

Faith Alliance for
Climate Solutions

2021 Fairfax to Zero

Advocating for a just,
sustainable future

Housing Justice



Tree Canopy



Transportation



Waste Stream



Net Zero Schools



Green Bank



Climate Planning





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Introduction

Dear Friends,

Since we began meeting as a discussion group in my congregation's basement seven years ago, Faith Alliance for Climate Solutions has grown into a strong and respected nonprofit based in Fairfax County, Virginia. We count over 2,400 supporters from more than 75 churches, temples, and mosques, and we continue to grow.

This booklet represents another advance. It is the first time that we have compiled our advocacy platform in a single document. It describes a number of important policy strategies which, when implemented, will dramatically reduce greenhouse gas pollution, improve public health, foster economic prosperity, and promote job opportunities for Virginians.

In a time of multiple severe challenges – the COVID-19 pandemic, an economic crisis, and a long overdue focus on racial justice – one might ask why we focus on climate and energy. The answer is twofold: urgency and opportunity. The climate crisis is upon us and gets worse with every day of inaction. We have no time to wait.

The good news is that eliminating carbon pollution will not only bring cleaner air and better health, but new businesses and good jobs. The people who are a part of FACS believe that responding to the climate crisis is a moral imperative. We act for those living today, for the young people in our lives, and for future generations. That belief unites our many different faith traditions.

I want to acknowledge the work of our many volunteers who have spent countless hours researching and writing this booklet. We would not be where we are today without their selfless dedication and determination that there is something each of us can do.

Warmest regards,

Eric Goplerud
Founder and Chair, Faith Alliance for Climate Solutions

"We rely on each other. Our children are relying on us in order for them to have a future."

– Thich Nhat Hahn, Being Peace



Decreasing the Energy Burden for Low-Income Housing



Energy inefficiency in Fairfax County housing not only increases greenhouse gas (GHG) emissions, but is a social justice issue. Low-income homeowners and renters pay more for utilities per square foot than the average homeowner, and utility costs consume a higher percentage of their income, an “excess energy burden.”

The American Council for an Energy Efficiency Economy says that bringing low income homes and multifamily dwellings up to the efficiency of the median would eliminate 42% of the excess energy burden for African-American households, 68% for Latinx, and 97% for renters. Families with high energy burdens may be forced to inadequately heat, cool, or light their homes, or run the risk of having utility service cut off for non-payment. The loss of utility service can lead to homelessness, or to child welfare agencies removing children from their home.

The Robert Wood Johnson Foundation’s County Health Rankings show 14% of Northern Virginia households have severe housing problems. In our affluent region are 15 “islands of disadvantage” where residents, disproportionately including people of color, face poverty, poor education, unaffordable housing, and lack of health insurance.

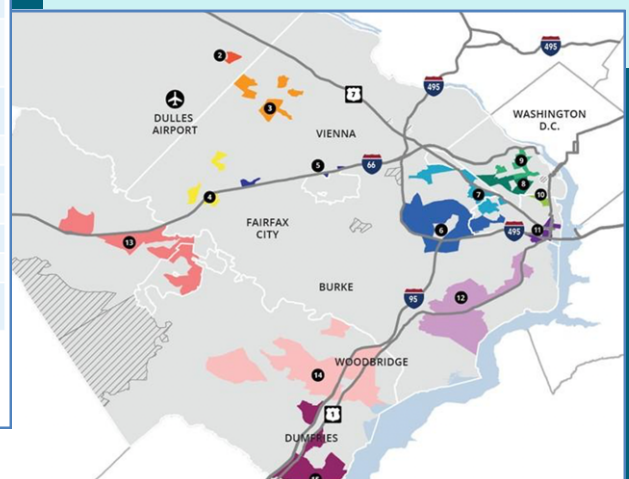
Fairfax County estimates that some 11,048 elderly homeowners, 7,425 older renters, and 17,500 people with disabilities spend more than half their income on housing.

Energy-efficiency programs can not only boost the economy by providing jobs for construction workers, but can improve financial security of low-income residents by reducing their utility bills. These programs also improve health, by reducing exposure of occupants to extreme temperatures, to indoor and outdoor air pollution, to moisture and mold, and to infiltration by rats, cockroaches, and other pests. After energy efficiency repairs, low-income renters in multi-unit dwellings report they are more comfortable in their units, can pay utility bills with greater ease, and are more likely to renew their leases.

TABLE ES1. Median income, utility bill, energy burden, and unit size for households based on income type, building type, building ownership, and household race for groups across all metro areas

	Household type	Median annual income	Median size of unit (square feet)	Median annual utility spending	Median annual utility costs per square foot	Median energy burden ¹
Income type	Low-income ² (≤80% AMI) ³	\$24,998	1,200	\$1,692	\$1.41	7.2%
	Non-low-income	\$90,000	1,800	\$2,112	\$1.17	2.3%
	Low-income multifamily (≤80% AMI)	\$21,996	800	\$1,032	\$1.29	5.0%
	Non-low-income multifamily	\$71,982	950	\$1,104	\$1.16	1.5%
Building ownership	Renters	\$34,972	1,000	\$1,404	\$1.40	4.0%
	Owners	\$68,000	1,850	\$2,172	\$1.17	3.3%
Head of household race	White	\$58,000	1,600	\$1,956	\$1.22	3.3%
	African-American	\$34,494	1,290	\$1,920	\$1.49	5.4%
	Latino	\$39,994	1,200	\$1,704	\$1.42	4.1%
All households	N/A	\$53,988	1,573	\$1,932	\$1.23	3.5%

¹ Energy burden is the percentage of household income that is spent on energy bills. To calculate median energy burden, we calculated energy burden for all households and then took the median. This value differs from the median energy burden that is calculated using median annual utility spending and income.
² Low-income includes both single- and multifamily households. ³ Area median income (AMI) is the median dollar amount that divides the population into two equal parts.
Source: American Housing Survey (Census Bureau 2011 and 2013a).





FACS urges Fairfax County to:

- **Participate in a fall 2020 stakeholder process whereby the Virginia Department of Housing and Community Development** will decide how to spend an estimated \$50–75 million in low-income energy efficiency funds from the new Regional Greenhouse Gas Initiative (RGGI) – such as deep energy retrofits (exceeding current Uniform Statewide Building Code standards) that complement existing state affordable housing construction and rehabilitation, so lowest-income populations see long-term cost savings, and innovative approaches that prioritize long-term sustainability/durability and occupant health (e.g. ventilation) and energy efficiency.
- **Invest in an information campaign about RGGI in multiple languages**, targeting landlords who own smaller, older affordable buildings, as well as renters, so that those who are eligible will be aware of the program.
- **Apply for RGGI funds to increase the energy efficiency of low-income housing owned and/or operated by the county.** The Fairfax County Redevelopment and Housing Authority (FCRH) owns or manages nearly 4,000 units of affordable housing – including multifamily housing, senior housing, licensed assisted living, and special needs housing. FCRH also administers the County's land use housing programs and the investment of local funds and state and federal grants to increase and/or preserve the county's stock of affordable homes. To not risk missing out, the County should promptly apply for RGGI funding for low-income energy efficiency repairs, and allocate federal, state, and county funds to increase energy efficiency in low-income housing.
- **Support Energy Masters and similar programs** to make low cost, high impact energy efficiency repairs in low income, elderly and disabled housing in the county. Over the last four years, FACS has trained more than 100 volunteers in faith communities and community organizations to make weatherization and energy efficiency repairs through our Energy Masters program (together with EcoAction Arlington), and they have made repairs in dozens of homes of low-income, elderly, and disabled individuals, and in community residences of mentally ill and disabled adults. After Energy Masters repairs, blower door tests showed increases of 8.5% to 14% in air tightness. Based on 20 FACS projects, we estimate that a cost of \$1,470 has yielded annual savings of \$4,370, and that CO2 emissions have in total been reduced by 41,754 pounds. Last year, FACS organized a task force on low-income energy efficiency that resulted in the County allocating \$30,000 in 2019 and \$95,000 in 2020 to make energy efficiency repairs to county-owned affordable housing. This program should be expanded to include county-owned and operated affordable housing and community residential facilities for people with disabilities and special needs.

• **Include in the County's legislative agenda for the 2021 General Assembly a bill mandating that Virginia's Uniform Statewide Building Code (USBC) be kept updated** to international energy efficiency building code standards. Commercial and residential buildings consume 52% of Virginia's energy, as reported by the [U.S. Energy Information Administration](#) – 25.4% by residential buildings alone, some 610.2 trillion BTUs in 2018. However, as covered more fully in our discussion of Building Codes, Virginia's residential building energy efficiency standards are well behind international standards, needlessly increasing utility costs for renters and homeowners, jeopardizing people's health and safety, wasting energy and increasing GHG emissions. [Many states](#), including Virginia's neighbors Maryland, DC, and North Carolina, have more rigorous residential building efficiency codes than Virginia. The American Council for an Energy-Efficient Economy ranks Virginia's building codes as 29th, below even Florida, Texas, and Nevada. Some states, such as Maryland, require state adoption of international building codes within a year of their promulgation, but in Virginia the Home Builders Association has prevented strengthening insulation standards for a decade, and most likely will do so again. If action is not taken by the Virginia Department of Housing and Community Development or the Governor in the next few months, weak standards could be locked in for the next three years. To prevent this, legislation should require that the USBC is kept current, so as to cut greenhouse gases and reduce energy poverty.



Reducing the Waste Stream

Fairfax County continues to grow, with attendant increases in trash and air pollution, but our recycling rate has stagnated. To reduce greenhouse gases (GHGs) and other pollutants, FACS urges Fairfax County to develop innovative programs to increase recycling and divert trash away from landfills and the Covanta Incinerator. Under section 109 of the County Code, the Department of Public Works and Environmental Services (DPWES) addresses solid waste. To increase recycling and decrease solid waste, many actions can be taken by the Board of Supervisors, but some state legislation will also be required. Working toward Zero Waste by reducing its waste stream and GHGs, the County could divert some 500,000 tons of trash, over 80% of the total generated in 2019.

FACS urges Fairfax County to:

- Become a Zero Waste jurisdiction.** Arlington, Montgomery County, DC, Maryland, and the Metropolitan Washington Council of Governments have all made Zero Waste commitments – a no-cost aspirational goal, but one that provides a clear incentive to reduce waste. Fairfax County's recycle rate has remained in the mid- 40% range for years. Arlington County (50.7% recycle rate), Montgomery County (62.7% recycle rate), and Washington DC all lead Fairfax County in offering waste reduction programs, and have higher recycling rates and organic composting rates. The EPA lists many low- or no-cost ways to transform waste streams. Using the programs listed below, the County could achieve an 80% or greater waste reduction without large capital expenditures. The Department of Environmental Quality (DEQ) said in 2019 the County disposed of 584,255 tons of waste; an 85% reduction could amount to a half million fewer tons of trash being burned or buried.

- Reduce Covanta's air pollution.** The Covanta incinerator in Lorton receives trash from Virginia, the District of Columbia, Prince William and Loudoun counties, as well as five states: Maryland, North Carolina, Pennsylvania, Delaware, New Jersey, and New York. It is by far the largest single source of air pollution and greenhouse gases in Fairfax County. The best way to reduce incinerator pollution is to properly process trash before burning it. Wet garbage is more polluting to burn, while composting makes trash lighter and drier. Removing metals and hard to burn items like mattresses before burning reduces heavy metal air pollution. The new Martinsburg, West Virginia, incinerator uses high-efficiency biological treatment on their trash. The trash is dried, chipped into small pieces and metals are removed before burning. Covanta currently burns wet garbage and metals, then tries to remove pollution from the emissions. This is inefficient and harmful to public health. By contrast, limiting what is burned, by running shredded trash through a magnet system to remove metal is cheaper, easier, and healthier than using expensive pollution controls and burying the resulting hazardous ash, and avoids air pollution in the first place. Covanta Fairfax should be required to install the Best Available Control Technology.



•**Mandate that private trash haulers do not pick up contaminated recycling.** By doing this, some towns have driven their contamination rate from our current 30% to 2%. Clean recyclables have a high market value, but contamination increases sorting costs and decreases the value of the dirty recycled material. Manufacturers have a harder time using recycled feedstock, so they use less recycled material. This no-cost solution should be mandated so every hauler plays by the same rules. There are many ways the haulers can educate their customers about this rule – and refusing to pick up contaminated recycling is a sure attention getter.

•**Ban yard waste in plastic bags.** For several years DPWES has had a “voluntary goal” for yard waste to be put in paper bags or loose in a yard waste bin, but people are still putting yard waste in plastic bags, defeating the purpose of recycling and contaminating the entire lot. A ban on plastic yard waste bags is necessary. Paper bags, bins and vacuum trucks are readily available alternatives – as is composting on one’s own property. The Board of Supervisors should make a clear statement of support, to increase effective recycling.

•**Incentivize property developers to make space and facilities in their development plans for purple bin glass collection.** The County has a Purple Can on every available County lot. This incredibly popular program needs to expand, since Virginia no longer recycles glass. Incentives, including zoning waivers, can prompt private property managers to host Purple Bins, and many multifamily housing units and shopping centers would immediately benefit from additional recycling opportunities. Expanding the list of desired proffers for re-zoning applications to include a glass recycling station would further help grow regional glass recycling.

•**Support composting pilot programs.** DPWES is currently investigating several composting pilot programs, and these should be fully supported. Organics make up a significant portion of our waste stream and can be easily diverted. Many DC Metro jurisdictions, including the City of Falls Church, have composting programs that contribute to higher recycling rates, and composting has proven to be immensely popular. We should have drop off sites, target high-use commercial users such as hotels, restaurants, grocery stores, and multifamily housing, and offer residential pick-ups in high density areas. This a popular and low-cost way to reduce GHGs.



FACS urges State Legislators to:

•**Increase the mandatory recycling rate from 25% to 80% by 2030 in large metropolitan areas.** The current two-tier system requires a 15% recycling rate for small rural counties, and a 25% rate for metropolitan areas. We would keep the 15% for smaller rural areas but raise the rate for urban areas, which have exceeded the current rate for 19 of the last 20 years (statewide rates were 46% in 2018, and 41% in 2019). An aspirational goal will inspire new programs, and could reduce solid waste by an estimated 10 million tons in ten years. Improved tracking can also help. DEQ's "Locality Recycling Rate Report" should include percentages of each material recycled. It tracks tonnage of 17 materials (paper, metal, plastic, motor oil, etc.) but a percentage would highlight trends and flag areas for improvement. Better data is also needed on Construction and Demolition Debris (CDD) waste: there is a credit for "Solid Waste Reused" (CDD, brick, concrete, etc.) but no accounting of CDD disposed of in a landfill or incinerator. Better tracking would lead to better management. There must also be effective enforcement. Recycling seems to have been specifically exempted from criminal fines for violating State and County laws and regulations. However, each municipality needs to be able to charge persistent violators. Inspectors, supervisors, prosecutors and judges can make reasonable judgments as to appropriate punishment, but having no effective punishment available encourages willful violations.

•**Modify state Building Codes to require more space in multi-unit dwellings and commercial buildings for recycling.** Current commercial and multi-unit residential building standards do not require space be set aside for handling trash and recycling. Space is often limited and poorly designed to facilitate convenient recycling.

•**Reduce DEQ permitted air pollution from existing and new municipal solid waste incinerators.** Reduce Virginia Dept. of Environmental Quality (DEQ) permitted air pollution from existing and new municipal solid waste incinerators. Canadian and European Union standards for existing and new incinerators are based on the best available control technology and are more stringent than Virginia's. Covanta's Duran-York (Ontario) Canadian incinerator meets these tough standards and the air around those plants is much safer than near Covanta Fairfax. The residents of Fairfax County and surrounding jurisdictions deserve clean air as well. The DEQ should be directed to upgrade its air pollution standards for incinerators and to properly enforce the tougher standards.

•**Discourage consumer waste.** State legislation should expand the types of single-use plastic films and bags prohibited or subject to a fee. Legislation passed in 2020 exempts many uses of single-use plastic films, while other jurisdictions impose fees or ban their use altogether. Legislators in 2021 must vote a second time to ban polystyrene (Styrofoam) food containers. In addition, fees imposed on beverage containers (bottles, plastic and aluminum containers) are effective across the county to increase container recycling and reduce waste.

Protecting and Increasing Our Tree Canopy



Trees remove carbon from the air, improve air quality, reduce stormwater run-off, and moderate summer heat. A healthy, extensive tree canopy can thus help mitigate the climate crisis and improve the quality of life for all county residents. Broad swaths of concrete with little tree cover (e.g. transportation corridors, large parking lots near affordable housing) lead to health risks from heat islands, more stormwater flooding, and increased pollution. Increasing the tree canopy can address environmental injustices in affected neighborhoods – and throughout the county, a healthy tree canopy will help increase energy efficiency, a big part of any climate resiliency plan.

The Tree Commission's 2019 Tree Action Plan (TAP), approved on March 24, 2020 by the Board of Supervisors, is a significant step forward, but it is aspirational only, and does not propose any regulations or request any budget. FACS looks forward to working with county leadership on tree canopy health, expansion, and future resilience. It is crucial that all county agencies have the mandate, and budget, to fully consider the economic, health, and social costs of tree canopy degradation or reduction in all of their work plans, to make the county greener and healthier.

FACS urges Fairfax County to support the TAP's goal of preserving our current 57% tree canopy, and also to:

- **Update the Tree Action Plan** to set more ambitious tree canopy goals, district by district, focusing on low-income areas at risk from heat island effects, as well as new developments and infill in older neighborhoods where mature tree canopy is often unnecessarily lost under current regulations. The importance of saving mature trees is reflected in the i-Tree Ecosystem Analysis of 2017, which found that tree cover in the county was about 51%, but that 65% of those trees had a diameter of 6 inches or less. These smaller trees, many planted under development/redevelopment requirements, can take 20+ years to produce a mature canopy. To maintain and increase the canopy requires a focus on saving healthy, large canopy trees in all areas of county-approved construction, given their impact on reducing air pollution, sequestering greenhouse gases, increasing oxygen, deterring stormwater runoff, and reducing energy use in buildings they shade.
- **Pursuant to the TAP**, establish a "Community of Practice" in every county agency to support and monitor tree canopy analysis, to assess the impact of every agency work plan on the tree canopy, and ensure county tree canopy goals are met. In addition to county agencies, the community of practice would include other stakeholder organizations such as civic groups, HOAs, businesses, non-profits, faith communities, utilities, professional organizations, and interested private citizens.
- **Provide budget support** for TAP initiatives, to allow (1) hiring staff to monitor the health of newly planted trees as well as the mature urban forest; (2) augmenting the Tree Preservation Fund (now funded only by penalties for Tree Ordinance violations, and dependent on volunteer partnerships to help acquire and plant trees); (3) training staff in the implementation of a new tree Community of Practice in every county agency.



•**Change zoning requirements** to increase property boundary setbacks in every zoning category to allow space for planting large shade trees, in compliance with state requirements for tree conservation in air-quality non-attainment areas, as elaborated on in the Fairfax County Tree Conservation Manual.

•**Establish a partnership with the Virginia Department of Transportation (VDOT)** to elevate the protection and expansion of the tree canopy in all state highway projects and county residential street right of ways. If large projects impact the tree canopy and trees cannot be replanted in the same area, planting elsewhere in the county should be a required part of the project. And there should be clear rules for any tree trimming or removal in residential and commercial areas. Working with VDOT can have a huge impact on tree canopy.

•**Focus on heat islands.** Support expanding the tree canopy and other vegetative cover in areas prone to “heat island” effects, such as low-income neighborhoods, high-density areas, and large infill projects. While the TAP seeks to preserve tree canopy at 57% of land surface, it does not actively seek to increase it, even in urban corridors, large redevelopment areas, and poorer neighborhoods with less tree cover. Helpful analysis may be found in the U.S. Forest Service’s 2017 “Land Cover Change Analysis: Fairfax County, VA.”



At the state level, FACS encourages the county to support legislation in the Virginia General Assembly that will:

•**Significantly increase tree preservation**, such as by changing tree replacement criteria so that tree canopy credits, tree replacement criteria, and by-right penalties incentivize preserving large, mature trees in all types of development projects and assess canopy loss in re-zoning efforts, including trees in stormwater management calculations for the Chesapeake Bay watershed regulations.

In sum, to ensure the health, expansion, and future resilience of the tree canopy, all county agencies should have a mandate, and budget, to consider economic, health, social and environmental costs of tree canopy degradation or reduction in all of their work plans. In addition, the state tree code should be improved, to allow for better preservation of mature trees. The health and growth of the current tree canopy will also help promote important related goals, such as increasing affordable, energy-efficient housing, cleaner transportation options, and better climate resiliency efforts, and as a consequence, trees should factor in all of those important discussions as well.



Modernizing Our Building Codes



The fundamental role of a uniform building code is to promote public safety through standardized requirements for safe construction practices, but building codes also affect energy efficiency and conservation, such as by their requirements for insulation, and how air-tight a building must be. However, Virginia's Uniform Statewide Building Code (USBC) lags far behind international standards and those of a majority of other states. To limit greenhouse gases (GHGs) and address energy poverty, Virginia needs to update its Uniform Statewide Building Code to meet current standards, and may also need to update the process by which the USBC is developed and adopted.

This is a consequential issue, because commercial and residential buildings consume 52% of Virginia's energy, as reported by the [U.S. Energy Information Administration](#). Residential buildings consume 25.4% of the state's total energy use, a total of 610.2 trillion BTUs in 2018 (commercial buildings consume 26.5%, industry consumes 18.2%, and transportation consumes 29.8%).

Every three years, the [International Code Council \(ICC\)](#) updates the [International Building Code \(IBC\)](#) and the [International Energy Conservation Code \(IECC\)](#). These international codes are used as by most U.S. states, including Virginia. Some states, such as Maryland, directly adopt the current versions of the IBC and IECC for state use. Virginia treats them as only a starting point for a lengthy process of review and modification.

Virginia's codes have fallen far behind international standards and those of most states. For example, its current residential USBC generally conforms to the 2009 IECC. DHCD is now updating Virginia's codes. The current 2018 IECC standards and the soon to be released draft 2021 standards specify floor, wall, ceiling, and window insulation standards that are more rigorous than Virginia's USBC. The IECC 2018 standard requires lower air infiltration (the rate that indoor air is exchanged with outside air) than the USBC. Home builders in more than half the states are constructing homes to energy efficiency standards that are more rigorous than in Virginia. Virginia's weak residential building energy efficiency standards increase operating costs for homebuyers and renters, jeopardize the health and safety of Virginians, needlessly squander energy, and increase GHG emissions.

Virginia's USBC update process is directed by the Board of Housing and Community Development (BHCD), and includes stakeholder input, public meetings, and board actions over the course of a two-year period. Historically, the BHCD has been dominated by residential home developers. Though building science and community development experts have recently been appointed to the Board, developers remain predominant, so that all building-code requirements are subject to their veto. After adoption this fall by the BHCD, the updated code goes to the Virginia Attorney General and Governor for their approval. The updated rules are promulgated and enforced by the DHCD.

In light of this lengthy and conflicted process, many states, including Maryland, DC, and North Carolina, have more rigorous residential building efficiency codes than Virginia's. The American Council for an Energy-Efficient Economy (ACEEE) ranks Virginia's building codes as 29th in the U.S., below even Florida, Texas, and Nevada. Compounding the problem, localities have limited authority to require greater efficiency, such as by attempting to encourage higher efficiency through developer proffers in the zoning and permitting process. To cut GHGs and address energy poverty, FACS urges updating the USBC so the energy efficiency of residential and commercial buildings meets current international standards, and failing that, revising the method by which the USBC is adopted. The impact on the climate and the economy is too great to settle for half measures.



FACS therefore urges action to address this serious problem, in the first instance by the BHCD, which should:

- Update Virginia's Uniform Statewide Building Code** to increase energy efficiency of residential and commercial buildings.
- Adopt the 2018 IECC residential codes for new construction and major renovation**, so as to require builders meet or exceed the 2018 IECC standards for envelope efficiency – particularly for walls and ceilings.
- Refuse to extend Virginia's outdated 2009 residential energy efficiency standards** for another three years.
- Require builders to have third party blower door tests and to limit air infiltration** to three air exchanges per hour or less, as required by the IECC since 2012, not the five air-exchange standard in the current USBC.
- Emulate Maryland's requirement that new IECC standards be adopted** within 12 months of publication.

If these proposals are rejected and the DHCD adopts weak energy efficiency standards, FACS urges the Attorney General and the Governor to withhold their approval, and to mandate adoption of the most recent international standards.



FACS also urges action by the General Assembly:

- **Introduce and pass legislation requiring the DHCD to adopt the current IBC and IECC** without modification, within 12 months of the publication of the latest international standards.
- **Introduce and pass legislation allowing local governments to mandate stricter building codes**, such as by more quickly adopting the latest versions of the IBC and IECC, or by emulating Montgomery County in adopting the ICC's International Green Construction Code, which establishes comprehensive criteria for energy efficiency, resource conservation, water safety, land use, site development, indoor environmental quality, and building performance
- **Mandate public reporting of the energy intensity of public and large non-governmental buildings.** In a major report, the Virginia Energy Efficiency Council (VAEEC) stressed that “[b]enchmarking building energy data is a critical first step for a building owner or facilities manager to improve energy performance over time,” and recommended new State legislation to grant “localities the authority to enact mandatory benchmarking programs for commercial buildings.”¹ The legislature should authorize local jurisdictions to set up energy benchmarking programs, if statewide benchmarking is not feasible.

FACS also urges action by Fairfax County, which should work to ensure that:

- **There are aggressive energy efficiency repairs of county owned or operated low income housing using RGGI**, state and county funds and utility energy efficiency programs, with support for Energy Masters and similar programs to upgrade energy efficiency of low income, elderly and disabled housing in the county.
- **County and FCPS new construction and major renovations meets net zero standards** for energy efficiency.
- **New construction or major renovations of buildings funded by the County**, such as senior housing and affordable housing, meet net zero standards for energy efficiency.
- **County and Fairfax County Public Schools maintain and continuously update publicly accessible energy dashboards** of all of their facilities, and that the County encourages commercial buildings and multi-unit dwellings to publicly report on the energy intensity of their buildings (as is currently done in DC and Montgomery County).
- **The County’s Department of Housing and Community Development tracks and reports to the Board of Supervisors on the use of the revised County Green Building Policy.**
- **The BOS consider requiring energy use disclosures on residential home sales.**



¹ Virginia Energy Efficiency Council, Why Energy Efficiency is a Smart Investment for Virginia: Making the Business Case for Energy Efficiency, 2017, p. 15, available at <https://vaeec.org/wp-content/uploads/2017/05/VAEEC-2017-Report-FINAL.pdf>

Transitioning to Clean and Equitable Transportation



Transportation generates 45% of Virginia's greenhouse gas (GHG) emissions, and pollution that causes respiratory disease and increases healthcare costs. At greatest danger are children, seniors, and those living near major roads. To fight the climate crisis and improve health, Virginia must electrify transportation, support alternatives to driving, and encourage smart growth – and do so in a way that promotes environmental justice (EJ), so job opportunities, improved transit systems, and reduced pollution can also benefit traditionally disadvantaged communities.

Electric vehicles (EVs) have no tailpipe emissions, and the electricity they use per mile accounts for only a third of the pollution a typical car emits – and will fall further as the grid gets greener. EVs don't pollute the air of those living near major roads, and their fuel costs per mile are less than half of a typical car's, since electricity is cheaper than gasoline. With fewer parts (no exhaust system, radiator, engine oil, etc.), EVs also cost much less to maintain. Virginia ranks only 23rd in EV adoption, and should promote EV use to improve public health and our climate.

Electrification must also extend to public transit, and to trucks and other heavy vehicles. Other complementary strategies include reduction of vehicle miles traveled, such as through land use reform, so people do not need to travel as far, and through extension of broadband access, so people do not need to travel as often.

FACS urges the Northam Administration and the General Assembly to:

•**Embrace the cap-and-invest strategy** of the Transportation and Climate Initiative of the Northeast and Mid-Atlantic States (TCI). TCI is a regional collaboration of Virginia, eleven other states, and the District of Columbia, that seeks cleaner transportation options, growth of the clean energy economy, and reduced transportation emissions. TCI is proposing to cap regional carbon dioxide (CO₂) emissions from transportation at a fixed level that would decrease each year. Wholesale gasoline and diesel fuel suppliers would buy carbon allowances for the fuel they sell, with allowances limited so that CO₂ emissions stay under that year's cap. Proceeds from selling allowances would fund priorities of each TCI state, such as promoting EV use, improving mass transit, extending broadband, and improving walking and biking routes. Regionally, TCI is projected to generate up to \$7 billion a year to support the clean-energy transition, and by 2032 to annually produce as much as \$10 billion in public health benefits. A Memorandum of Understanding (MOU) being finalized by the TCI states is expected to earmark some 40% of revenues for EJ projects, and in coordination with groups like Virginia's Council on Environmental Justice, to involve frontline communities in project planning and implementation. It is important that TCI revenues support climate-friendly initiatives that decrease GHG and other pollution, and that extend the benefits of good jobs, improved transportation, and a cleaner environment to all Virginians.



- Develop a comprehensive transportation electrification plan** as several other states have done, and as was recommended in the 2018 Virginia Energy Plan. This should include a strategy for encouraging counties and municipalities to electrify their vehicles, thereby reducing air pollution and also saving money: in the City of Roanoke, the fueling and maintenance costs of new EVs are 80% lower than the vehicles they replaced.
- Promote alternatives to driving**, by improving intercity passenger rail and by incentivizing the electrification, improvement and extension of transit systems, beginning with those communities that have been most impacted by transportation pollution. Fossil fuel transit buses, which are major contributors to both local and overall air pollution, should be a top priority for electrification, particularly since they operate in denser areas, where their pollution affects more people, especially low-income neighborhoods and communities of color. Electrifying transit vehicles can also save 50% on fuel costs and 40% on maintenance costs over diesel buses. Since the operating life of a transit bus is 12–15 years, Virginia must establish funding and other incentives to encourage transit operators to move to electric buses as soon as possible, beginning with electric bus pilot projects now, to allow the development of transition plans to fully electric bus fleets by no later than 2035.
- Enact legislation authorizing EV rebates** (perhaps in time funded with TCI funds, but initially with general revenues or other funding mechanisms). Earlier this year, HB717 (Del. Reid) initiated a study of how best to design such rebates, due by November 1. We would suggest a base rebate of \$3,000 for new Zero-Emission Vehicles (ZEVs) and plug-in hybrid electric vehicles (PHEVs), and \$2,000 for used ZEVs and PHEVs, available at the point of sale (which has been shown to optimize the appeal of rebates for low- and moderate-income customers). To help decrease overall vehicle miles traveled, and serve the needs of those who may not need a car, we also recommend that this program offer a \$300 rebate for purchasing an electric bicycle or scooter.
- Establish an Equitable Electrification Fund** to aid electrification of school buses by 2030, transit buses by 2035, light-duty municipal vehicles by 2030, medium-duty vehicles by 2035 and heavy-duty vehicles by 2040, and ensure all new vehicles sold are fully electric by 2040. The fund would prioritize its support of this transition in low-income jurisdictions, communities of color, and areas of low air quality and public health challenges.
- Adopt the Low Emission Vehicles (LEV) provisions** of California's Advanced Clean Cars Program, as Maryland, the District of Columbia, and 12 other states have done pursuant to the authority in Section 177 of the federal Clean Air Act, and as was proposed in the 2020 General Assembly (HB577 – Keam).
- Adopt Zero Emissions Vehicle (ZEV) rules**, as have the ten states of the Multi-State ZEV Task Force, that require manufacturers to sell an increasing number of electric and hybrid vehicles.
- Shift highway funds away from building new roads**, and toward a “fix it first” approach of maintaining roads and bridges, along with a higher percentage of funds going to public transit projects such as electrification.
- Explore other incentives to accelerate EV adoption** in Virginia, such as removing the Highway Use Fee for EVs; waiving sales tax and personal property tax on EVs; allowing one-person HOV/HOT lane use; establishing a rebate for charging infrastructure; building and incentivizing public and private EV infrastructure, including charging networks and reserved EV parking/charging spots, and letting localities pass ordinances doing so as well; and revising building codes to require “EV-ready” wiring for residential and commercial construction.

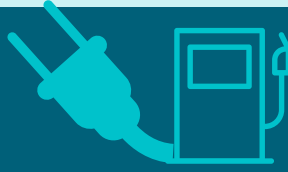
• **Join the Multi-State Medium- and Heavy-Duty Zero-Emission Vehicle Memorandum of Understanding** signed in July 2020 by 15 states and the District of Columbia, to speed the adoption of electric medium- and heavy-duty trucks and other vehicles, with a goal that by 2050, 100% of all new medium- and heavy-duty vehicles sold are zero-emission vehicles, with an interim target that by 2030, 30% of such vehicles sold are zero-emission.

• **Phase out any subsidies or other incentives for fossil fuel use**, to help incentivize a greener electric grid.

• **Promote the extension of broadband to every community in the Commonwealth.**

Broadband – robust, reliable high-speed internet service – facilitates distance learning, medical consultations, and business activity, and reduces the number of vehicle miles traveled. Areas without broadband have fewer opportunities, and cannot attract new businesses. For the health and well-being of all its citizens, Virginia should establish a Broadband Office to study and implement successful initiatives that have been taken by other states, and to remove any barriers to broadband, for example by allowing municipalities to create their own internet service providers.

Accelerating EV Adoption



Transportation produces nearly half of Virginia's greenhouse gas (GHG) emissions and other pollutants. To help solve the climate crisis and improve public health, we need a rapid transition to electric vehicles (EVs), which are much cleaner (with no direct emissions, and total life-cycle emissions that decrease as electrical generation shifts to more renewable sources). Fairfax County currently lags many other jurisdictions in the DC area and nationwide in transitioning to EVs, but it can choose to become a regional and national leader.



FACS urges Fairfax County to become a leader in the EV transition, by pursuing these five key strategies:

- **Initiate a pilot project to begin the transition to electric transit buses.**

Washington, D.C. now has 14 battery-electric transit buses on its DC Circulator system, Alexandria has plans for six battery-electric transit buses, and the Sierra Club and allies – including FACS – are calling on the Washington Metropolitan Area Transit Authority (WMATA) to electrify its more than 1,500 public transit buses by 2045. Beyond their climate and public-health benefits, electric buses offer the financial benefits of much lower maintenance costs and fuel costs. An electric bus can save \$400,000 in lifetime fuel expenses and \$125,000 in lower maintenance. FACS urges the County to:

- **Pursue a Federal Transit Administration (FTA) Low- or No-Emission Vehicle Program grant.** In June 2020, \$130 million was awarded for bus projects in 40 states, but none of that money came to Virginia.

- **Pursue a Virginia Department of Rail and Public Transportation (DRPT) Making Efficient and Responsible Investments in Transit (MERIT) grant for capital improvement projects.**

- **Support the Sierra Club's campaign urging WMATA to electrify its fleet of buses by 2045.**

•Purchase only electric passenger vehicles for the county.

Alexandria's 2020 budget funds the purchase of only electric or hybrid gas/electric general-purpose sedans, as well as a pilot program to test the feasibility of electric and hybrid police cruisers and facilitate electric vehicle charging infrastructure for public and private vehicles across the city. Given the fiscal, public-health, and environmental benefits of EVs, Fairfax County should commit to purchasing only electric passenger vehicles. EVs produce less than half the GHG emissions of gasoline or diesel vehicles (an advantage that will grow as the grid becomes greener), they cost less than half as much per mile to drive, and they have much lower servicing costs. FACS urges the County to:

- Purchase only electric passenger vehicles, for their fiscal, public-health, and environmental benefits.

•Aggressively increase EV charging infrastructure at county facilities.

Fairfax County plans to install EV charging stations at up to 20 county facilities in the next two years, a good start that needs to be dramatically accelerated. FACS urges the County to:

- Install at least "level 2" (240V) EV charging stations at all public-facing county facilities, including government centers, libraries, recreation centers, as well as at high schools, with clear signage.

•Require EV charging capability for all new building projects county-wide. In Atlanta, 20% of new parking spaces in multifamily and commercial parking structures must be EV ready, in physical space, wiring, and electrical capacity. With a dramatic increase in EV drivers expected, all new commercial and residential construction should be EV ready. FACS urges the County to:

- Adopt building codes that require EV readiness for all new building projects.

•Advocate for expanded EV infrastructure county-wide. To increase EV adoption, and its public-health and environmental benefits for all County residents, the County should publicly advocate for expanded EV charging facilities at businesses, workplaces, and houses of worship, and patronize businesses that provide EV charging. FACS urges the County to:

- Advocate for increased EV infrastructure county-wide, and patronize businesses that support EV use.



Converting to Electric School Buses



Fairfax County has made progress toward acquiring electric school buses (ESBs) over the past year. Fairfax County Public Schools (FCPS) will receive eight Thomas Jouley ESBs in the first (pilot) phase of the Dominion Energy ESB program, perhaps by late summer 2020. Under this program, Dominion pays the difference between the cost of an ESB and a diesel bus, and FCPS pays the rest.

However, these buses will probably not enter into service until January 2021. The agreement between Dominion and Fairfax County was only recently signed, and no work on charging infrastructure could begin until then. And installing that infrastructure may take some time, since it will presumably include DC fast charging with Vehicle to Grid (V2G) capabilities so that stored electricity can be sent to the grid during peak demand times when the buses are idle. Also, the “virtual” start of school means the new buses will not transport students for some time (though they may distribute school meals).

In addition, FCPS will have a learning curve with regard to ESBs. FCPS Director of Transportation Francine Furby said at a July 1, 2020 meeting of the Joint Environmental Taskforce (JET) that she would prefer to have the initial operation of the Dominion ESBs be reserved for FCPS staff (drivers and operations/maintenance personnel) to be trained on and become accustomed to the operation of ESBs.

To facilitate the transition to ESBs, FACS urges Fairfax County Public Schools (FCPS) to

- Purchase no more new diesel school buses.** FCPS has approximately 1600 buses, and a diesel bus’s lifespan is about 15 years. Thus, on average FCPS needs to acquire some 100 new buses each year. Because of the long useful life of school buses, and the need to transition to ESBs, no new diesel buses should be acquired. FCPS should only purchase ESBs, even if that means older diesel buses remain in service for a year or two longer.

- Prepare a strategic plan for transitioning to a 100% Electric School Bus fleet by 2030.**

Complete replacement of current FCPS school buses by ESBs will be a very complex and challenging undertaking. FCPS should develop a strategic plan for electrifying its school bus fleet that includes ESB acquisition and financing options; charging infrastructure alternatives and other infrastructure upgrades; route prioritization based on ESB capabilities; requirements for upgrading Dominion’s grid capacity; identification of training requirements for FCPS professional, mechanics, and bus drivers; and a variety of other factors. These feasibility studies should be based on the total cost of ownership and should factor in the economic and social costs of carbon. Because of the complexity of this undertaking, FCPS should contract with a very experienced consulting firm that specializes in transitioning to electric bus fleets.



•**Pursue ESB acquisition strategies beyond the Dominion program.** If FCPS is to quickly transition to an all-ESB fleet, participation in the Dominion program will not be sufficient. And reliance on the Dominion model may have other drawbacks. The Dominion ESB program is a three-phase program that Dominion says requires a legislative determination that it is in the “public interest” to pursue the second and third phases, which means Dominion would be guaranteed a return on equity for its ESB investments. It would also benefit from selling electricity to FCPS to charge the school buses, and by having the parked ESBs as a ready source of stored electricity to help meet peak power demand, especially during the summer when there is high air conditioner use. Therefore, under this model, Dominion will choose the geographical allocation of ESBs as a function of its projected need for electricity storage capacity, not in response to where the buses are most needed.

In the ongoing phase 1, Dominion purchased 50 ESBs for allocation within its service area, with FCPS receiving 16% of that initial allocation. Phase 2 would bring at least 1000 additional ESBs online by 2025 in Dominion’s service area, and phase 3 would “set the goal to have 50 percent of all diesel bus replacements in Dominion Energy’s footprint by electric by 2025 and 100 percent by 2030.” If FCPS receives the same percentage of ESBs in Dominion’s phase 2 as in phase 1, it would receive a total of 160 ESBs between 2021 and 2025.

However, even if the Dominion ESB program moves forward as proposed, FCPS would still need 340 more ESBs by 2025 to meet its transition objective. Furthermore, the path forward for phase 3 of Dominion’s ESB program is unclear. It seems aspirational rather than reflecting a firm commitment on the part of Dominion.

•**Identify other mechanisms and funding sources to finance the additional upfront costs of ESBs and of installation of charging infrastructure.** These may include:

•**Sources of funding beyond the Dominion program.** Potential sources such as Volkswagen Settlement funding (\$20 million for the entire Commonwealth in 2020), and perhaps some federal grant programs, are likely to cover only a tiny percentage of FCPS needs for replacement ESBs. In future years more VW Settlement funds may become available for ESBs – \$40 million remains to be allocated in Virginia.

•**Utilization of V2G opportunities.** Vehicle to Grid (V2G) capabilities may help defray up-front battery costs outside the Dominion program. Possible “clients” for V2G energy include Dominion Energy and PJM, the regional grid serving Virginia and a dozen other states. This program could be implemented like a solar power purchase agreement (PPA). A commercial third party could acquire the ESB batteries, install V2G charging infrastructure, and lease the batteries to FCPS, while selling electricity from the batteries to meet peak demand when the ESBs are parked, to Dominion or PJM. The feasibility of this approach would need to be studied, but the sale of electricity from the batteries during periods of high electricity demand could sufficiently reduce the cost to FCPS that when combined with the reduced fuel and maintenance costs of ESBs, the lifecycle cost of ESBs would be substantially lower than that of new diesel buses.

•**Funding as a result of future legislative action at the state or federal level.** Other sources of grant funds may become available in future years, especially if there is a new administration at the federal level and a Democratic Senate. It is possible that any new stimulus package to reactivate the economy may have substantial funding for electrification of transportation/transit. Also, the Biden/Sanders Unity Task Force proposes to “transition the entire [U.S.] fleet of 500,000 school buses to American-made zero emission alternatives within five years.” While this is undoubtedly an aspirational goal, it does likely signal that a new administration would make a substantial effort to achieve electrification of ESBs over the near-term.

•**The FAST Act of 2015 implemented by the Federal Transit Administration.** Grant funds can be used for capital leases, specifically for zero emission vehicle components like batteries for electric transit buses. That is, grantees are eligible to purchase a removable power source such as batteries separately through a capital lease, so the removable power source is not included as part of the overall cost of the vehicle. PROTERRA, a major supplier of electric transit buses, has a \$200 million credit facility under this program. This authority does not now apply to ESBs, but with future legislative action, it might. PROTERRA supplies the batteries for the Thomas Jouley ESBs.

•**The possible use of the capital lease concept without obtaining grant funding.** This is worth exploring.

•**Funding from a Clean School Bus Grant Program.** State Del. Mark Keam is likely to reintroduce [HB1140](#) to establish a Clean School Bus Grant Program that would award grants on a competitive basis to school boards for (a) replacement of diesel school buses with ESBs (with a goal of complete replacement of diesel buses with ESBs by 2030, (b) installation of charging (and related) infrastructure, and (c) workforce development and training to support the maintenance, charging, and operations of ESBs.

•**Hire a specialized consulting firm to conduct economic, financial, and technical analyses and develop a strategic plan for the ESB transition.**

Attaining Net Zero Schools



Fairfax County Public Schools (FCPS) spends about \$42 million annually on its electric, oil, gas, and water utilities. There is strong interest by the School Board (and by local environmental groups including FACS) in making FCPS schools more energy efficient. Since FY 2014, an FCPS program of energy management, conservation, and educational services has focused on changing behavior, to optimize the efficiency of energy-using systems and equipment. From 2013 to 2018 FCPS saved more than \$25 million in energy, reducing total energy use by 15%. From 2008 to 2018 FCPS reduced annual greenhouse gas (GHG) pollution by 64.4 million tons of carbon dioxide equivalent (CO₂e), a cumulative reduction of 339 million tons of CO₂e over the 10-year period.

Even with these notable successes, major opportunities exist to further reduce energy usage and GHG emissions, as FCPS works toward a goal of “Net Zero Schools” that annually generate as much energy as they use. A February 6, 2020 unanimous resolution of the Fairfax County School Board supported this perspective, directing FCPS to:

1. Identify how FCPS can adopt best practices in energy and resource stewardship in facility design. FCPS staff will prepare for a School Board work session to examine:

a. Net Zero design. FCPS will identify where the division currently is on any factors that lead towards Net Zero ready; and recommend pathways and associated costs and time to obtain 20-25 Energy Usage Intensity (EUI) per facility, which is a measure of a building’s energy per square foot. Net Zero design and building specifications will provide a superior energy efficient building resulting in lower operating costs over the life of the school compared to the existing specifications. Furthermore, Net Zero buildings can be teaching tools and community examples about the benefits and necessity of energy efficiencies and renewable energy technologies.

b. Electrification planning. Present an approach for how FCPS can incorporate the principle of electrification (moving away from fossil-fueled components like heating and cooling), to prepare for the future availability of such technology.

c. Circular Economy Practices. Present an approach for FCPS can incorporate practices that plan for how future builds and renovations will be disposed of when their lifetime ends.

2. Develop an Operations Energy Strategy. Develop a plan that identifies metrics, timeline, and staff responsibilities for measuring energy use; includes annual goals for energy use; and establishes a regular timeline for reporting to the School Board.¹

² The School Board’s resolution also included measures that are less directly related to energy use, concerning regular certification by the Collaborative for High Performance Schools (CHPS), which says it “believes kids learn better in schools with good lighting, clean air, and comfortable classrooms.” Note also that the EUI figures used here are all “site EUI,” which tracks on-site energy use (in thousands of BTUs per square foot per year, kBtu/sqft); “source EUI” adds in the additional energy used in generation and transmission.



FACS urges FCPS to:

- **Treat the request by the School Board for an “operational energy strategy” as a challenge.** In 2018 Fairfax County adopted an Operational Energy Strategy for its facilities (not including schools) with a goal of a 20% EUI reduction by 2030. We urge FCPS to develop and implement an operational energy strategy that sets a more ambitious EUI reduction target of at least 30% by 2030. The FCPS “Get2Green” website says “FCPS is enhancing its energy conservation efforts over the next 5–10 years to reduce energy by 20–30%” – even though it projects an increase in square footage and student enrollment. This suggests a 30% reduction in EUI over 10 years is quite feasible. The “Get2Green” website says the average EUI is now 58, so a 30% reduction by 2030 would reduce the average to 40.6.

- **Work to achieve Net Zero energy use in new school construction and renovation.** FY2021–25 planned construction expenditures total \$2,602,000, of which \$1,022,000 has been funded. In addition to on-going school construction and renovation projects, the Capital Improvement Plan identifies FY2022 funding for construction of a new elementary school and renovation of a high school and five elementary schools. For these new schools and renovations and for all subsequent years, we urge FCPS to design them to achieve net zero energy use. Reaching net zero will require not just high energy efficiency – a useful target would be an EUI of no more than 20-25 kBtu/sqft, as contemplated by the School Board’s resolution – but installation of solar panels, during construction or through a Power Purchase Agreement (PPA) after finishing construction.

- **Aggressively pursue cost-effective energy use reduction in existing buildings,** including schools that will not be remodeled in the near future. School Board policy envisions a 20- to 25-year building renovation cycle for schools, but the actual renovation cycle is 37.5 years. FCPS cannot postpone energy efficiency improvements until buildings are renovated, because most schools will not be renovated in the next 10 years. However, two types of energy efficiency measures can be undertaken in virtually all FCPS buildings in the next 10 years:

- Highly cost-effective upgrades to existing schools that “tighten the envelope,” such as by adding better insulation and passive solar shading. These measures can be undertaken without delay; they are long-lasting; and have a significant impact, saving money and reducing the load on HVAC systems.
- Replacement of HVAC systems, i.e. boilers, air cooled chillers, rooftop HVAC units and VRF HVAC systems. These mechanical assets have a useful life of between 15 and 25 years and may need substantial repairs as they age. They can be replaced with systems that have much better energy efficiency.

The FCPS Facilities Planning Advisory Council’s (FPAC) most recent annual report (2018–2019 school year) recommends use of an Energy Savings Performance Contract (ESPC), by which a third-party energy services company (ESCO) would install energy-efficient equipment or other upgrades, and FCPS would pay back the initial capital outlay over time from the energy cost savings the new equipment brings. ESPCs could be used to bundle envelope tightening measures with HVAC measures to create cost-effective packages. There may also be other “portfolio” approaches in which groups of schools are bundled together into contractable packages.

To implement the net zero/energy efficiency program strategically and effectively, FCPS may need to revise certain policies and regulations for facilities services; if so, we believe such revisions should be prioritized.



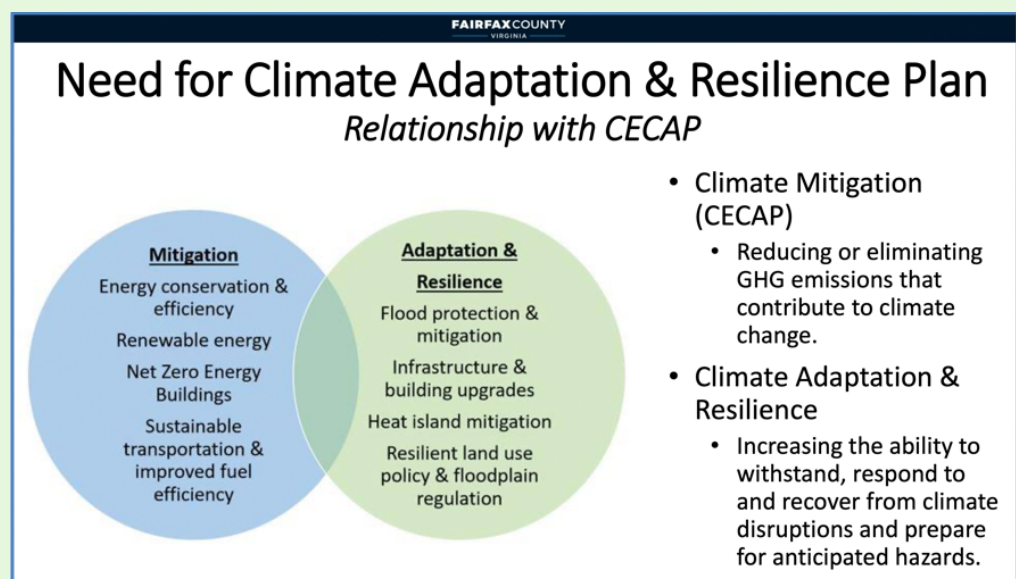
Creating a Strong Climate Resilience Plan

Climate adaptation involves reacting to climate change effects that are already under way, such as sea-level rise that causes sunny-day flooding. Climate resilience refers to withstanding climate challenges and becoming better prepared for future climate impacts. 1 Climate resilience planning, as described by Kambiz Agazi, Director of the Fairfax County Office of Environmental and Energy Coordination (OEEC), means “increasing the ability to withstand, respond to and recover from climate disruptions and prepare for anticipated hazards.” 2

Proactive resilience planning can save money as well. Charlotte, NC has spent \$64 million buying out property owners in flood plains, and expects to save \$300 million in avoided emergency rescues and stormwater services – just from the homes already purchased.

On May 6, 2020, Fairfax County Executive Bryan Hill reported to the Board of Supervisors on their request that staff develop a “Climate Adaptation and Resilience Plan” (CARP). His memo analyzed the importance of having a plan, its initial costs, the process to be followed, and the associated time line.

On June 16, 2020, OEEC Director Agazi gave a presentation to the Board’s Environmental Committee on CARP as an action item, and showing its relationship to the County’s existing mitigation plan, the Community-wide Energy and Climate Action Plan (CECAP). Funded in 2019, CECAP is now in the early phase of developing a county-wide mitigation plan, whose goal is to reduce County greenhouse gas emissions to zero by no later than 2050.



On July 28, 2020, Mr. Hill presented to the Board a Carryover Budget requesting \$1 million for CARP, with oversight handled by OEEC. The \$1 million budget figure would allow OEEC to hire a Division Manager, Climate and Resiliency Services, and a Senior Community Specialist, with \$640,000 for contractual support to develop CARP. The plan would be implemented in conjunction with the Metropolitan Washington Council of Governments (MWCOG) Climate Adaptation and Resiliency Plan, thereby saving Fairfax County contracting dollars and time, and allowing it to work in coordination with its neighboring jurisdictions. If this plan is approved, the CARP is projected to be operational by June 2022. If the County were to proceed on its own in contracting and developing CARP, a slower and more costly process, the earliest project completion for CARP is projected to be June 2024.

Both Mr. Hill and Mr. Agazi have stressed that CECAP (focused on mitigation) and CARP (focused on adaptation and resilience) are complementary plans that will mutually strengthen one another, and that both are needed.



FACS therefore urges the Fairfax County Board of Supervisors to:

- Adopt the proposed Climate Action and Resilience Plan (CARP) at its September 29, 2020 meeting.
- Approve \$1,000,000 in funding for CARP, so it can become operational on an accelerated timetable.
- Coordinate with neighboring jurisdictions in implementing CARP, such as through MWCOG.

Establishing a Green Bank



A Green Bank uses innovative financing to accelerate the transition to clean energy and fight climate change. There are 15 Green Banks in the U.S., from Hawaii to Rhode Island, including three in our region: the [DC Green Bank](#), the [Montgomery County Green Bank](#), and the [Climate Access Fund](#) of Baltimore. Several different Green Bank models exist, but all facilitate projects in low- to moderate-income (LMI) communities that otherwise might not receive financing.

Green Banks drive clean energy investment from multiple sources, working with developers, investors, and others to identify projects to finance. They are usually not primary lenders, but insure loans made by credit unions or banks. In addition, they may also offer loans, leases, and other financing services to close funding gaps.

Green banks help markets to grow larger and stronger. They help homeowners, owners of multifamily rentals, small businesses, and renewable energy companies to fund improved energy efficiency, clean-energy installations, and construction of green infrastructure. These investments reduce energy burdens, create healthier living and working environments, foster a more resilient economy, and help achieve greenhouse gas (GHG) reduction goals.

Ultimately, Green Banks create jobs, since installing a solar panel or upgrading the efficiency of a building means hiring labor – and most of these jobs don't need advanced degrees. A solar panel installer or construction worker upgrading the energy efficiency of homes and businesses can be a young person seeking a first job, a laid-off low-income worker, or a person of color looking for a leg up. This directly fits into the County's vision of One Fairfax.

These projects can also hasten achievement of the goals of the Community-wide Energy and Climate Action Plan (CECAP) now in development, and the proposed County-wide Climate Adaptation and Resilience Plan (CARP).



FACS urges Fairfax County to:

- **Establish a Green Bank** to facilitate sustainability projects, reduce GHG pollution, and create jobs. The Governor signed landmark clean energy legislation this year, but that did not in and of itself create a market for renewable energy, energy efficiency, or green infrastructure development in Fairfax County – especially in low-income communities. Other states and localities have faced similar problems, which is why 15 Green Banks have been created in the U.S. over the last decade, as well as in other nations, such as Japan, Australia, and Great Britain, which used a Green Bank to jump start its thriving offshore wind energy industry.

Green Banks are market expanding. They do not compete with other banks but serve as market catalysts. They help identify viable projects that need funding and encourage private capital to finance a growing market. Green Banks give lending institutions the confidence to move forward, funding projects that create jobs, open up widespread opportunities, and foster a healthier and more sustainable environment.

•**Collaborate with the Coalition for Green Capital (CGC).** CGC is a nonprofit that works with governments at all levels to determine how best to set up a Green Bank. Whether public, quasi-public, or an independent nonprofit, a Green Bank needs a minimum of \$3 to \$4 million to be viable. Governments guide the creation of Green Banks and often participate in their governance through board memberships. The American Green Bank Consortium, a project of CGC launched in 2019, serves as an incubator and information exchange for the rapidly growing and maturing green bank community in the United States, as reflected in its annual report.

•**Consult on lessons learned and best practices.** The County can compare notes locally – with Green Banks in DC, Montgomery County, and Baltimore – as well as with initiatives around the country. For example:

- The Solar and Energy Loan Fund (SELF) in St. Lucie County, Florida, used a \$2.9 million award in June 2010 from the U.S. Dept. of Energy's Energy Efficiency Block Grant Program to kick-start pilot loan programs for low and moderate-income homeowners. It began making loans in 2011 and has expanded statewide. SELF is a nonprofit offering energy expertise and favorable financing to help property owners identify and fund cost-effective home energy retrofits, such as for energy conservation and renewable energy alternatives. Its clients use the money saved by reducing their energy consumption to help pay off the loans over time.

- The New York City Energy Efficiency Corporation and the Rhode Island Infrastructure Bank were both established with federal funds from the American Recovery and Reinvestment Act of 2009.

- The Climate Access Fund of Baltimore (CAF), a nonprofit begun in 2017, helps reduce energy costs for low-income households in Maryland by facilitating access to community solar power. Residential solar power in Maryland had been limited to homeowners who could pay the upfront costs of installing rooftop solar. Maryland's newly launched community solar pilot program created an opportunity for renters and low-income households to save money by buying solar that is not generated on their rooftops. The state's community solar regulation requires reserving at least 30% of the program's solar power for LMI residents, but failed to account for a key market gap: traditional solar investors were typically unwilling to take risks on the creditworthiness of low-income consumers, particularly on smaller projects. By addressing this credit gap, CAF is helping establish a smaller-scale low-income market. CAF identifies potential community solar sites, builds the necessary community-based partnerships, and offers financial incentives to solar developers who can provide sufficient savings to low-income participants, so that everyone benefits.

- The DC Green Bank began in July 2018 with an initial \$100 million in funds from the District of Columbia government. In Spring 2020, it hired a CEO and completed its first transaction. The DC Green Bank leverages its "public purpose funding" to attract private capital to create jobs, spur economic growth, and meet the District's sustainability and resilience goals. District residents can use funds for roof repairs, insulation, new windows, solar panels, or upgraded HVAC equipment. The DC Green Bank's low interest rates and speedy credit approval allow LMI residents and businesses to carry out necessary projects they might have put off. Energy improvements done to a home or business increase property values, save money on monthly utility bills, and improve comfort and safety. Contractors can offer Green Bank financing to customers, which helps lower the barrier to customer adoption, and expands the contractor's business as energy projects become easier and more affordable.

•The Montgomery County Green Bank in Maryland, an independent nonprofit established in June 2015 with \$14 million from the Pepco-Exelon merger, supports the county's goal of reducing GHG pollution. In February 2020, it launched two credit unions that make residential loans in the \$5,000-\$30,000 range. It offers a number of programs to serve county businesses and homeowners, from commercial solar power purchase agreements (PPAs) to small business relief energy savings support, loans for multifamily rentals, common ownership, and nonprofits, and even free home energy check-ups for prospective renters.

•**Develop a communication plan for LMI communities.** The Yale School of the Environment, with seven other organizations, has published a guidebook on strategies and messages that explains the challenges and opportunities of bringing renewable power to LMI communities. These communities respond strongly to communications related to helping neighbors take action to reduce their energy burden. Development of a well-conceived communications strategy will be important to the success of a County Green Bank.

• **Approve \$1,000,000 to fund the proposed County-wide Climate Adaptation and Resiliency Plan** and include creation of a County Green Bank as a component of the plan.

The establishment of a Green Bank by Fairfax County can help the public health, the economic growth, the shared prosperity, and the climate resilience of the County in a myriad of ways, as it helps speed the transition to a clean-energy economy that will improve the County for all its residents, now and into the future. The time to act is now.

Breaking Down Barriers to Small-Scale Solar



The newly enacted “[Solar Freedom](#)” legislation and [Virginia Clean Economy Act \(VCEA\)](#) removed many existing impediments to small-scale solar energy generation, from rooftops and parking lots to landfills. But to maximize the ability of this “distributed” generation to help build a clean-energy economy, more work is needed.

Typically, electricity is generated in large centralized plants. Distributed generation is decentralized, occurs closer to the end user, reduces the need for new utility plants, and increases grid resilience. It helps decarbonize the grid, cuts greenhouse gas emissions, saves money, and [creates jobs](#). “Net metering” gives small-scale generators credit for solar energy sent to the grid. “Aggregated” net metering, however, for customers with buildings on non-contiguous parcels, is not yet allowed. Unfortunately, many customers cannot afford, or obtain financing for, solar installations, even though rooftop solar alone could produce a [third or more](#) of Virginia’s electric demand.

Background

The VCEA created a Renewable-energy Portfolio Standard (RPS) with goals for how much renewable energy is sold to customers by the affected utilities, Appalachian Power Co. and Dominion. Under the RPS program, the utilities must buy and retire Renewable Energy Certificates (RECs – also called Renewable Energy Credits) from eligible sources. Dominion’s RPS starts in 2021 at 14% of total energy sold, and increases to 100% in 2045.

As the VCEA is now structured, however, utilities can primarily buy RECs from large-scale projects. A small set-aside for distributed generation requires 1% of the renewable energy for that year to come from sources that each generate no more than 1 megawatt (MW), but in addition to solar and wind, this provision includes anaerobic generation – and Dominion has a [contract](#) with Smithfield Foods to generate electricity from anaerobic digestion of pig waste, so it will probably not need to buy any RECs from small-scale solar generators.

Moving Forward

As Virginia moves toward a zero-carbon economy, small-scale solar must be a priority. To achieve this, the General Assembly should ensure that distributed solar becomes a meaningful part of the utilities’ renewable-energy requirements. It should provide incentives for customers to install on-site solar (and solar-plus-battery-storage, for resilience). And it should make sure that solar energy’s benefits are available to all Virginians.

To do this, renewable energy credits need to focus on solar and wind. And there should be consumer incentives like tax credits and rebates on solar installation costs, low-interest loans, and the option of “residential property assessed clean energy” (R-PACE) loans that are assessed on the property, and “convey” if the property is sold.

Lower-income and minority customers must not be left out of the solar economy. One option is a "Pay As You Save" (PAYS) program, where a utility pays to install rooftop solar (or energy efficiency upgrades), and adds a tariff non the utility bill for that site until the costs are paid off. Another option is "community solar" programs that allow distributing solar energy to nearby properties, so that more people can benefit from solar. Another is the Clean Energy Advisory Board's pilot program, the "Low-to-Moderate Income Solar Loan and Rebate Fund."



FACS encourages the adoption of state legislation that will:

- Incentivize the growth of small-scale solar in communities across the Commonwealth, by incentives such as tax credits, rebates, low-interest loans, R-PACE financing, and PAYS financing, and by taking steps to ensure that financing is extended to those who may currently lack access to cost-effective financing, such as by the programs of the Clean Energy Advisory Board.
- Increase the required percentage of the Renewable Portfolio Standard (RPS) that must come from small-scale renewable energy projects, from 1% to no less than 10%, and limit the eligible sources to solar and wind.
- Incentivize the installation of solar-plus-battery-storage for buildings that may serve as "resilience hubs," especially in low-income areas, during widespread grid outages due to major storms or other causes.
- Allow aggregated net metering for residential, business, and agriculture customers with non-contiguous sites.
- Expand community solar programs, to allow more people to benefit from solar, including those who don't own their homes, and to allow competition from independent solar providers to help drive down costs.
- Direct the State Corporation Commission to require a rate structure (such as by making fixed charges a lower proportion of the bill) that serves to encourage conservation and use of distributed renewable generation.

