response to our recommendation prior to evaluate progress by FCPS with implementation of these recommendations. Input by a school board member (Personal Communication, June 19, 2025) indicated challenges with implementation of several JET recommendations. FCPS is behind schedule for transitioning their fleet of approximately 1,600 school buses to electric. The FCPS Board decided to not move forward with a federal grant that could have supported purchase of additional school buses based on concerns about the reliability of the grant. They also noted lack of a U.S. manufacturer. FCPS has not yet provided support for electric vehicles at either schools or the Gatehouse central office (e.g., no charging stations). The board member suggested that further coordination with Dominion Energy may be helpful with increasing the use of electric buses for FCPS.

Why: Increasing the use of electric buses by FCPS will help to reduce tailpipe emissions from diesel buses that affect the health of county residents and reduce greenhouse gas emissions. Coordination between Fairfax County and FCPS to increase the use of electric buses and provide charging stations will lead to a more cost-effective implementation approach.

FCPS is not following the recommendation for school renovations to have Net Zero Energy due to potential funding limitations. FCPS is increasing the use of solar panels on school roofs (see later discussion in this spotlight about solar implementation). Alternative approaches to offset energy use could include consideration of expanded use of solar in parking lots and open fields and purchase of offshore wind power. Concerns also were expressed about the approaches being used in FCPS for waste composting. For example, when not done correctly, composting can attract unwanted animals like rats and raccoons and have unwanted odors. The state has not provided funding or training for implementing a composting program.

While FCPS is not providing career and technical education (CTE, i.e., vocational) training for solar power, electric vehicles, air conditioning, heat pumps, it is making available CTE for relevant skills associated with these areas such as in welding, finance, and modeling.

COMMENT: Given the concerns about challenges with implementation of JET recommendations, the FCPS Board may wish to reassess the usefulness of maintaining these recommendations. Further, the FCPS Board may wish to consider revised recommendations that meet the intent of the JET including providing additional environmental and CTE education for FCPS students.

Energy Use

In FY 23 (the most recent year with available data), FCPS spent about \$41,000,000 on its electric, oil, gas, and water utilities as shown on the [FCPS Get2Green Dashboard](#). The Office of Facilities Management is tasked with keeping this bill as low as possible through development and implementation of conservation programs. FCPS employs 10 full-time and four hourly Energy Education Specialists to perform energy management, conservation, and educational services. To contribute to enhancing the pace of energy-related improvements at existing FCPS schools and other facilities, the Office of Facilities Management is in the process of planning Energy Savings Performance Contracts. Such contracts will enable the completion of urgently needed energy improvement projects that have been unfunded due to budget constraints including replacing inefficient HVAC

equipment still in use beyond its useful life (e.g., chillers and boilers), old inefficient structural components (e.g., single pane, metal framed windows with no thermal breaks), and inefficient and poor-quality fluorescent and High Intensity Discharge lighting. FCPS is currently not using Energy Savings Performance Contracting. Should this change, FCPS will use the [Virginia Department of Energy Contract](#). FCPS currently has in-place a public-private partnership (P3) at South County High School to address HVAC equipment and is looking to develop a plan for approving additional P3s.

COMMENT: EQAC supports FCPS efforts to implement energy improvement projects such as through use of Energy Savings Performance Contracting.

Solar Installations

FCPS currently has ten schools with solar installations. Roof-mounted photovoltaic solar arrays paid for through grants and fundraising are located at Rachel Carson Middle School, Frost Middle School, Canterbury Woods Elementary, Bailey's Elementary School, and Thomas Jefferson High School. Roof-mounted solar installations for solar thermal heating of potable (drinkable) water can be found at Glasgow Middle School, West Springfield High School, and Thomas Jefferson High School. Franklin Sherman Elementary has a ground-mounted photovoltaic array. Experimental instructional projects integrating technology include a solar powered wind turbine at Lanier Middle School and a chicken coop with solar panel heat at Twain Middle School. Although these projects do not supply large amounts of energy to the schools, they serve as valuable educational tools. This year, Riverside Elementary School and Jackson Middle School were selected for the Dominion Energy Solar for Students program. Centreville Elementary School won the award in 2019.

In April 2025, the [FCPS Board approved the implementation of a rooftop solar power purchase program at 15 elementary school sites](#) which have an estimated cost savings over the life of the contract of approximately \$3 million. The 15 elementary schools comprise the following: Braddock, Clearview, Columbia, Crossfields, Fairhill, Fox Mill, Glen Forest, Hybla Valley, Louise Archer, Mosaic, Oak Hill, Shrevewood, Wakefield Forest, Washington Mill, and White Oaks.

COMMENT: EQAC supports FCPS efforts to implement solar projects at school buildings across the county.

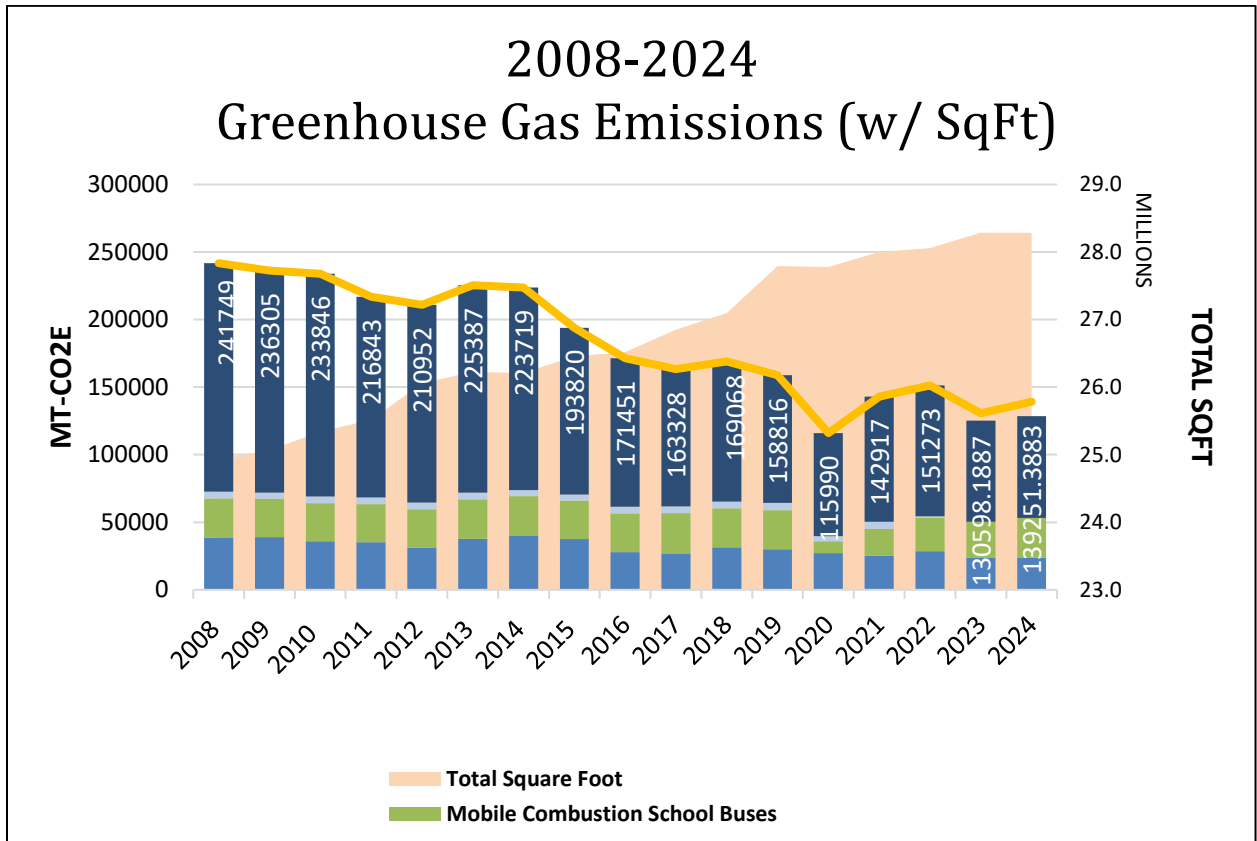
Greenhouse Gas Inventory

FCPS maintains approximately 28 million square feet of occupied space for education, support, and administration functions. In accordance with School Board Policy 8542 - Environmental Stewardship, FCPS publishes an [annual report of Greenhouse Gas emissions](#). The most recent report, for calendar year 2024, shows a total of 139,251 metric tons CO2 equivalent, with the largest contributors being direct combustion (i.e., for energy), mobile combustion for school bus vehicles, and mobile combustion for non-school bus vehicles. As shown on Figure A-1, Greenhouse Gas (GHG) emissions per unit of occupied space has generally decreased for FCPS over the past 10-year period, with the level being relatively steady for the past 2 years (2023-2024). FCPS staff noted that FCPS is working towards having an online GHG dashboard available for next year. The online dashboard will be automated and provide real-time information (personal communication, July 13, 2025).

COMMENT: EQAC supports FCPS efforts to make greenhouse gas information publicly available on an annual basis including information specific to each individual school within FCPS.

Figure A-1. Greenhouse Gas Emissions and Occupied Space in FCPS Facilities.

Source: E-mail from John Lord, FCPS, May 27, 2025.



Potable Water

FCPS’ Office of Safety and Security (OSS) completed the first round of comprehensive testing for lead in drinking water (all drinkable sources in each school tested at least once) in early summer 2023. Results from this testing were summarized in EQAC’s 2024 ARE. Updated information was not provided by FCPS about testing of potable sources in FCPS schools for the 2025 ARE.

Appendix B

2025 EQAC Memoranda

EQAC issues recommendations to the Fairfax County Board of Supervisors via two mechanisms: the Annual Report on the Environment and resolutions or positions issued during EQAC meetings. In 2025 EQAC sent eight memorandums on a variety of topics and are provided below.

<u>Date</u>	<u>Memo Subject</u>
January 15, 2025	Policy Required to Address Illegal Dump Sites <i>Sent to Fairfax County Board of Supervisors</i>
April 16, 2025	FY2026 Budget Recommendations <i>Sent to Fairfax County Board of Supervisors</i>
May 23, 2025	Comment on the Plan Forward Environmental Element <i>Sent to Kelly M. Atkinson, Director, Planning Division, department of Planning and Development</i>
June 13, 2025	Tree Plantings and Heat Islands (BOS) <i>Sent to Fairfax County Board of Supervisors</i>
July 10, 2025	Recommendations for the Staff Proposed Ordinance on Large-Scale Battery Energy Storage Systems (BESS) <i>Sent to Fairfax County Board of Supervisors</i>
September 26, 2025	Park Authority Budget for 2027 <i>Sent to Fairfax County Board of Supervisors</i>
November 12, 2025	Plan Forward Review (BOS) <i>Sent to Fairfax County Board of Supervisors</i>
November 13, 2025	Comment on Resilient Trees Draft Ordinance (BOS) <i>Sent to Fairfax County Board of Supervisors</i>

Resolutions and positions for the current year and the immediate past year are available on the [Environmental Quality Advisory Council webpage](#). Resolutions and positions from years prior are available below under "Archived Materials" or upon request via email (EQAC@fairfaxcounty.gov).