

ARE Transportation Chapter – DRAFT – August 11, 2024

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.

There is a lack of reliable data available to fully understand the current use of different modes for transportation in Fairfax County. The main data source used to inform the understanding is the American Community Survey (ACS), which collects data for the means used by workers for transportation to work. The most recent time complete data was collected was in 2022 (i.e., 2 years ago, soon after the height of the COVID-19 pandemic). In 2022, approximately 60% of workers in Fairfax County drove alone to work, followed by those who worked at home (22%) and those who carpooled to work (8%) (Figure T-1). This figure shows that the number of Fairfax residents who drove alone to work remained relatively constant over the 9-year period from 2013 to 2022, while those who worked at home substantially increased during the COVID period. The ACS also found that employees in Fairfax County have a longer commute time (30.4 minutes) than the normal U.S. worker (26.7 minutes). Additionally, about 2% of the workforce in Fairfax County have "super commutes" in excess of 90 minutes. 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 year with the fraction of travel (work and non-work) made by single-occupancy vehicles significantly higher than the 60% value reported for 2022.

Fairfax County has significant transit and non-motorized infrastructure in place to build from. For FY 25, Fairfax County contributions to WMATA (Metrorail and Metrobus), Virginia Railway Express (VRE), and Fairfax Connector total approximately \$271 million, and range from about 3% (VRE) to 25% (Fairfax Connector) of operating budgets; Fairfax County contributions to WMATA are 12.7% for FY 25 (Table T-1).

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. CECAP focuses on actions that can be taken by the community (residents, business, and others) toward achieving a set of pre-defined emissions reductions goals. A review of [Fairfax County's Climate Action Dashboard](#)¹ shows that, despite reductions, transportation is the second-largest source of greenhouse gas emissions in Fairfax County (after buildings), contributing 44% of the emissions.

A key goal in CECAP for transportation is for increased use of electric vehicles (EVs) by 2030. Specifically, the goal is as follows: “Increase plug-in hybrid electric vehicles (PHEVs) and battery electric vehicles (BEVs) to at least 15% of all light-duty vehicle registrations by 2030”.

The Fairfax County dashboard shows that, as of 2020, a total of 1.1% of light-duty vehicles registered in Fairfax County are PHEVs or BEVs (Figure T-2). That number almost doubled to approximately 2% as of 2022, yet much lower than the 15% goal. The dashboard also shows hybrid electric as about 4% in 2016 and 5% in 2020. 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 EV registrations.

EQAC is supportive of the county's efforts to develop an “EV Readiness Strategy” which is anticipated to be completed by summer 2025. The EV Readiness Strategy will include projections for EV adoption and siting recommendations for EV infrastructure throughout Fairfax County, including locational context (e.g. workplace, public, and home), and will be developed with stakeholder input. EQAC also is supportive of the county's efforts to pursue federal and other funding to address the CECAP goals for EVs. This includes the county's efforts to partner with the Metropolitan Washington Council of Governments (MWCOG) in pursuit of the U.S. Department of Transportation's Federal Highway Administration Charging and Fueling Infrastructure (CFI) Discretionary Grant Program. Fairfax County submitted 25 sites in 2023 and is partnering again with MWCOG on a resubmission of the CFI Round 1 application and an application for CFI Discretionary Grant Program Round 2.

In 2020, the [Joint Environmental Task Force \(JET\)](#) published its report on areas for collaboration between Fairfax County and Fairfax County Public Schools (FCPS) to further County efforts in energy efficiency and environmental sustainability. The following transportation-related recommendations were included in the JET:

- Bus Fleet Replacement: Transition the Fairfax Connector diesel bus fleet to electric alternatives by 2030, and the FCPS fleet by 2035 (also see Spotlight on FCPS).
- Non-Bus Fleet Replacement: Determine which vehicles have electric (or other non-carbon emitting) alternatives and transition them by 2035. Develop a plan for mitigating the carbon footprint of others.
- Charging Infrastructure: Necessary charging infrastructure will be installed to scale as fleets grow. Wherever possible, charging infrastructure will serve FCPS and the County.
- Use 100% Clean Fuel: Develop a plan to fuel these electric vehicles using non-carbon emitting fuels and carbon offsets with a complete transition to 100% clean fuel by 2030.

¹ All hyperlinks in this chapter were accessed/reviewed on August 11, 2024.

- Coordination: FCPS and the County coordinate electrification efforts and share charging and maintenance infrastructure whenever possible. Each should develop legislative packages for the General Assembly to help achieve these recommendations.

As of December 2023, EVs represented approximately 3.5% of the county fleet (including Fairfax Connector buses). According to a [July 2024 announcement](#) from the Federal Transit Administration, Fairfax County “will receive funding [\$50.6 million] to buy new low emission diesel-electric hybrid buses to replace older buses as part of its fleet replacement plan. The new buses will reduce greenhouse gas emissions and improve reliability and service while addressing the needs of disadvantaged communities.” The extent to which this grant funding will help the county to transition the Fairfax Connector diesel bus fleet (identified as 50 diesel buses in the JET report) to electric alternatives by 2030 was not provided.

In FY 24, Fairfax County purchased three heavy-duty battery-electric vehicles (and associated EVSE); these were partially offset by grant funding from the VA DEQ Clean Air Communities Program Project. Fairfax County also participated in the Dominion Energy Smart Charging Infrastructure Pilot Program and in spring 2023 received rebates for installing nine (9) smart EVCS. In FY 21, Fairfax County Department of Transportation (FCDOT) was awarded \$4.4M in grant funding from the Clean Air Communities Virginia state grant program that help offset costs to purchase battery electric buses (BEBs) for the Fairfax Connector, a solid waste truck and a box truck, plus associated EVSE. The county is also seeking IRA clean energy tax credits in the form of elective pay (AKA direct pay) for all EVs (fleet and buses) purchased in FY 24, plus EVSE installed at eligible county facilities. As part of its federal tax return (planned for November 2024), the county intends to file for direct payments every year as long as they are acquiring more eligible EVs and installing more eligible EVSE.

Overall, county vehicle fossil fuel consumption (diesel and gasoline) decreased 18% (1.2 million gallons) from FY 18 to FY 23. County vehicles consume almost twice as much diesel as gasoline, and most of the reduction from was due to reduction in diesel fuel consumption from use of more efficient diesel vehicles, operations, and routes, and replacing some diesel vehicles with electric alternatives.

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 (BOS) unanimously endorsed on May 10, 2022. The ActiveFairfax Transportation Plan project is expected to be completed by mid-2025. Public engagement on the draft Active Transportation and Trail Network and draft Active Transportation Toolkit are planned for late summer and fall 2024. After project completion, the Comprehensive Plan will need to be amended with elements of the ActiveFairfax Transportation Plan – including the Active Transportation and Trails Network Plan map, which is replacing the Bicycle Master Plan, and updating the Countywide Trails Plan. FCDOT provided data for the average number of new bicycle paths, lane-miles and crosswalks constructed in Fairfax County (actual data for FY 21 – FY 23 and estimated data for FY 24 – FY 25) (Table T-2). These data are for projects managed/implemented by FCDOT and do not include those constructed by the Virginia Department of Transportation (VDOT), developers, or other entities. Much of the work to construct non-motorized infrastructure is performed by VDOT. However, estimates of the

infrastructure constructed by VDOT or private developers were not made available to EQAC. Recently, portions of the east-west trail being constructed parallel to I-66 that will connect Gallows Road to Centreville were opened to the public.

EQAC also is following the approach being used by FCDOT to reduce the impact of transportation projects on native trees and natural areas (e.g., in Environmental Quality Corridors [EQCs], resource protection areas [RPAs], and the Occoquan Watershed). To do this, FCDOT refers to Section 4(f)² 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. Section 4(f), now codified in 49 U.S.C. §303 and 23 U.S.C. §138, is implemented by all USDOT agencies, including the Federal Highway Administration (FHWA) and Federal Transit Administration (FTA), through the regulation 23 CFR 774.

Title 9 of the VAC (9VAC25-8/30-150) allows public roads to be located within the Chesapeake Bay Preservation Ordinance (CBPO) in RPAs subject to certain conditions. Construction, installation, operation, and maintenance of public roads and the roads' appurtenant structures are exempt from the CBPO if in accordance with:

- Regulations promulgated pursuant to the Erosion and Sediment Control (ESC) Law and the Virginia Stormwater Management (SWM) Act;
- An ESC plan and a SWM plan approved by VDEQ; or
- Local water quality protection criteria at least as stringent as the above state requirements.

The exemption of public roads is further conditioned on the following:

- Optimization of the road alignment and design, consistent with other applicable requirements, to prevent or otherwise minimize encroachment in the RPA; and
- Prevention or otherwise minimization of adverse effects on water quality.

With regard to tree preservation, FCDOT reports that, while transportation/linear projects are exempt from RPA, Occoquan Watershed and other restrictions, they attempt to minimize impacts to areas outside of existing right-of-way by the following methods:

1. Convert roadway to curb and gutter with closed drainage systems to minimize grading outside of existing right-of-way (RW).
2. Reduce required buffer strip between roadway (curb) and sidewalk/trail (where appropriate) to minimize grading and tree clearing, while maintaining a safe buffer between pedestrians/bicyclists and roadway traffic.
3. Use underground stormwater detention/water quality treatment facilities and place them within existing RW as much as possible.
4. Compensate property owners for loss of landscaping/trees, which allows them to replant after our project is complete (noting property owners are not required to replant).

² Section 4(f) is part of The Department of Transportation (DOT) Act of 1966. Section 4(f) specifies that FHWA cannot approve the use of land from publicly owned parks, recreational areas, wildlife and waterfowl refuges, or public and private historical sites unless there are no existing feasible and prudent alternatives to the use of the land and the proposed action includes all possible planning to minimize harm to the property.

5. Abide by State/Federal Laws and regulations (4(f) of the U.S. Department of Transportation Act of 1966 and 6(f)³) of the Land and Water Conservation Fund Act of 1965 to minimize and mitigate impacts to natural resources including streams and wetlands.

Further, FCDOT reports that, while they do not do landscaping on a routine basis, there are instances where it will occur. For example, at Fort Belvoir, they will be replacing trees that are cleared with new trees at a ratio of 2:1. They note that all landscaping along the Bus Rapid Transit (BRT) route is ‘unique’ to BRT. Also, there are instances where alignment (probably of a trail) was shifted to preserve a large “specimen” tree.

CURRENT CONCERNS

An evaluation of traffic congestion for 2023 ranked Washington, D.C. as 18th worst in the world and 7th worst in the United States, with each driver losing an average of 63 hours to congestion, corresponding to a cost of \$1,095 for wasted fuel per driver. There is no doubt that the COVID-19 pandemic has significantly impacted commuting patterns in Fairfax County and elsewhere throughout the U.S. In addition, it is likely that the situation in mid-2024 as this report is being written is very different from that which is reflected in the 2022 ACS data, since those data were collected soon after the height of the pandemic when many offices and other businesses were experiencing significant use of telework. Since that time, there has been a substantial return to pre-pandemic norms, though transit ridership remains depressed and work-from-home numbers remain elevated. Data were not available to inform a current understanding of the relative use of different transportation modes in Fairfax County.

WMATA is continuing to indicate they are anticipating a substantial shortfall in their operating budget. Fairfax County is planning to provide 12.7% of WMATA’s overall operating budget for FY 25, and county staff are expressing optimism that the General Assembly and the Governor’s office will come to an agreement to fund 50% of the funding gap. County staff reported that the county will cover its 50% through increases to the General Fund and State Aid contributions. If no agreement is reached, it is suspected the county will have to tap into additional state aid, but this is not guaranteed. In addition, county staff and others throughout the region are examining possible sources of revenue, in the event that the jurisdictions are asked to take on a larger share of the burden (e-mail from Arletta Thirus, FCDOT; June 24, 2024).

Anecdotal information suggests that, as of mid-2024, traffic congestion has substantially returned to Fairfax County with SOV use still the predominant mode used in the county. Such information suggests that traffic congestion is also no longer limited to traditional rush hour

³ Section 6(f) is included in the Land and Water Conservation Fund Act (LWCF) of 1965. The LWCF is a federal program that was established by Congress in 1964 to provide funds and matching grants to federal, state and local governments for the acquisition of land and water, and easements on land and water, for the benefit of all recreating Americans. The income for the LWCF comes largely from Outer Continental Shelf mineral receipts. The LWCF is administered by the Department of Interior’s National Park Service (NPS). The NPS oversight pertains to projects that would cause impacts on or the permanent conversion of recreational property acquired with LWCF monies. Under Section 6(f), it is prohibited to convert property acquired or developed with LWCF grant money to non-recreational purposes without approval from the NPS. Section 6(f) is discussed with Section 4(f) because, in some cases, Section 4(f) resources have received assistance from the LWCF.

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. FCDOT is taking several steps in their efforts to reduce SOV use in the county, including use of transportation demand management strategies. EQAC appreciates the county's efforts to support public transit and micro-mobility options and to try to reduce SOV use but is concerned about the impacts of traffic congestion and the predominant use of SOVs in Fairfax County; impacts include contributions to greenhouse gas generation and impaired air quality.

Taking actions to achieve the transportation-related goals in the CECAP and JET reports is critical given that transportation is the second-largest source of greenhouse gas emissions in Fairfax County, and, unlike buildings, transportation showed relatively fewer decreases in greenhouse gas emissions on the Fairfax County Dashboard. Efforts to have at least 15% of all light-duty vehicle registrations in Fairfax County be EVs by 2030 will be helpful for decreasing greenhouse gas emissions. Such efforts will also need coordination with activities described in the Climate and Energy Chapter such as increased availability of charging stations and activities in the Air Quality chapter about improving ground-level ozone. Information was not provided about the county's plan to implement the JET recommendations about bus fleet replacement, non-bus fleet replacement, charging infrastructure, and use of clean fuel.

Another transportation-related goal in the CECAP report is to increase use of transit and non-motorized commuting to at least 30% (including teleworking) by 2030. While the dashboard shows that this goal of 30% was met for the D.C. metro area by 2022 (a total of about 57%), EQAC suggests that a conclusion to say that this goal has been achieved may be premature. Much of the achievement is related to the substantial increase in telework associated with the COVID-19 pandemic (which account for about 80% of the transit and non-motorized commuting) and are likely to drop as the pandemic recedes. Also, EQAC is concerned that an examination of data limited to commuting omits the substantial number of non-work trips in Fairfax County, of which anecdotal information suggests are predominantly made by SOV.

Ongoing efforts are needed to complete the Active Fairfax Transportation Plan in a timely manner, including the Safe Streets for All Program, and to provide the resources and funding needed for implementation. The Safe Streets for All program would be helpful for people walking, biking, and using other forms of active transportation, and was unanimously endorsed by the Board of Supervisors on May 10, 2022. However, the Board of Supervisors has not budgeted any staff to implement Safe Streets for All as a program. FCDOT unsuccessfully requested a new staff position to manage the program in FY 23 and FY 24, and plans to re-submit the request for FY 25. Given the lack of a staff person, other FCDOT staff continue to work on safety through their regular work, taking their time away from other needed activities. Further, there is insufficient maintenance of the non-motorized facilities and a need for the county to provide dedicated funding to support such maintenance.

EQAC recognizes the efforts by county staff to evaluate and consider climate vulnerability concerns for roadways, public transit, and bicycle & pedestrian routes in Fairfax County (Figure

T-3). EQAC is concerned, however, about the extent to which equity concerns, as articulated through One Fairfax, are included in actions taken to achieve the transportation-related goals in the CECAP report and in efforts to consider adaptation measures to address climate vulnerability. FCDOT staff did not provide input about the ways that One Fairfax was being used in county efforts to increase light-duty EV registrations or address climate vulnerability.

RECOMMENDATIONS

The Scorecard for this Annual Report on the Environment (ARE) contains the following recommendations pertaining to this chapter. Please see the Scorecard for details.

- 1. Develop a formal plan to increase light-duty electric vehicle (EV) registrations to at least 15% of total registrations by 2030.**

Recommendation: 2TRANS-2021.1 | Age: 4 years | Status: Making progress

- 2. 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: 2TRANS-2023.1. | Age: 1 year | Status: Making progress

- 3. Provide an action plan with proposed budgets for implementing the JET recommendations to replace the county connector diesel bus fleet to EVs by 2030, transition non-bus county vehicles to EVs by 2035, and develop the necessary charging infrastructure and EV maintenance capability.**

Recommendation: 2TRANS-2024.1 | Status: New this year

TABLES AND FIGURES FOR TRANSPORTATION CHAPTER

Table T-1. Summary of Fairfax County’s Contribution to Public Transit Organizations.

Operating Budget	Fairfax County Contribution	Fairfax Percentage of Operating Budget
WMATA – FY 2025	\$223,000,000	12.7%
VRE – FY 2025	\$5,473,928	3%
Fairfax Connector – FY 2024	\$42,965,059	23%
Fairfax Connector – FY 2025	\$45,113,312	25%

Source: FCDOT, e-mail from Arletta Thirus; June 24, 2024.

Alternate text for Table T-1: Table T-1 shows the amount of money that Fairfax County contributes to WMATA, VRE, and Fairfax Connector both as a dollar amount and as a percent of the total operating budget. It shows Fairfax contributing about 12.7% of WMATA’s budget for FY 25, 3% of VRE’s budget for FY 25, and 23% of Fairfax Connector’s budget for FY 24 and 25% for FY 25.

Table T-2. Summary of Average Number of New Bicycle Paths, Lane-miles, and Crosswalks Constructed in Fairfax County.

	FY21 Actual	FY22 Actual	FY23 Actual	FY24 Estimate	FY25 Estimate
New Roadway Lanes (LF)	1,899	3,085	700	31,095	5,879
# Intersections Improved	59	25	19	26	36
# Crosswalks Improved	30	18	31	81	42
# of New Pedestrian Crossing Signal Heads	23	21	19	80	28
Conc. Sidewalk (LF)	16,720	11,929	5,978	11,618	9,001
Asphalt Trails/Shared Use Paths (SUP’s) (LF)	5,709	2,166	8,204	27,753	10,045
Cycle Track/On-Road Bike Lanes*	6,600	5,460	0	0	1,700
Bus Stop Improvements**	35	19	13	21	45

of Intersections – includes any intersection where new/improved crosswalks, curb ramps, and/or ped signals, were installed.

Crosswalks – new/improved crosswalks at signalized and unsignalized intersections.

* Cycle Tracks/On-Road Bike Lanes – emphasis on Bicycle facilities has shifted from “on-road” to being separated from the roadway (cycle tracks and shared use paths (SUP’s)). Data for FY21 and FY22 is for on-road bike lanes.

** Bus Stop Improvements include improvement for ped/bike access to the bus stop, bus loading pads, benches, and/or shelters.

Source: FCDOT, e-mail from Arletta Thirus; June 24, 2024.

Alternate text for Table T-2: to be prepared.

Figure T-1. Number of Fairfax County Households Commuting by Mode of Transportation (2013 – 2022).

Source: <https://datausa.io/profile/geo/fairfax-county-va>; downloaded July 8, 2024.

Alternate text for Figure T-1: to be prepared.

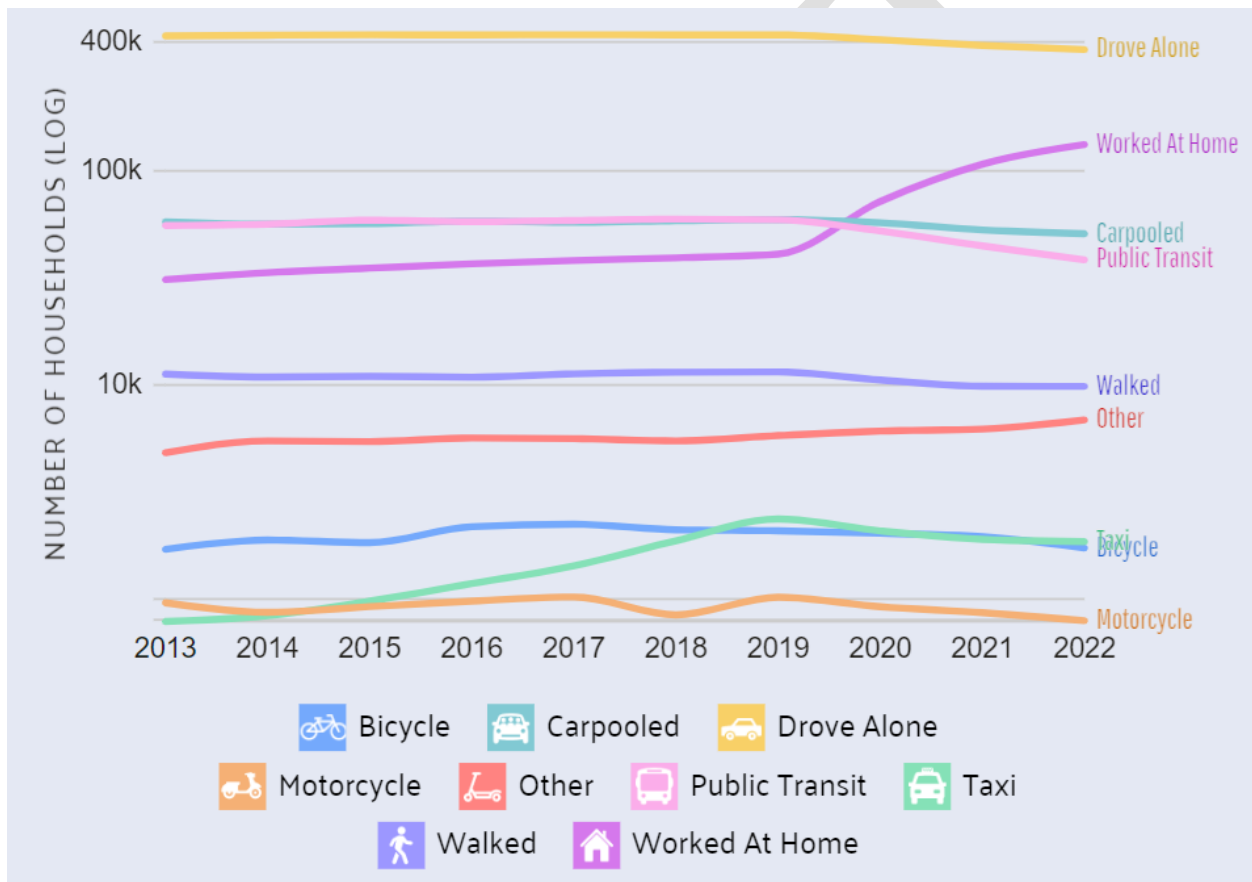


Figure T-2. Electric Vehicle Registration in Fairfax County.

Source: Fairfax County Dashboard; <https://www.fairfaxcounty.gov/environment-energy-coordination/climate-action/transportation>; downloaded July 8, 2024.

Alternate text for Figure T-2: to be prepared.

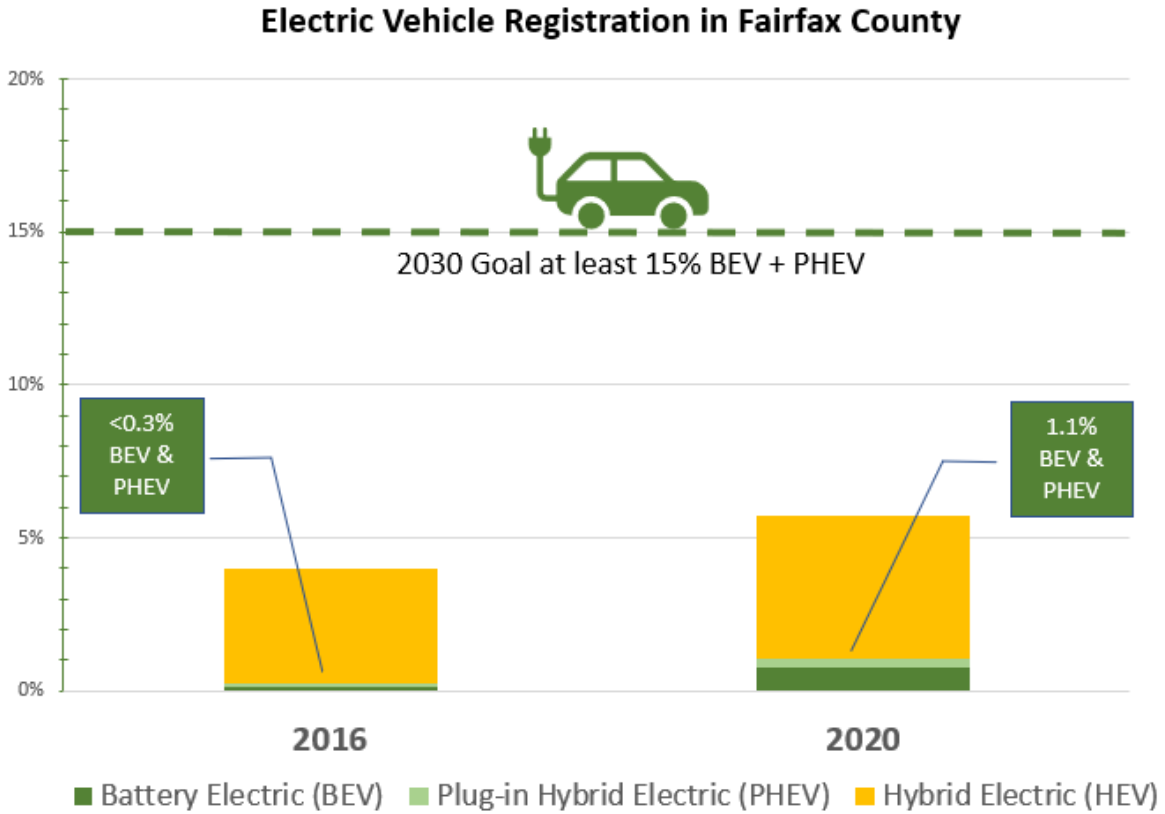











Figure T-3. Summary of Climate Vulnerability for Roadways, Public Transit, and Bicycle & Pedestrian in Fairfax County

Source: [Fairfax County Dashboard](#)

Alternate text for Figure T-3: to be prepared.

Transportation Sector Climate Vulnerability Summary Fairfax County, Virginia				
				
		Roadways	Public Transit	Bicycle & Pedestrian
	Extreme Heat	Moderately High	High	Moderately High
	Inland Flooding	High	Moderately High	Moderate
	Severe Storms	High	Moderately High	Moderately High
	Extreme Cold	Low	Low	Low
	Coastal Flooding	Moderate	Low	Moderate
	Drought	Very Low	Very Low	Very Low

SCORECARD

- Recommendation: 2TRANS-2021.1. Develop a formal plan to increase light-duty electric vehicle (EV) registrations to at least 15% of total registrations by 2030.**

Summary of Action Taken by Agency or Department

Efforts to address this recommendation are being implemented and/or coordinated by the Office of Environmental and Energy Coordination (OEEC). For example, OEEC's Carbon-Free Fairfax program provides resources and campaigns promoting EV adoption including information on incentives. OEEC has made a Climate Action Dashboard available to the public showing progress toward achieving the CECAP goal to have at least 15% of all light-duty vehicle registrations in Fairfax County be EVs.

Status/EQAC Comments:

Making progress/Recommended since 2021.

Achieving the 15% goal will require further efforts than are currently in place. Having a better understanding of the funding needed to achieve the CECAP goal would be helpful.

2. **Recommendation: 2TRANS-2023.1. Provide the resources and funding needed to complete and implement the ActiveFairfax Transportation Plan in a timely manner, including providing a staff position for the Safe Streets for All Program.**

Summary of Action Taken by Agency or Department

The ActiveFairfax Transportation Plan continues to be under development with the county now targeting completion by mid-2025. The Safe Streets for All Program is a critical component of that plan and was unanimously endorsed by the Board of Supervisors on May 10, 2022 however the board has not budgeted any staff to implement it as a program.

Status/EQAC Comments:

Making progress/Recommended since 2023.

Adequate staffing and funding need to be provided by the board to implement both the ActiveFairfax Transportation Plan and Safe Streets for All Program. The board also needs to provide the resources to address maintenance needs of non-motorized infrastructure in the county.

3. **Recommendation: 2TRANS-2024.1. Provide an action plan with proposed budgets for implementing the JET recommendations to replace the county connector diesel bus fleet to EVs by 2030, transition non-bus county vehicles to EVs by 2035, and develop the necessary charging infrastructure and EV maintenance capability.**

Summary of Action Taken by Agency or Department

Efforts to complete an EV Readiness Strategy (completion targeted for summer 2025) and to pursue available grants will be helpful to inform development of an action plan for meeting the timelines identified in the JET recommendations to replace the county connector diesel bus fleet to EVs, transition non-bus county vehicles to EVs, and develop the necessary charging infrastructure and EV maintenance capability.

Status/EQAC Comments:

New this year.