



# OUR COMMON AGENDA

**2022 ENVIRONMENTAL BRIEFING BOOK**

*a publication of Virginia Conservation Network*





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## ABOUT VCN

Founded as the Conservation Council of Virginia in 1969, Virginia Conservation Network (VCN) began as a roundtable of major conservation groups and has grown to include over 150 Network Partners across the Commonwealth. VCN is committed to building a powerful, diverse, and highly-coordinated conservation movement focused on protecting our Commonwealth's natural resources.

VCN is a facilitator of strategic action, a resource for Network Partners statewide, and a constant conservation presence in Virginia's Capitol. Playing a unique role in Virginia's conservation community, VCN helps the community speak with one coordinated voice. The organization and its staff focus on strengthening the conservation community as a whole and winning environmental victories that benefit all Virginians.

VCN's Network Partners work on a wide range of issues from stream restoration, to transportation reform, to renewable energy advancement, to promoting sustainable community growth, to environmental justice and more. Given the diverse work of our partner organizations, VCN organizes its programs into four main categories: **HEALTHY RIVERS, CLEAN ENERGY AND CLIMATE, LAND CONSERVATION, and LAND USE AND TRANSPORTATION.**

*VCN is proud to serve as the state lead for the Choose Clean Water Coalition — the regional coalition advocating for clean rivers and streams in communities throughout the Chesapeake Bay Watershed, — as the Virginia state affiliate for the National Wildlife Federation, as a member of the Virginia Environmental Justice Collaborative.*





Breaks Interstate Park  
Image credit: David Petersen

# OUR COMMON AGENDA

## A MESSAGE FROM THE EXECUTIVE DIRECTOR

Thank you for opening up a copy of Our 2022 Common Agenda.

Our Common Agenda is your road map for state-based policy solutions to address the environmental problems facing our Commonwealth. A collection of papers written by, vetted through, and voted on by our 150+ Network Partners, this book is an educational tool for policy makers and conservation advocates alike. Our authors ground their research and findings in science and present practical policy solutions that are equitable for all Virginians.

Over the last few years Virginia has made major bi-partisan progress to protect our Commonwealth's natural resources: committing to a 100% clean electricity grid, phasing out polystyrene (aka styrofoam) takeout food containers, defining environmental justice in the state code, establishing a wildlife corridor plan, creating a plan to clean up toxic coal ash ponds, making historic investments in our Chesapeake Bay cleanup plan, and much more.

As you read through the policy ideas in this year's Common Agenda, you'll see a focus on building equitable communities as a key strategy for reducing carbon pollution, protecting our landscapes, and ensuring clean water for all. This includes policy solutions to increase access to hiking and biking trails, local food, rooftop solar, public transportation, and more.

These are just a few highlights from this year's Common Agenda briefing book. As a partnership of 150+ conservation organizations, we believe that if we work together to solve Virginia's biggest environmental problems we'll leave the Commonwealth better than we found it for the next generation. I'm looking forward to working with you on whichever topic or topics interests you the most. Feel free to reach out to me, my team, or any of the authors in this book for more information.



Mary Rafferty  
Executive Director





## 2022 OUR COMMON AGENDA PHOTO CONTEST WINNER

Due to the success of our 2021 photo contest, we increased our prize money and invited the public to vote on their favorite photos for the 2022 *Our Common Agenda* photo contest in an effort to further involve the conservation community in the crafting of the publication. With more than 500 submissions from 63 photographers, the competition generated spectacular images from across the Commonwealth. This year's contest winner is **Lori A Cash** of Hampton, Va for her photo *Red Fox Kit*. The picture was taken at Fort Monroe National Monument as the young fox kit explored a grassy field on an early spring morning.

Lori A Cash is an award-winning wildlife and nature conservation photographer who has over thirty years' experience photographing wildlife and nature. Lori has always had a love for the natural world, which has brought her into the realm of conservation photography and visual storytelling. Lori resides and primarily photographs in the Hampton Roads area, yet her conservation efforts expand throughout Virginia. Through her conservation storytelling and photography, Lori strives to inspire and educate others about the beauty of the natural world and to advocate for the protection of our environment and wildlife.

Lori's conservation photography and storytelling can be found at her website at [loriacash.com](http://loriacash.com).

## HOW THE BRIEFING BOOK GETS DRAFTED

*Our Common Agenda* briefing book is written by, vetted through, and voted on by VCN's 150 Network Partners. Here's our process for crafting our shared policy agenda:

### NETWORK PARTNERS PARTICIPATE IN REGIONAL LISTENING SESSIONS

Each spring, VCN hosts regional listening sessions to brief local and regional partners on what environmental policies passed and failed during the General Assembly session. This is the first opportunity for our network of more than 150 partners to highlight what local and regional conservation policy opportunities they would like prioritized in the future.

### ISSUE WORKGROUPS HOST ANNUAL MEETINGS

With the ideas generated from the regional listening sessions, VCN's issue workgroups (Clean Water, Clean Energy & Climate, Land Conservation, and Land Use & Transportation) discuss the feasibility of policy recommendations and decide which issues should be covered in the Briefing Book. During this process, authors of each policy paper are also selected.

### AUTHORS PUT PEN TO PAPER

The collaborative process is truly on display while co-authors craft their policy papers. Generally, anywhere from 2-4 authors work on each briefing paper and consult with VCN staff to ensure that each paper reflects policy recommendations that are both attainable and effective.

### ISSUE WORKGROUPS CONDUCT EXTENSIVE REVIEWS

Once the briefing papers have been reviewed by the Environmental Justice Review Committee, VCN's issue workgroups review all of the papers, incorporating feedback to make stronger arguments or more effective policy recommendations. By the time white papers have been fully reviewed and finalized, they are read by at least 5-10 experts in the topic's field.

### ENVIRONMENTAL JUSTICE REVIEW COMMITTEE WORKS TO ENSURE POLICIES ARE EQUITABLE

In order to avoid policy recommendations that may have an adverse impact on environmental justice communities - specifically low income communities, communities of color, and rural communities - a team of Network Partners serves on the Environmental Justice Review Committee. The committee reviews all briefing paper drafts to ensure that policies won't have unintended consequences and looks for opportunities where policies can lift up historically marginalized communities. Recommendations offered by the EJ Review Team are considered by the co-authors and integrated to the best of their collective ability.

### VCN LEGISLATIVE COMMITTEE VOTES ON POLICY RECOMMENDATIONS

Our legislative committee is made up of partners from each of our workgroups who have experience working policies in Richmond. This is an opportunity to break down the silos between workgroups - energy experts review water papers, land conservation experts review transportation papers. This helps ensure policies don't unintentionally adversely impact other workgroup issue areas as well as to ensure policies are bold yet attainable. Policy recommendations are voted on by the committee.

### VCN BOARD VOTES ON THE ACCEPTANCE OF EACH PAPER

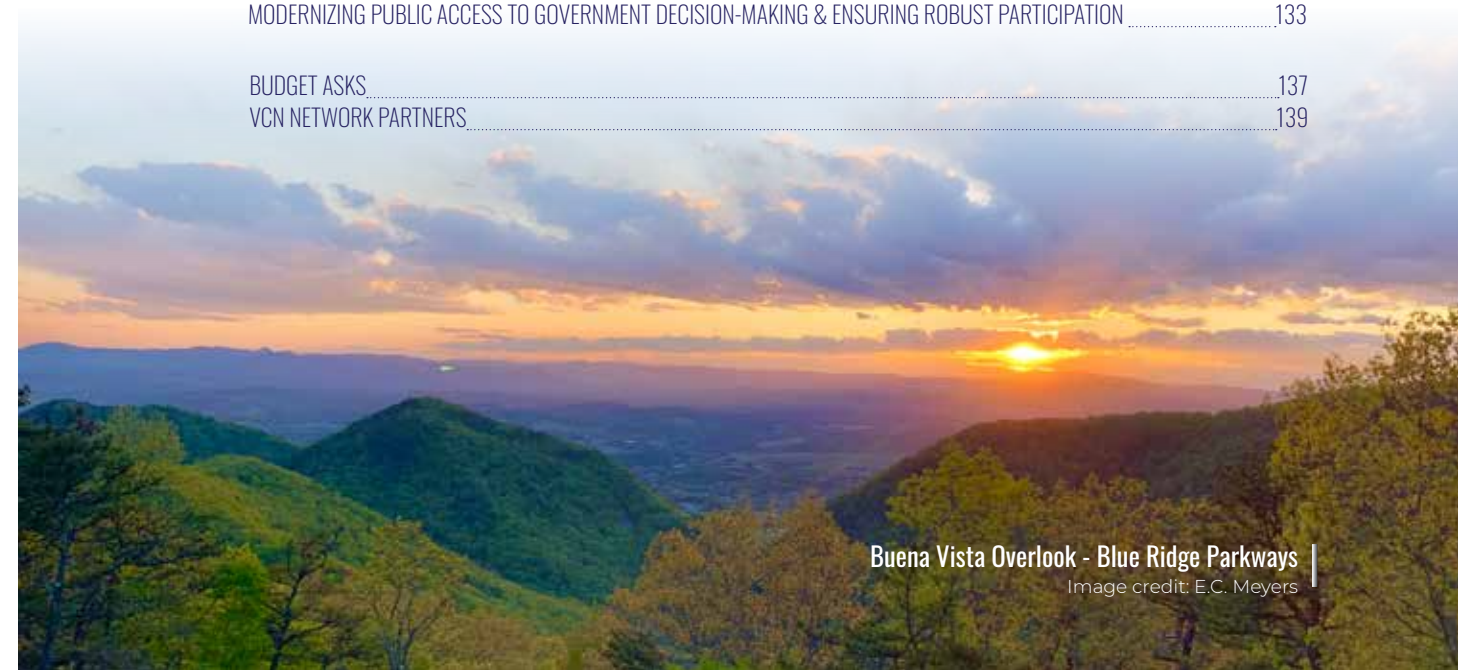
The final step in the journey from a policy idea to a place in *Our Common Agenda* is a vote by VCN's Board of Directors. Each briefing paper is presented to the Board and a vote on its inclusion follows. This final step of the process ensures that topics and policy recommendations are in line with VCN's mission and goals.



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Buena Vista Overlook - Blue Ridge Parkways  
Image credit: E.C. Meyers





# HEALTHY CHESAPEAKE BAY, RIVERS, & CREEKS

The 2025 deadline of the multi-state cleanup plan for the states draining to Chesapeake Bay will occur during the term of Virginia's 74th Governor. To significantly reduce the amount of pollution delivered to our nation's largest estuary, each contributing state's Watershed Implementation Plan (WIP) is designed to accomplish its own set of pollutant reduction goals identified through the Chesapeake Bay Total Maximum Daily Load (TMDL). Virginia has invested tremendous resources toward meeting its goals. However, in order to continue this progress, we must ensure strong and sustained funding for key local and statewide initiatives.

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Lower Appomattox River  
Image credit: Kenneth Newman



# EXECUTIVE SUMMARIES AND CONTACT INFORMATION

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### TACKLING POLLUTED STORMWATER RUNOFF & RESTORING LOCAL WATER QUALITY

Stormwater runoff from urban and suburban areas is the fastest growing source of pollution to our water and the main reason many of our urban streams are impaired. This growth is largely caused by the expansion of our built environment and the impervious surfaces — parking lots, roofs, and roads — that carry more polluted runoff to our waterways. With more intense rainfall events on the horizon as a result of climate change, untreated stormwater may exacerbate dangerous and costly flooding. Virginia's plan to clean up the Chesapeake Bay calls for strong investments in better stormwater control to protect clean water and frontline communities.

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### WORKING WITH FARMERS TO PROTECT OUR RIVERS & STREAMS

Agriculture is Virginia's largest industry by many metrics. It also represents the largest source of nutrient and sediment pollution reaching Virginia's local streams, rivers, and the Chesapeake Bay. Fortunately, addressing these pollution loads offers an opportunity to improve the Commonwealth's natural resources while also enhancing the positive economic impact of agriculture. The Virginia Agricultural Cost Share Program (VACS) funds the implementation of a wide suite of agricultural practices that reduce pollution while enhancing farm productivity. Despite Virginia's recent increases in this program, demand far exceeds available funding.

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### UPGRADING WASTEWATER TREATMENT IN VIRGINIA

Enhanced efforts are needed to upgrade Virginia's wastewater facilities and to address the public health risk of combined sewer overflows from aging wastewater infrastructure. Upgrades to wastewater facilities are a proven strategy for benefiting water quality and reducing large quantities of pollution. Virginia's wastewater agencies have played a major role in reducing nutrient pollution to date, but they have been asked to accelerate this important work in the Phase III Watershed Implementation Plan (Phase III WIP) and through recent legislation requiring upgrades to wastewater treatment and to remaining combined sewer overflow (CSO) systems. Virginia needs to support these programs to continue protecting water quality and public health.

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### REDUCING SINGLE-USE PLASTICS, LITTER, & MARINE DEBRIS IN VIRGINIA

Building on the growing concern and increased willingness to take action to decrease the amount of plastic waste in Virginia's environment, now is the time to craft policies and laws that will keep man-made waste out of Virginia's streams, rivers, and coastal waters. We can do this by eliminating the most harmful types of mismanaged waste, incentivizing sustainable disposal of what we do use, and prioritizing funding to shift to sustainable and reusable products.

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# TACKLING POLLUTED STORMWATER RUNOFF & RESTORING LOCAL WATER QUALITY

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## EXECUTIVE SUMMARY

Stormwater runoff from urban and suburban areas is the fastest growing source of pollution to our water and the main reason many of our urban streams are impaired. This growth is largely caused by the expansion of our built environment and the impervious surfaces — parking lots, roofs, and roads — that carry more polluted runoff to our waterways. With more intense rain-fall events on the horizon as a result of climate change, untreated stormwater may exacerbate dangerous and costly flooding. Virginia's plan to clean up the Chesapeake Bay calls for strong investments in better stormwater control to protect clean water and frontline communities.

## CHALLENGE

Virginians rely on local waterways for clean drinking water, vibrant communities, and strong economies. In fact, three-out-of-four Virginians depend upon healthy headwater streams for their drinking water.<sup>1</sup> Our Commonwealth is the largest seafood producer on the East Coast, with 50 commercially harvested species.<sup>2</sup> Our outdoor recreation industry is booming, providing 197,000 direct jobs and \$1.2 billion in tax revenue.<sup>3</sup>

**75% of Virginians depend upon local, healthy headwater streams for their drinking water.**

Despite our reliance on healthy waterways, polluted runoff — the muddy stew of stormwater, dirt, bacteria, toxins, and plastic waste that runs off streets, parking lots, and other hard surfaces — continues to threaten our local creeks, streams, and rivers. It remains the fastest growing source of pollution to the Chesapeake Bay,<sup>4</sup> undermining Virginia's goal to restore local streams and the Bay by 2025.

Much of our urban and suburban infrastructure was built before we fully understood how stormwater degrades local streams. Now, many larger localities are required to reduce the nutrients and sediment that they contribute to Virginia's waterways. Implementing programs to achieve these reductions — like projects to retrofit older infrastructure — can be expensive. But for years, low income communities have been among the least likely to receive state funding to support this work. Cities and towns, churches and schools, homeowners and developers — everyone has a role to play in keeping nutrient and sediment pollution out of our stormwater. The state can and should encourage pollution reduction practices by providing strong, equitable funding support and protecting our existing stormwater management regulations.

## SOLUTION

### STORMWATER LOCAL ASSISTANCE FUND (SLAF)

To help with expensive stormwater projects, the Virginia General Assembly created the Stormwater Local Assistance Fund (SLAF), a state and local matching grant program to protect and improve the health of our waterways. This fund has recently been improved to provide additional attention to fiscally stressed communities and improving resilience to climate change. Over its lifespan, SLAF has authorized \$95 million in grants for 216 projects across Virginia, and demand for this program continues to grow.<sup>5</sup> In 2019, localities submitted proposals for nearly twice the amount of funding available. Virginia's initial needs assessment for SLAF estimates that the state needs to invest approximately \$80 million annually. The General Assembly provided \$75 million in the most recent two-year budget and substantially bolstered the states ability to address these issues. Still, sustained funding is critical to ensure progress can be sustained.

## VIRGINIA CONSERVATION ASSISTANCE PROGRAM

The Virginia Conservation Assistance Program (VCAP) provides cost-share assistance for smaller-scale residential and commercial projects to improve drainage and reduce erosion such as rain gardens, conservation landscaping, and permeable driveways. Since the program began in 2012, Virginia's Soil and Water Conservation Districts and their partners have installed over 720 projects. However, there are 35 project applications — worth \$173,020 — in a backlog awaiting funding. Last year, the General Assembly included \$1,000,000 to support VCAP projects across the state, but only allotted \$500,000 the year before. Consistent, stable funding is an important part of encouraging property owners to participate.

## POLICY RECOMMENDATIONS

Allocate at least \$80 million each year for the Stormwater Local Assistance Fund to invest in pollution reduction projects and help localities meet their local water quality needs on time.

Provide increased and consistent funding for the Virginia Conservation Assistance Program to restore the creeks and streams our children play in; create habitat for birds, bees, and other pollinators; reduce localized flooding; and protect property values.

Promote resilient communities, smarter growth, and long-lasting restoration efforts water by protecting the Virginia Storm Management Program.



Above Great Falls During Flooding  
Image credit: Roy Sewall



# WORKING WITH FARMERS TO PROTECT OUR RIVERS & STREAMS

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## EXECUTIVE SUMMARY

Agriculture is Virginia's largest industry by many metrics. It also represents the largest source of nutrient and sediment pollution reaching Virginia's local streams, rivers, and the Chesapeake Bay.<sup>1</sup> Fortunately, addressing these pollution loads offers an opportunity to improve the Commonwealth's natural resources while also enhancing the positive economic impact of agriculture. The Virginia Agricultural Cost Share Program (VACS) funds the implementation of a wide suite of agricultural practices that reduce pollution while enhancing farm productivity. Despite Virginia's recent increases in this program, demand far exceeds available funding.

## CHALLENGE

The Chesapeake Bay Watershed Implementation Plan (WIP) and the 2020 Virginia General Assembly (HB1422/SB704) set a distinct timeline for farmers to protect their streams and the Bay by installing voluntary conservation practices on their lands. To meet our Bay goals by 2025, Virginia expects 75% of the remaining nitrogen pollution reductions to come from agriculture.<sup>2</sup> To date, however, the number of conservation practices installed on Virginia farmland falls far short of the pace planned for and needed. Without sufficient financial and technical support from a fully-funded VACS to assist the agriculture sector in their critical role in reducing nutrient and sediment pollution to the Chesapeake Bay, the timeline will not be met.

**To meet our Bay goals by 2025, Virginia expects 75% of the remaining nitrogen pollution reductions to come from agriculture.**

The Virginia Department of Conservation and Recreation administers VACS through the Soil and Water Conservation Board and Virginia's 47 Soil and Water Conservation Districts. The

Districts' experienced staff assists farmers and landowners to identify opportunities to improve local water quality and prevent pollution from reaching Virginia's waterways, provides technical assistance in implementing best management practices (BMPs), and helps to offset the cost of installing the practices.<sup>3</sup> These BMPs include stream fencing and alternative water sources to keep livestock out of streams; nutrient management plans that help farmers decide when and how to apply fertilizers; riparian grass and forested buffers to filter nutrient and sediment from runoff; conservation tillage and cover crops to keep soils on farms; and, many other practices essential to protecting Virginia's streams, lakes, rivers, and bays. Historically, Virginia's funding for VACS and associated technical assistance has fluctuated significantly from year to year but has always fallen far below the state's documented need.

## SOLUTION

Every other year, the Virginia Department of Conservation and Recreation—working with farmers, the Soil and Water Conservation Districts, and other stakeholders—compiles an Agricultural Needs Assessment detailing how much investment is needed for agricultural BMPs. The most recent assessment shows that, in order to maximize benefits to local and downstream waterways and Virginia communities, VACS should be funded at no less than \$100 million per year.<sup>4</sup> Strong, sustained funding at the level identified in the Agricultural Needs Assessment will facilitate a faster pace of progress, improve water quality, and invest in agricultural economies both in and beyond the Chesapeake Bay Watershed.

Investments in agricultural BMPs improve water quality, create local jobs, and deliver economic benefits for rural communities.

Livestock exclusion from streams prevents calf losses and improves herd health.<sup>5</sup> Increased efficiency of nutrient application reduces fertilizer loss while improving crop yield. Conservation tillage, cover crops, rotational grazing, and other practices further improve soil health and productivity.<sup>6</sup> Reducing agricultural runoff will also improve the well-being of local communities that benefit from cleaner, healthier streams and waterways through safe drinking water, outdoor recreation, and enhanced tourism opportunities.

It is important that these investments in agricultural BMPs are equitably reaching historically underserved communities like farmers of color. As recently noted by the Virginia Soil and Water Conservation Board, the allocation of funding for the VACS program should address Diversity, Equity, Inclusion and Justice concerns, and the state should follow through with this directive.<sup>7</sup>

## POLICY RECOMMENDATIONS

Fund the Virginia Agricultural Cost-Share Program at the documented need of at least \$100 million per year according to the Agricultural Needs Assessment.

Provide sufficient and stable funding for technical assistance by Soil and Water Conservation Districts to ensure adequate staff capacity and training.

Maintain, enforce, and, where possible, improve our agricultural water quality and conservation initiatives.



Farmer Jim Walker, standing inside his forested buffer alongside his happy, fenced cows  
Image credit: Anne Marie Roberts



# UPGRADING WASTEWATER TREATMENT IN VIRGINIA

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## EXECUTIVE SUMMARY

Enhanced efforts are needed to upgrade Virginia's wastewater facilities and to address the public health risk of combined sewer overflows from aging wastewater infrastructure. Upgrades to wastewater facilities are a proven strategy for benefiting water quality and reducing large quantities of pollution. Virginia's wastewater agencies have played a major role in reducing nutrient pollution to date, but they have been asked to accelerate this important work in the Phase III Watershed Implementation Plan (Phase III WIP) and through recent legislation requiring upgrades to wastewater treatment and to remaining combined sewer overflow (CSO) systems. Virginia needs to support these programs to continue protecting water quality and public health.

## CHALLENGE

In the last decade and a half, many of Virginia's wastewater treatment plants have adopted upgraded nutrient removal technology to significantly reduce the pollution discharged to local rivers and the Bay. Additionally, a bill passed in 2017 required the City of Alexandria to remediate its CSO system by 2025, and the General Assembly has appropriated \$50 million to meet this deadline.

We are now seeing the beginnings of a remarkable, though still fragile, recovery of our local streams, rivers, and Chesapeake Bay — increased water clarity and quality, and thousands of acres of thriving aquatic grasses. These signs of success are attributable to the hard work of the wastewater agencies and the localities they serve, but also thanks to the Commonwealth's long-term financial commitment to the program, reflected in sustained funding for matching grants to upgrade nutrient pollution reduction capabilities.

The work is not complete, however. Our watersheds have more people, fewer forests, and are facing climate change. As a result, Virginia and regional partners will have to enhance efforts to meet the goal of a restored Bay. Virginia's plan to do so is set out in the Blueprint for clean water, which addresses the work needed by all sectors. Further, Virginia must rise to the challenge of addressing its largest CSO system located in the City of Richmond, where 24.5% of residents are below the poverty line<sup>1</sup> and already pay some of the highest wastewater rates in Virginia.

**Virginia's largest Combined Sewer Overflow system is located in the City of Richmond, where 24.5% of residents are below the poverty line and already pay some of the highest wastewater rates in Virginia.**

## SOLUTION

The General Assembly placed Richmond on a timeline to remediate its CSO system by 2035 through legislation (SB1064) passed in 2020. In 2021, the Enhanced Nutrient Removal Certainty Program (HB 2129/SB1354) was established, which will ensure Virginia achieves the wastewater treatment technology upgrades necessary to meet the Blueprint goals. Still, the funding to implement these projects is critical to accomplishing these goals.

Not only will more complete wastewater treatment revitalize the Bay and its tributaries, but it will ensure that communities across the Commonwealth will more equitably receive the benefits of clean water in their own communities. Rural communities, especially rural communities of color, "have long faced challenges with toxic water due to insufficient water infrastructure," while low income ratepayers in urban areas struggle to afford wastewater and drinking

water improvements.<sup>2</sup> State investment will help these communities maintain and improve aging infrastructure, prevent local water quality problems like toxic algae, and create jobs for skilled workers.<sup>3</sup>

Based on Virginia's latest needs assessment for the wastewater sector, Virginia will require an additional \$150 million at least to meet our goals under the Chesapeake Bay Blueprint. Implementing Richmond's interim plan to remediate its CSO system will also require significant state investment to supplement local ratepayer-generated fees.

## CONCLUSION

Virginia legislators have enacted a suite of programs along with consistent funding through the Water Quality Improvement Fund to help the wastewater sector cost-effectively reduce pollution to Virginia's waterways. The General Assembly has also assisted localities with remediating aging CSO systems, once again making local rivers swimmable and fishable. Virginia must remain committed to this work by ensuring robust and sustained funding for continued modernization of the Commonwealth's wastewater infrastructure.

## POLICY RECOMMENDATIONS

Provide at least \$150 million per the Wastewater Needs Assessment for upgrading the nutrient pollution reduction capabilities of significant wastewater facilities discharging to the Chesapeake Bay and tributaries.

Defend against any legislation that would prevent the Department of Environmental Quality from implementing wastewater treatment plant upgrades as called for in Virginia's Chesapeake Bay Blueprint

Provide state resources to help Richmond fully address its CSO system, an estimated cost of \$883 million, as required by SB1064 (2020).

Domestic & Wildlife on the River - Accomack, Va  
Image credit: Charlie Vaughan





# REDUCING SINGLE-USE PLASTICS, LITTER, & MARINE DEBRIS IN VIRGINIA

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## EXECUTIVE SUMMARY

Building on the growing concern and increased willingness to take action to decrease the amount of plastic waste in Virginia’s environment, now is the time to craft policies and laws that will keep man-made waste out of Virginia’s streams, rivers, and coastal waters. We can do this by eliminating the most harmful types of mismanaged waste, incentivizing sustainable disposal of what we do use, and prioritizing funding to shift to sustainable and reusable products.

## CHALLENGE

Our society produces plastic packaging, beverage containers, and food-wrappers designed to be used once and then “thrown away”. Most discarded materials are then landfilled or incinerated, creating pollution and requiring producers to extract more natural resources to make new materials.<sup>1</sup> When mismanaged, trash ends up in the environment.

Virginia’s natural landscapes and waterways are paying the price. Wildlife – including turtles, birds, fish, mammals, and important water-filtering bivalves like oysters and mussels – often mistake plastic items for food, can be entangled in debris, or displaced from their habitat.<sup>2</sup>

Eighty percent of debris in the oceans comes from land: mis-managed waste, litter, illegal dumping, and uncovered trucks.<sup>3</sup> Most of the litter in Virginia comes from single-use food- and beverage-related items followed closely by cigarette butts and plastic grocery bags (see “Top Ten Items”).<sup>4</sup>

**Eighty percent of debris in the oceans come from land: mis-managed waste, litter, illegal dumping, and uncovered trucks.**

Rank	Item	Percent
1	Cigarette Butts	15%
2	Beverage Bottles (Plastic)	11%
3	Grocery Bags (Plastic)	10%
4	Food Wrappers (Candy, Chips, etc.)	10%
5	Beverage Cans	7%
6	Other Plastic Bags	5%
7	Bottle Caps (Plastic)	5%
8	Cups & Plates (Plastic and Foam)	4%
9	Beverage Bottles (Glass)	4%
10	Straws, Stirrers	3%

### Top Ten Items, 2019 Statewide Cleanups in Virginia

Image credit: Clean Virginia Waterways of Longwood University

Single-use plastic production, consumption, and disposal, in particular, disproportionately affects communities of color, low-income communities, and Indigenous communities<sup>5</sup> by polluting the air, water, and soil. Exposure to plastic additives and related toxins can have negative biological effects on humans and wildlife.<sup>6</sup>

We have long relied on a broken recycling system and local stewards to keep Virginia’s land and waters litter free. This approach has proven to be insufficient in action, funding, and impact as it does little to reduce single-use products or to hold producers responsible.

Virginia has made some progress: in 2021, Virginia banned single-use foam cups and take out containers, intentional balloon releases, and single-use products in state agencies and public colleges and universities.

## SOLUTION

To protect our waterways and ocean from plastic pollution, we need to eliminate harmful single-use plastics, require producers to build and support a robust recycling system, and invest in programs to prevent and remove litter from our waterways and environment.

## STATEWIDE BAG BILL

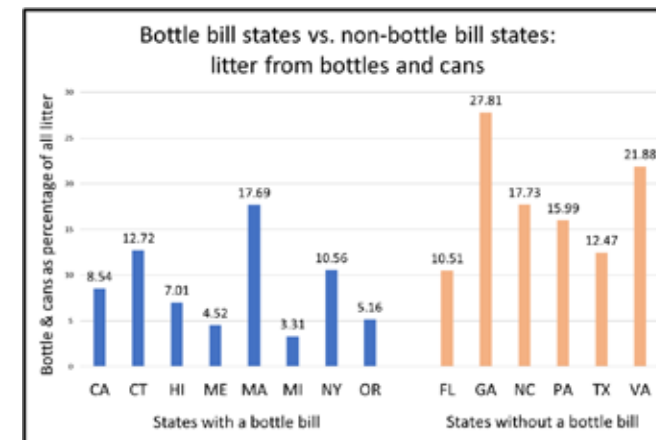
In order to effectively decrease litter, and contingent on the implementation of local enactment of fees on single-use plastic bags, consider uniform action on the state level to reduce single-use bags (as was supported by the Virginia Food Industry Association in 2020).

## PRODUCER RESPONSIBILITY

Producers and fast-food restaurants that depend entirely on single-use food and beverage packaging should be responsible for the costs of litter clean ups, recycling, and waste disposal. Virginia should incentivize and encourage producers to create and use products that are truly reusable, biodegradable, and/or easier to recycle.

## BOTTLE BILL

In Virginia, bottles and cans account for nearly 22% of all litter (see chart below from Clean Virginia Waterways).<sup>7</sup> A proven way to reduce this is to establish a beverage container deposit program (“bottle bill”). Bottle bills, which rely on deposits to incentivize consumers and retailers,



not only reduce litter – they also increase recycling, reduce energy use, and curb greenhouse gas emissions.<sup>8</sup> In states with container deposit bills, bottles and cans account (on average) for 8.69% of the total litter – significantly less than in Virginia.<sup>9</sup>

## RAISING THE LITTER TAX

Virginia (population 8.5 million) generated \$1,864,527 from the Virginia Litter Taxes in Fiscal Year 2020. The fund included \$878,294 from the Litter Tax, \$769,390 from the Beer Tax, and \$216,842 from the Soft Drink Tax.<sup>10</sup> That is low when compared to states with smaller populations. For example, Washington State (population 7.6 million) generates \$11.4 million annually from its litter tax.<sup>11</sup> As funds from the current Virginia Litter Tax are insufficient to cover the costs associated with prevention and removal of mismanaged solid waste, it should be raised.

## CONCLUSION

Proven solutions exist that could measurably reduce plastic pollution and mis-managed solid waste in Virginia’s communities. Tackling plastic pollution will require new laws, support for behavior-change campaigns that encourage the reduction of single-use items, and litter removal efforts.

## POLICY RECOMMENDATIONS

Establish a statewide beverage container deposit program (often referred to as a Bottle Bill).

Contingent on the implementation of local enactment of fees on single-use plastic bags, consider uniform action on the state level to reduce single-use bags.

Establish a producer stewardship program targeting single-use plastic packaging and products.

Raise the Virginia Litter Tax, and expand usage of funds to nonprofits which organize most of Virginia’s litter cleanups and public outreach campaigns.



# ENDNOTES

Sunrise at the Great Falls on the Potomac River  
Image credit: Robin Kent

## TACKLING POLLUTED STORMWATER RUNOFF & RESTORING LOCAL WATER QUALITY

<sup>1</sup> *Assault on Clean Water Threatens Virginia*, Southern Environmental Law Center (March 2019), [https://www.southernenvironment.org/uploads/petitions/VA\\_CWDL\\_Factsheet\\_0319\\_F.pdf](https://www.southernenvironment.org/uploads/petitions/VA_CWDL_Factsheet_0319_F.pdf).

<sup>2</sup> *About Virginia Seafood*, Va. Seafood (accessed June 23, 2021), <http://www.virginiaseafood.org/about-virginia-seafood>.

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<sup>4</sup> *Stormwater Runoff*, Chesapeake Bay Program (accessed June 30, 2020), [https://www.chesapeakebay.net/issues/stormwater\\_runoff](https://www.chesapeakebay.net/issues/stormwater_runoff).

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<sup>1</sup> *2025 Watershed Implementation Plans (WIPs)*, Chesapeake Progress (accessed June 30, 2020), <https://www.chesapeakeprogress.com/clean-water/watershed-implementation-plans>.

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<sup>3</sup> *Virginia's Agricultural Cost Share Manual*. Virginia Department of Conservation and Recreation (May 2021), <http://consapps.dcr.virginia.gov/htdocs/agbmqman/agbmqmptoc.htm>.

<sup>4</sup> *FY 2020 Chesapeake Bay and Virginia Waters Clean-Up Plan*, Secretary of Natural Resources (November 2020), <https://rga.lis.virginia.gov/Published/2020/RD498/PDF>.

<sup>5</sup> R. Zeckoski, B. Benham, and C. Lunsford. *Streamside Livestock Exclusion: A Tool for Increasing Farm Income and Improving Water Quality*, Biological Systems Engineering and Virginia Department of Conservation and Recreation. (Sept. 2007, revised Dec. 2012), [https://techworks.lib.vt.edu/bitstream/handle/10919/48073/442-766\\_pdf.pdf](https://techworks.lib.vt.edu/bitstream/handle/10919/48073/442-766_pdf.pdf).

<sup>6</sup> Marcio Renato Nunes et al., *No-till and Cropping System Diversification Improve Soil Health and Crop Yield*, 328 *Geoderma* 30 (October 15, 2018), <https://doi.org/10.1016/j.geoderma.2018.04.031>.

<sup>7</sup> *Virginia Soil and Water Conservation Board Electronic Meeting*, Virginia Soil and Water Conservation Board (May 20, 2021), <https://townhall.virginia.gov/GetFile.cfm?File=Meeting>.

## UPGRADING WASTEWATER TREATMENT IN VIRGINIA

<sup>1</sup> *Richmond, Va Census Place. Data USA* (2021), <https://datausa.io/profile/geo/richmond-va>.

<sup>2</sup> *Water, Health, and Equity: The Infrastructure Crisis Facing Low-Income Communities & Communities of Color - and How to Solve It*, Clean Water for All (October 23, 2018), [https://www.policylink.org/sites/default/files/CWC\\_Report\\_Full\\_report\\_lowres.pdf](https://www.policylink.org/sites/default/files/CWC_Report_Full_report_lowres.pdf).

<sup>3</sup> *WATER WORKS: The Job Creation Potential of Repairing America's Water Infrastructure*. BlueGreen Alliance (July 1, 2020), <https://www.bluegreenalliance.org/wp-content/uploads/2020/07/BGA-Water-Works-Report-vFINAL.pdf>.

## REDUCING SINGLE-USE PLASTICS, LITTER, & MARINE DEBRIS IN VIRGINIA

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<sup>2</sup> Christensen, Ken. *Guess What's Showing Up in Our Shellfish? One Word: Plastics*. National Public Radio (Sept. 19, 2017), <https://www.npr.org/sections/thesalt/2017/09/19/551261222/guess-whats-showing-up-in-our-shellfish-one-word-plastics>.

<sup>3</sup> *Virginia Marine Debris Reduction Plan*. Virginia Coastal Zone Management Program (2021), <https://www.deq.virginia.gov/get-involved/coastal-zone-management/ocean-management/marine-debris>.

<sup>4</sup> *Data from the 2019 International Coastal Cleanup in Virginia*. Clean Virginia Waterways of Longwood University (2019), <http://www.longwood.edu/cleanva/Data.ICCinVA.html>.

<sup>5</sup> Nairobi. *Neglected: Environmental Justice Impacts of Marine Litter and Plastic Pollution*. United Nations Environment Programme (2021).

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<sup>9</sup> *Marine Litter Report: Littered Bottles & Cans: Higher in Virginia Than in States with Bottle Bills*. Clean Virginia Waterways (2020).

<sup>10</sup> *Litter Tax*. Virginia Department of Environmental Quality (accessed August 3, 2021), <https://www.deq.virginia.gov/land-waste/litter-prevention/litter-tax>.

<sup>11</sup> *Paying For Litter Programs*. State of Washington, Department of Ecology (2021), <https://ecology.wa.gov/Waste-Toxics/Solid-waste-litter/Litter/Paying-for-litter>.





Young Bald Eagle Flying Over The Plains  
(*Haliaeetus leucocephalus*)- Fauquier County, Va  
Image credit: Hugh Kenny

# WILDLIFE & FISHERIES

Virginia's wildlife and fisheries and their habitats are growingly threatened by encroachment and climate change. As human populations continue to expand into and impact areas of the state, we must ensure that successful wildlife corridors and aquatic connectivity initiatives protect the health and safe movement of our fauna. We must also continue to meet water quality improvement goals through strategically identifying, protecting, and rebuilding our native pollution-filtering shellfish populations.

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# EXECUTIVE SUMMARIES AND CONTACT INFORMATION

## VCN POINT OF CONTACT

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### ENSURING RESILIENT ECOSYSTEMS THROUGH WILDLIFE CORRIDOR PROTECTION

Wildlife corridors, or connections between patches of important habitat, protect public health, reduce wildlife-vehicle collisions, allow wildlife to move to more suitable habitats, and make our state more resilient in the face of a changing climate. Protecting wildlife corridors helps to keep our ecosystems intact. Virginia's General Assembly took great steps forward in 2020 and 2021 passing bills like the Wildlife Corridor Action Plan that will improve the identification of wildlife corridors and develop a coordinated strategy to protect them. However, there remains much work left to do.

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Zachary Sheldon // The Nature Conservancy // zachary.sheldon@tnc.org



### PROTECTING & RESTORING VIRGINIA'S MUSSEL POPULATIONS

Freshwater mussels are an important part of Virginia's natural heritage, and they benefit streams and rivers by filtering water and removing pollutants such as nitrogen. These valuable organisms have shown a rapid decline, and investments and strategies are needed to protect and restore these populations.

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### ASSESSING & ENHANCING VIRGINIA'S OYSTER STOCK

The native oyster is one of the Chesapeake Bay's keystone species and of great ecological, economical, and historical importance in the Commonwealth. Fortunately, during the 2019 legislative session the General Assembly authorized an increased investment in efforts to improve the pace of ecological and fishery restoration efforts. These efforts support maintenance of the states' commercial fishery and the wide array of ecosystem services provided by healthy oyster habitats. With additional enhancement activities taking place and growth in the wild population of oysters throughout the state, now is the time to further investigate the success of these efforts and plan for the successful management of this resource in the future.

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American Green Tree Frog (*Hyla cinerea*)  
- Huntley Meadows Park  
Image credit: David Kepley





# ENSURING RESILIENT ECOSYSTEMS THROUGH WILDLIFE CORRIDOR PROTECTION

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## EXECUTIVE SUMMARY

Wildlife corridors, or connections between patches of important habitat,<sup>1</sup> protect public health,<sup>2</sup> reduce wildlife-vehicle collisions,<sup>3</sup> allow wildlife to move to more suitable habitats, and make our state more resilient in the face of a changing climate.<sup>4</sup> Protecting wildlife corridors helps to keep our ecosystems intact. Virginia's General Assembly took great steps forward in 2020 and 2021 passing bills like the Wildlife Corridor Action Plan<sup>5</sup> that will improve the identification of wildlife corridors and develop a coordinated strategy to protect them. However, there remains much work left to do.

## CHALLENGE

Virginia's current road infrastructure does not meet the needs of aquatic and terrestrial wildlife, and it is not resilient in the face of a changing climate. Over 70,105 miles of roads carve Virginia's land into pieces.<sup>6</sup> Only 41% of the natural land area in the United States retains enough connectivity to facilitate species traveling to their preferred climate conditions.<sup>7</sup> This vast network of roads creates barriers to safe passage for terrestrial and aquatic species and poses a threat to the safety of human communities. Virginia is considered a "High Risk" state for wildlife/vehicle collisions according to State Farm collision data; the 12th most dangerous state in the nation. Drivers on Virginia roads had a 1-in-72 chance of an animal vehicle collision in 2020.<sup>8</sup> More worryingly, we know that there are many more unreported wildlife/vehicle collisions on our roads.<sup>9</sup> A better system to track the true scale of the problem is needed.

**Over 70,105 miles of roads carve Virginia's land into pieces.**

Aquatic organisms suffer from our vast network of roads. Undersized culverts can block the

movement of aquatic species, damage roadways, erode streambanks, and restrict spawning migrations of culturally significant species like shad and river herring. Two assessments of road-stream crossings in Virginia found 54% of crossings in Blue Ridge headwater streams and 58% of crossings in the coastal plain were impeding fish movement.<sup>10,11</sup> Because climate change is expected to increase the frequency and intensity of flooding,<sup>12</sup> there is a clear need for additional assessments of aquatic passage and improving culverts throughout the state.

## SOLUTION

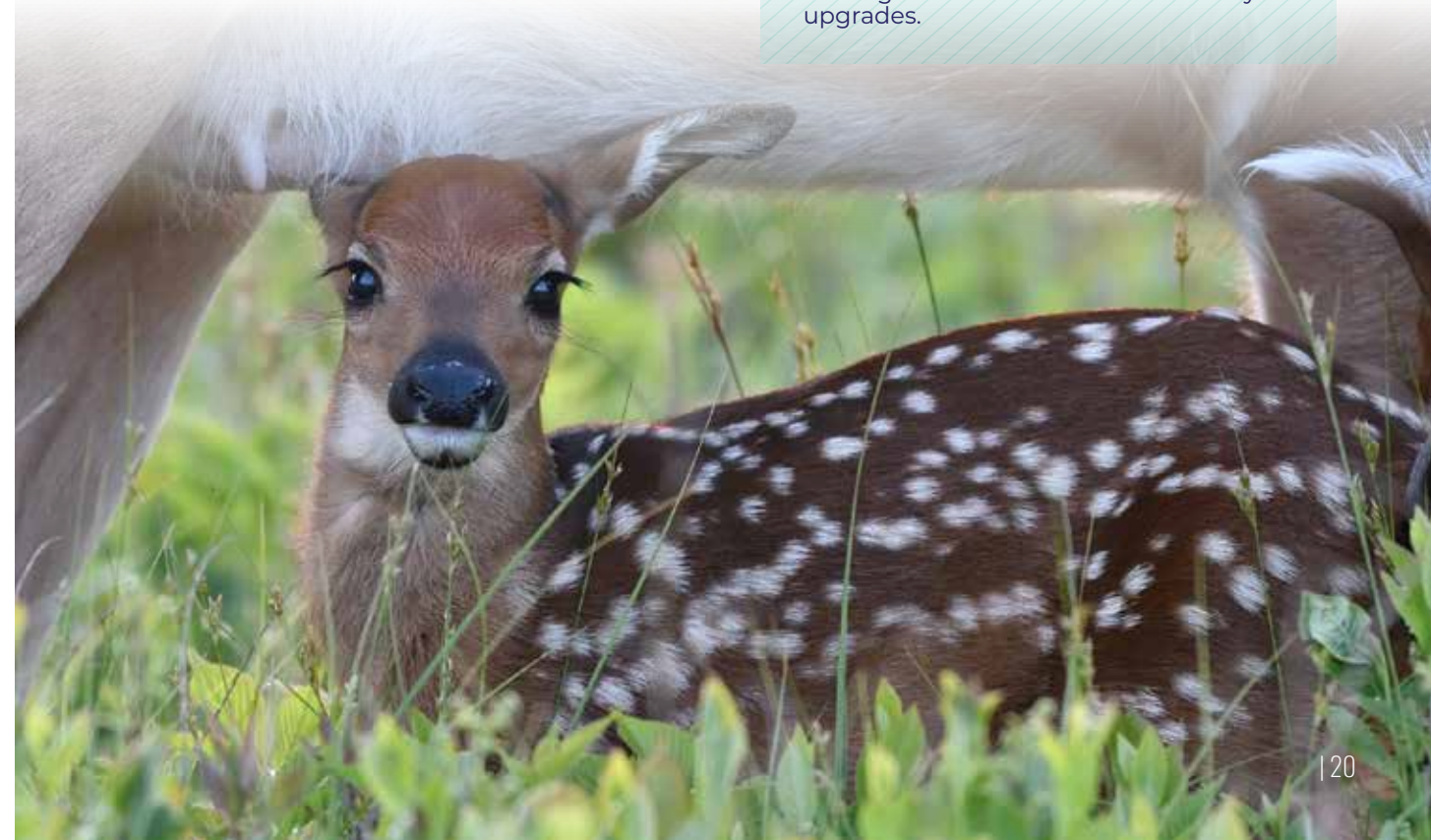
Wildlife crossings, which are overpasses or underpasses that allow wildlife to cross above or below a road, have decreased wildlife/vehicle collisions in Virginia up to 92% when combined with exclusionary fencing.<sup>13</sup> Crossings make roads safer for both citizens and wildlife and reduce costs associated with wildlife collisions. The General Assembly passed excellent bills in the last two years that began the work of protecting wildlife movement, but funding is still needed to support the agencies, partners, and private landowners who must all work together to truly protect and restore wildlife corridors and create safe passage for our terrestrial and aquatic species. In addition, immediate changes to current policy and funding criteria are needed to allow easy and cost-effective solutions like adding exclusion fencing along roadways where culverts or other underpasses already exist. These solutions should proceed as safety fixes under VDOT's current routine building program without the delays and the local match required for Transportation Alternatives Program (TAP) grants. Virginia Transportation Research Council (VTRC) research has already demonstrated a greater than 90% reduction in collisions where fencing is added to existing safe crossings.<sup>14</sup> We must also allocate the funds needed to

incentivize landowners to protect and restore wildlife movement corridors.

An accurate understanding of the scale of wildlife-vehicle collisions is also critical to the success of the Wildlife Corridor Action Plan. VDOT must standardize its methodology of recording and analyzing animal carcass data, and make these data publicly available. Similarly, much more data is needed to fully identify and prioritize barriers to aquatic organism passage (AOP) throughout Virginia. While there have been a handful of regional initiatives to survey road crossings for their impacts to aquatic life, there has been no statewide effort. A coordinated survey effort is needed. VDOT must also determine AOP status of a road-stream crossing prior to replacement/repair projects and update its design standards to ensure habitat connectivity and resiliency for all road-stream crossing projects.

## Protected Under Mother's Shadow White-Tailed Deer Fawn (*Odocoileus virginianus*)

Image credit: Larry W. Brown



## POLICY RECOMMENDATIONS

Direct VDOT to systematically collect wildlife carcass removal data across Virginia and make that data publicly available.

Provide incentives for landowners to protect and restore wildlife corridors.

Provide resources to the Department of Wildlife Resources and partners to launch a statewide effort to assess barriers to aquatic connectivity and make the data publicly accessible.

Direct VDOT to determine the Aquatic Organism Passage (AOP) status of a road-stream crossing prior to replacement/repair projects and update design standards to ensure habitat connectivity and resiliency for all road-stream crossing projects.

Direct VDOT to include exclusionary fencing in annual allocations for safety upgrades.



# PROTECTING & RESTORING VIRGINIA'S MUSSEL POPULATIONS

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## EXECUTIVE SUMMARY

Freshwater mussels are an important part of Virginia's natural heritage and they benefit streams and rivers by filtering water and removing pollutants such as nitrogen. These valuable organisms have shown rapid decline, and investments and strategies are needed to protect and restore these populations.

## CHALLENGE

Freshwater mussels represent a great source of biodiversity, natural heritage, and ecological services. A single mussel can filter up to 15 gallons of water per day,<sup>1</sup> which in turn can prevent pollutants such as nitrogen from reaching downstream waters.<sup>2</sup> Unfortunately, mussels represent the most endangered class of organisms with 70% of species vulnerable to extinction.<sup>3</sup> Virginia has 80 species, many have incurred significant population losses. Since the endangered species act's adoption in 1973, the largest single loss of endangered species occurred in the Clinch River in 1998 due to a spill.<sup>4</sup> Further, water quality, dams and loss of habitat have degraded these resources and threats will be exacerbated with climate change.

**Mussels represent the most endangered class of organisms with 70% of species vulnerable to extinction.**

Freshwater mussels have elaborate reproductive cycles which are linked with fish populations, often associated with specific species. As such, restoration of mussels is complicated and challenging, as it requires consideration of both mussels and fish populations. Further, the diversity of mussels combined with a lack of robust historical surveys presents challenges to identifying restoration sites.<sup>5</sup> Investments to protect mussels have largely been limited to mitigation dollars but restoring these beneficial organisms will require greater investments.

## SOLUTION

Fortunately, our ability to propagate and restore populations of mussels has significantly advanced. Hatcheries have vastly improved their ability to propagate mussels by using fish hosts in recent decades and are very capable of restoring populations given available funding mechanisms. Still, very limited resources have been appropriated and these funds have primarily come from mitigation events. Mitigation is only aimed at returning what was lost, not necessarily to restore species and rivers that require intervention to prevent extirpation or decline. In order to protect these important resources, Virginia needs to invest in these efforts. Virginia has partnered with businesses and public organizations in Southwest Virginia to augment and



monitor mussel populations in the Tennessee drainage of Virginia. This effort has seen progress towards creating self-sustaining populations of endangered mussels. Given this success, Virginia needs to create a similar plan for the entire Commonwealth.

To develop and implement such a plan, state agencies need additional support. Specifically, there is a need to add staff dedicated to the protection and restoration of freshwater mussel populations. Additionally, the state needs to invest in restoration programs that support hatcheries in restoration efforts and in efforts to grow and release mussels across the Commonwealth. Virginia has recognized the benefits of shellfish in previous conservation efforts, and freshwater mussel restoration offers an opportunity to extend those successful initiatives into the headwaters of the state. Virginia has a willing coalition of partners that can help with mussel restoration, but the Commonwealth needs a comprehensive restoration plan.

## USFWS Display of mussel diversity from the Clinch River (right)

Image credit: Joe Wood



## POLICY RECOMMENDATIONS

Dedicate funding (\$400,000 over the biennium) to develop a freshwater mussel restoration plan for the Commonwealth.

Support two additional Full Time Employees (FTEs) dedicated to the protection and restoration of freshwater mussels.

Provide funding (\$2M) to increase mussel restoration projects at hatcheries across the Commonwealth.

Make initial investment (\$5M) in needed renovations and expansions at the Aquatic Wildlife Conservation Center at the Buller Fish Hatchery in Southwest Virginia to meet mussel production needs and synergize with the new Clinch River State Park.

## Wavy Rayed Lampmussel (*Lampsilis fasciola*)

Image credit: Rachel Mair



# ASSESSING & ENHANCING VIRGINIA'S OYSTER STOCK

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## EXECUTIVE SUMMARY

The native oyster is one of the Chesapeake Bay's keystone species and of great ecological, economic, and historical importance in the Commonwealth. Fortunately, during the 2019 legislative session the General Assembly authorized an increased investment in efforts to improve the pace of ecological and fishery restoration efforts. These efforts support maintenance of the states' commercial fishery and the wide array of ecosystem services provided by healthy oyster habitat. With additional enhancement activities taking place and growth in the wild population of oysters throughout the state, now is the time to further investigate the success of these efforts and plan for the successful management of this resource in the future.

## CHALLENGE

The Chesapeake (meaning "great shellfish bay" in Algonquin) Bay once boasted oyster reefs so expansive they posed navigation hazards to explorers and watermen. Today, oyster populations in the Chesapeake Bay and its tributaries remain a fraction of their historical numbers. Overfishing, disease, and pollution have all taken their toll on this keystone species. There was a time when the oyster population in the Bay was so vast, the entire 19 trillion gallons of water could be filtered in less than a week. Today, our current population takes a whole year to filter the Bay.

**There was a time when the oyster population in the Bay was so vast, the entire 19 trillion gallons of water in the Bay could be filtered in less than a week. Today, our current population takes a whole year to filter the Bay.**

With their three-dimensional structure and ability of each adult oyster to filter up to 50 gallons of water per day, they provide numerous ecolog-

ical benefits including habitat for fish and other shellfish, pollution reductions, and increased water clarity. In addition, oysters are becoming more and more important to coastal resiliency efforts as they help effectively protect both intertidal and upland habitats.

While Virginia and its partners have invested significant funding and efforts into oyster restoration and replenishment, there is still much work to do. Because of the conservation successes we have experienced, wild oyster growth is now occurring and successful restoration projects abound. Now, our historical assessments need to be updated in order to ensure we direct our future efforts most efficiently in order to maximize ecological and economic benefits to the Commonwealth.

## SOLUTION

Restoring Virginia's oyster population will require broad partnerships, wise management of the existing oyster resource, and adequate resources. Fortunately, targeted successful restoration efforts are being implemented by a host of federal, state, and nongovernmental organizations to increase the oyster population and meet the oyster goal for the Chesapeake Bay Watershed Agreement.<sup>1</sup> At the same time, the Virginia Marine Resources Commission (VMRC) has strived to implement a fishery management plan that ensures the overall health of the oyster population while allowing for the culturally significant fishery to remain active.

These efforts have led to the successful restoration of oyster habitat in two Virginia rivers, the Lafayette and the Eastern Branch of the Elizabeth. Habitat restoration efforts are expected to be completed in the Great Wicomico in 2021 and restoration efforts are nearing completion in the Lynnhaven and Piankatank Rivers.

In addition, due to wise management by VMRC, oyster harvests have surged from a low of approximately 22,000 bushels in the early 2000's to an average of approximately 550,000 bushels over the past several harvest seasons.<sup>2</sup>

More robust monitoring and bringing additional resources and expertise to VMRC help better gauge our success and better manage this resource in the future. Although current monitoring efforts provide beneficial information for a variety of areas across the state's shellfish growing water, completing a more robust survey of the state's oyster population would help to target restoration efforts, provide additional information for fishery managers, and help ensure

limited restoration funds are spent as efficiently as possible. In addition, stock assessments are critical to successful fishery management efforts and VMRC does not currently employ a person with such specific expertise.

## CONCLUSION

The Commonwealth should invest the resources necessary to supplement our current understanding of oyster populations in state waters while also planning for improved management and successful restoration activities in the future. To accomplish these goals the Commonwealth should invest the necessary resources to accomplish our policy recommendations.

## POLICY RECOMMENDATIONS

Direct the Virginia Marine Resources Commission and the Virginia Institute of Marine Science to comprehensively map and sample all oyster growing areas in the waters of the Commonwealth.

Appropriate approximately \$112,000 to hire a stock assessment scientist (1 FTE) in order to supplement the VMRC's management of this important resource and other species that are biologically connected to oyster habitat in Virginia's waters.

American Oystercatchers (*Haematopus palliatus*) Amid Atlantic Oyster (*Crassostrea virginica*) Reef - Eastern Shore, Va

Image credit: Tori Kennedy





# ENDNOTES



River Enthusiast in Flight - Richmond, Va  
Great Blue Heron (*Ardea herodias*)  
Image credit: Jenn Clarke

## ENSURING RESILIENT ECOSYSTEMS THROUGH WILDLIFE CORRIDOR PROTECTION

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## PROTECTING AND RESTORING VIRGINIA'S MUSSEL POPULATIONS

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## ASSESSING AND ENHANCING VIRGINIA'S OYSTER STOCK

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# NATURAL LANDSCAPES & SUPPORTING INFRASTRUCTURE

Conservation of Virginia's lands is crucial to protecting our natural resource base. Lands that are protected from conversion directly support clean water and air, healthy wildlife populations, beautiful views, food security, culture and history, a sense of place, and improved physical and mental health. Virginia's landscapes also help support the backbone of its economy: agriculture, forestry, and tourism. However, land conservation efforts are often dismissed in the interests of construction. Protecting our landscapes means creating more resilient communities and food systems, conserving our tree canopies, and keeping our cultural history and resources intact for future generations to appreciate.

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Scarlet Point at Brumley Mountain - Washington County, Va

Image credit: Lucas Manweiler



# EXECUTIVE SUMMARIES AND CONTACT INFORMATION

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### CONSERVING VIRGINIA'S LANDSCAPES FOR THE FUTURE

Virginia is known for its iconic landscapes - the rugged mountains of Southwest, the fertile Shenandoah Valley, Piedmont's rolling hills, and Tidewater's marshlands. When the world shut down in early 2020, Virginians gained a renewed appreciation for close-to-home parks, trails, natural areas, and farms. These much-loved open spaces did not happen by accident. They are a direct result of public investment in land protection. Meeting our needs for the future - farmland to support resilient food systems and vitalize rural economies, equitable access to urban parks and trails, protected areas for tourism and recreation - requires a re-commitment to preserving the resources on which all Virginians depend.

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### ESTABLISHING DEDICATED FUNDING FOR INCREASED CONSERVATION

Virginian's identities and quality of life are rooted in our land. We take pride in our stunning and iconic landscapes: the rugged Appalachian Mountains, fertile Piedmont, tidal rivers flowing across the coastal plain to the Chesapeake Bay. Virginia's natural resources support local economies; form the foundation of our culture and diverse communities; and sustain the health of our people, our wildlife, and our water. But the demands facing Virginia's landscapes are growing and Virginia needs to increase the scale and speed of its conservation efforts. Virginia needs to establish a dedicated funding source to meet these challenges.

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### PROTECTING HISTORIC & CULTURAL RESOURCES

From Chief Powhatan's capital, Werowocomoco, to Civil War battlefields to Rosenwald schools and sites related to the struggle for Civil Rights, Virginia's diverse array of historic and cultural resources tell the story of our Commonwealth and nation. Robust support for existing programs as well as exploration of broadening preservation tools available to protect these resources is critically important to ensure their benefit to current and future generations and supports key industries, including agriculture and tourism.

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### PROTECTING & EXPANDING VIRGINIA'S DWINDLING TREE CANOPY

Virginia is losing vast tracts of forests as well as urban tree canopy to development, redevelopment, and disease. This loss reduces the state's capacity to address climate change, improve community health, and improve air and water quality. Forests and urban trees, first and foremost, need additional protection to preserve what we have left. Increased funding for planting new trees and maintenance of existing trees is also necessary to achieve needed canopy goals.

Renee Grebe // Audubon Naturalist Society // renee.grebe@anshome.org  
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### PROMOTING A CLIMATE-SMART & EQUITABLE FARMING SYSTEM

Agriculture, a driver of rural prosperity, is also a significant climate solution when regenerative practices are applied. Regenerative principles include building soil health and fertility, increasing water percolation and retention, biodiversity, and ecosystem health, and reducing carbon emissions and current atmospheric CO2 levels. Small-scale pasture-based meat production is especially promising. Capturing this potential involves improving the information base to best frame solutions and target interventions, increasing investment in slaughter/processing and farmer capacity building, and framing and implementing policy and programs with an equity lens.

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## EXECUTIVE SUMMARY

Virginia is known for its iconic landscapes - the rugged mountains of Southwest, the fertile Shenandoah Valley, Piedmont's rolling hills, and Tidewater's marshlands. In early 2020, when our world shut down, Virginians gained a renewed appreciation for close-to-home parks, trails, natural areas, and farms.

These much-loved open spaces did not happen by accident. They are a direct result of public investment in land protection.

Meeting our needs for the future - farmland to support resilient food systems and vitalize rural economies, equitable access to urban parks and trails, protected areas for tourism and recreation - requires a recommitment to preserving the resources on which all Virginians depend.

## CHALLENGE

Climate change and population growth are putting pressure on our state's natural and agricultural lands. Since 2000, more than 335,000 acres of Virginia farmland have been paved over or otherwise converted to non-agricultural uses.<sup>1</sup>

These lands grow our food, protect reliable drinking water supplies, preserve habitat for wildlife, sequester carbon, and provide healthy outdoor spaces for Virginia families.

Despite broad public support for parks and conserved landscapes, the state's land protection programs are chronically underfunded. Conservation organizations and localities across the state submitted over \$100 million in land and water protection projects to a grant program with a budget of only \$14 million.

The federal government is making a significant, new investment in land conservation through the federal Land and Water Conservation Fund.

If state and local matching funds are not provided to unlock these federal dollars, Virginia could miss out.

**Virginia submitted over \$100 million in land and water protection projects to a grant program with a budget of only \$14 million.**

Underserved communities across Virginia have historically been unable to access available conservation resources. Missing opportunities to support these communities due to a lack of financial resources and the need for new targeted programming has meant that these areas lack access to the tremendous benefit that outdoor recreation and park investments provide.

Finally, statewide ranking of conservation areas through the new Conserve Virginia model<sup>2</sup> has generally been inadequate in reflecting locally-led conservation priorities across Virginia's vastly diverse regions and landscapes.

## SOLUTION

Fortunately, the Commonwealth has effective land conservation programs already in place, but they must be supported consistently at much higher levels to meet the growing need.

Virginia has one of the most successful and progressive private land conservation programs in the country - the Land Preservation Tax Credit (LPTC). The LPTC encourages voluntary land conservation by providing taxpayers who make gifts of land or conservation easements tax credits equal to 40% of the value of their donated interest.

The Virginia Land Conservation Foundation (VLCF) provides state matching grants on a competitive basis for the protection of open spaces and parks, natural areas, historic areas, and farmland and forest preservation.

The Virginia Farmland Preservation Fund and Virginia Battlefield Preservation Fund provide matching funds to leverage significant local, federal and private funding sources to protect the state's best farmland, tell a more complete history, and preserve historically-significant places.

These proven and effective tools must be funded robustly to meet the demands of our time.

In addition, these essential programs must be augmented by a permanent, dedicated source of revenue that serves a wider array of outdoor recreation, trails, pocket parks, and cultural site expansion and development projects. Such a program that supports urban conservation and underserved communities with a sustained source or reliable funds will allow localities to better plan their outdoor recreation infrastructure investments with certainty that their needs will be met. One potential way to build this new program out of an existing tool is to build off of the Virginia Outdoor Foundation's Preservation Trust Fund and new Get Outdoors program.<sup>3</sup>

## POLICY RECOMMENDATIONS

### Land Preservation Tax Credit (LPTC)

No changes should be made to the LPTC, a proven and effective land conservation tool

### Virginia's Land Conservation Grant Programs

\$40 million for the Virginia Land Conservation Foundation

\$5 million for the Virginia Farmland Preservation Fund

\$5 million for the Virginia Battlefield Preservation Fund

### New Outdoor Recreation Community Access Fund

\$50 million to be administered as a new statewide initiative



Mentee at Ravens Roost - Blue Ridge Parkway

Image credit: Freddy Jackson



# ESTABLISHING DEDICATED FUNDING FOR INCREASED CONSERVATION

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## EXECUTIVE SUMMARY

Virginian's identities and quality of life are rooted in our land. We take pride in our stunning and iconic landscapes: the rugged Appalachian Mountains, fertile Piedmont, tidal rivers flowing across the coastal plain to the Chesapeake Bay. Virginia's natural resources support local economies; form the foundation of our culture and diverse communities; and sustain the health of our people, our wildlife, and our water. But the demands facing Virginia's landscapes are growing and Virginia needs to increase the scale and speed of its conservation efforts. Virginia needs to establish a dedicated funding source to meet these challenges.

## CHALLENGE

Virginia faces dual threats of climate change and biodiversity loss. From stormwater and nutrient runoff (see *Tackling Polluted Stormwater & Restoring Local Water Quality*, pg 5, to air pollution (see *Improving Environmental Enforcement & Transparency*, pg 129), habitat loss and fragmentation (see *Ensuring Resilient Ecosystems Through Wildlife Corridor Protection*, pg 19), and increased development pressure (see *Conserving Virginia's Landscapes for the Future*, pg 31), as well as our looming 2025 Chesapeake Bay cleanup targets, Virginia's environment faces many challenges that Our Common Agenda addresses. And while the challenges and solutions are often starkly different, one common thread among them all is the need for more government funding to implement our solutions.

In addition, the COVID-19 pandemic laid bare both the necessity and desire of Virginians to get outdoors for recreation and mental health, with Virginia State Parks seeing over a 14% increase in visitation across the Commonwealth during a single month during the pandemic,<sup>1</sup> but also the inequities in access to the outdoors (see *Ensuring Virginians Have Daily Access to the*

*Outdoors*, pg 51) and the disproportionate health burdens carried by marginalized and underserved communities (*Improving Environmental Enforcement & Transparency*). Again, there are policy proposals through Our Common Agenda regarding these issues, but we cannot address these issues without adequate state funding.

**Virginia State Parks saw over a 14% increase in visitation across the Commonwealth during a single month during the pandemic.**

## SOLUTION

Virginia can take pride in its many past conservation achievements. However, if we are to meet the growing challenges facing the Commonwealth and address historic inequities, Virginia must establish a consistent, robust source of dedicated funding for conservation.

A dedicated revenue stream can enhance our existing conservation programs, increasing the scale and rapidity of projects to meet the growing demands placed on Virginia's environment. It will also allow for establishing new programs designed to specifically address conservation issues and marginalized communities that current programs are ill-equipped to address.

This dedicated funding must be used to supplement increased general fund appropriations for conservation initiatives. Overall funding must be increased to meet the challenges facing the Commonwealth. This increased funding will allow Virginia to fully capture available federal funding opportunities, such as the stateside Land and Water Conservation Fund,<sup>2</sup> Forest Legacy Program,<sup>3</sup> Agricultural Conservation Easement Program,<sup>4</sup> and Readiness and Environmental Protection Integration program,<sup>5</sup> maximizing the outcomes Virginians receive for every dollar invested.

## POLICY RECOMMENDATIONS

Establish a source of dedicated funding<sup>6</sup> that provides a minimum of \$300 million per year to natural resource conservation. This total includes the needs identified in *Conserving Virginia's Landscapes for the Future*. The remaining funds would address the identified gaps in Virginia's conservation programs, both in the scope of work and communities served, as identified throughout *Our Common Agenda*.

Direct the Secretary of Natural and Historic Resources to convene a workgroup to study and provide recommendations on how Virginia can increase the proportion of available federal funding for conservation that Virginia is able to capture.



Early Morning at Stoney Lookout  
Image credit: David Petersen



# PROTECTING HISTORIC & CULTURAL RESOURCES

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## EXECUTIVE SUMMARY

From Chief Powhatan's capital, Werowocomoco, to Civil War battlefields to Rosenwald schools and sites related to the struggle for Civil Rights, Virginia's diverse array of historic and cultural resources tell the story of our Commonwealth and nation. Robust support for existing programs as well as exploration of broadening preservation tools available to protect these resources is critically important to ensure their benefit to current and future generations and supports key industries, including agriculture and tourism.

We recognize that certain historic resources preserve the memory of racial injustice, and we support efforts to relocate or recontextualize these resources as appropriate.

## CHALLENGE

Without state support for the programs and initiatives detailed below, many of these sites and associated stories they tell risk being lost.

### Historic Rehabilitation Tax Credit (HRTC):

A catalytic community redevelopment and economic development tool for urban and rural communities who face challenges regularly. Studies by VCU's Center of Urban and Regional Analysis<sup>1</sup> and Baker Tilly,<sup>2</sup> found that construction and related activities associated with HRTC projects generate \$4.20 to \$5.30 of economic impact for every \$1.00 of tax credit.

**Historic Rehabilitation Tax Credit projects generate \$4.20 to \$5.30 of economic impact for every \$1.00 of tax credit.**

### Land Conservation:

The Virginia Land Conservation Fund (VLCF), the Virginia Battlefield Preservation Fund (VBPF) and Land Preservation Tax Credit are challenged

regularly. The VLCF funds a range of conservation projects in rural and urban areas. VBPF is targeted exclusively toward the preservation of historic battlefields. VBPF grants are often matched with federal dollars from the National Park Service's American Battlefield Protection Program, resulting in the preservation of more than 600 acres in the last year alone.<sup>3</sup>

### African American and Virginia Indian Resources:

Recently, the General Assembly has made commendable and long overdue efforts to fund initiatives focused on places and stories of Virginia's African American and Indigenous communities including establishing the African American Cemeteries and Graves Fund (2020). More than \$5 million in funding was provided to the Virginia Department of Historic Resources (DHR) to support a number of projects/positions aimed at surveying and funding places that tell a fuller and more inclusive story of Virginia's history (2021). Additionally, the Chickahominy Tribe received \$3.5 million to assist in the acquisition and restoration of tribal land.

## SOLUTION

The state has a tremendous opportunity to advance the preservation of Virginia's historic and cultural resources by providing enhanced support of the programs and initiatives noted above. Given the proven return on the Commonwealth's investment from the HRTC, and economic impacts of the COVID-19 pandemic, we would encourage the state to consider temporarily increasing the percentage tax credit that can be claimed via the HRTC (a similar measure is under consideration at the federal level) in order to help with the state's economic recovery, and to give particular consideration to HRTC projects with the potential to benefit under-represented communities. On the land conservation front, fully funding both VLCF and VBPF is

of critical importance to helping save Virginia's battlefields and other historic sites before they are lost to development. With regard to African American and Virginia Indian resources, the recent emphasis that the General Assembly has placed on funding projects that seek to preserve the historic resources of minority communities and elevate under-told stories is encouraging. It is important for the state to continue these efforts to provide increased funding, recognition, and protection for these resources, such as gravesites, sites with United States Colored Troops (USCT) history, and historic communities across the Commonwealth.

## POLICY RECOMMENDATIONS

Strengthen the Historic Rehabilitation Tax Credit program to allow for at least a temporary increase in the percentage tax credit that can be claimed to help the state's economic recovery.

Allocate \$40 million and \$5 million for the Virginia Land Conservation Fund and the Virginia Battlefield Preservation Fund, respectively.

Continue to make adjustments to Virginia Land Conservation Fund which encourage the preservation of sites which highlight Virginia's culturally diverse history.

Continue to provide increased funding for the documentation, identification, and protection of African American and Virginia Indian historic resources.



Virginia has taken steps in recent years to identify, preserve, and recognize unmarked African American gravesites. This is an encouraging step towards better telling the stories of the Commonwealth's minority communities.

Image credit: Sandra Parks



# PROTECTING & EXPANDING VIRGINIA'S DWINDLING TREE CANOPY

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Ann Jurczyk // Chesapeake Bay Foundation // ajurczyk@cbf.org

## EXECUTIVE SUMMARY

Virginia is losing vast tracts of forests as well as urban tree canopy to development, redevelopment, and disease. This loss reduces the state's capacity to address climate change, improve community health, and improve air and water quality. Forests and urban trees, first and foremost, need additional protection to preserve what we have left. Increased funding for planting new trees and maintenance of existing trees is also necessary to achieve needed canopy goals.

## CHALLENGE

As the COVID-19 pandemic has shown, people need equitable access to greenspace for mental and physical health. Trees scrub the air of harmful particulates that induce asthma and other respiratory illnesses. Trees also cool our streets and reduce heat-related illnesses, particularly in formerly redlined communities that have lower canopy than more affluent neighborhoods in the same city.<sup>1</sup>

We also need trees to improve water quality; trees cost-effectively reduce stormwater runoff by intercepting rainwater, which is why Virginia's Watershed Implementation Plan established a goal of 30,000 additional (net) acres of canopy by 2025.

The impacts of climate change are being felt across the state as warmer air and increasing precipitation cause more heat-related illnesses and flooding. Trees combat climate change not only by capturing and storing carbon, but also by reducing energy usage for cooling and heating buildings.<sup>2</sup>

Despite these well-documented benefits, mature hardwoods, which mitigate stormwater pollution, capture carbon, and improve air quality most effectively, are being lost to development, redevelopment, roads, and disease.

The Chesapeake Bay Program 2014–2018 preliminary land cover dataset<sup>3</sup> indicates a 184,665-acre net loss in tree canopy within Virginia's Chesapeake Bay watershed between 2014 and 2018. That means that, on average, approximately 72 square miles of canopy (the size of the cities of Staunton & Hampton combined) were lost *each year*. Of the lost tree canopy acreage, 9,993 acres became impervious surface - road, parking lots, and roofs - that add to stormwater runoff and that can't be replanted. This dataset covers 97 of the 104 localities within the Chesapeake Bay portion of Virginia.

**Virginia lost 184,665-acre net loss in tree canopy between 2014 and 2018, approximately 72 square miles each year.**

In Arlington and Virginia Beach, two of the most recent municipalities to conduct tree canopy assessments, canopy is holding steady on municipal property but trending downward on private property due to infill, redevelopment, and homeowner removal.

Loss of biodiversity is another critical challenge we face which may impact ecosystems as much as climate change, pollution, and other major forms of environmental stress.<sup>4</sup> Trees provide food, habitat, shelter, and breeding areas needed to restore and sustain Virginia's wildlife biodiversity.

## SOLUTION

We need to prioritize the preservation of intact forests as well as individual mature trees during development. For example, during the engineering process, consider how to protect natural resources first and adjust site plans accordingly.

Because tree canopy loss in urban areas occurs primarily on privately-owned property, state and locality budgets need to provide funding for tree

giveaways, which will rebuild canopy percentages over time.

Virginia will need to expand planting programs not only in new construction but also in underused turf areas on municipal and state-owned property such as schools, parks, and along roadways.

In all infill and redevelopment land use decisions, creating incentives for vertical, not horizontal, development would preserve tree and green spaces to reduce energy costs and greenhouse gas emissions, improve quality of life, and decrease stormwater runoff & recurrent flooding.

Planting programs should address inequities in urban tree canopy to ensure vulnerable communities such as Indigenous people, low income communities, and people of color are provided equitable access to green spaces, tree canopy, and the resulting health benefits these areas provide.

State and federal government agencies, the horticultural industry, and NGOs should work together to ensure there is an adequate supply of tree seedlings to meet Virginia's WIP tree canopy goals.

## POLICY RECOMMENDATIONS

Expand on and build stronger protections for existing tree canopy, such as conducting a natural resources inventory as the first step in the site planning process to preserve existing trees.

Remove "Planning District 8" from Conservation of Trees during Land Development,<sup>5</sup> which would enable all localities to collect fees to supply trees to community based organizations to increase canopy on private property.

Amend Conservation of Trees during Land Development and Replacement of trees during development process<sup>6</sup> to give localities the authority to establish their tree canopy replacement and conservation goals to address equity in formerly redlined areas, increase flood resiliency, realize local comprehensive plan goals, and meet water quality permit requirements.

River Steward Planting Trees in Monroe Park - Goldvein, Va  
Image credit: Carleigh Starkston





# PROMOTING A CLIMATE-SMART & EQUITABLE FARMING SYSTEM

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## EXECUTIVE SUMMARY

Agriculture, a driver of rural prosperity, is also a significant climate solution when regenerative practices are applied. Regenerative principles include building soil health and fertility, increasing water percolation and retention, biodiversity, and ecosystem health, and reducing carbon emissions and current atmospheric CO2 levels. Small-scale pasture-based meat production is especially promising. Capturing this potential involves improving the information base to best frame solutions and target interventions, increasing investment in slaughter/processing and farmer capacity building, and framing and implementing policy and programs with an equity lens.

## CHALLENGE

Agriculture accounts for 10% of total U.S. greenhouse gas emissions. Rising agriculture-related emissions are linked to the loss of carbon-sequestering pasture from the rise of concentrated animal feeding operations, crop production with chemical fertilizers to produce grain for animal feed, and liquid manure storage facilities.<sup>1</sup>

Grass-fed meat production provides a lucrative reason to conserve farmland which benefits rural economies. Regenerative pasture-based farming systems sequester carbon and build soil health,<sup>2</sup> but are limited by processing capacity. Limited access to slaughter and processing keeps existing producers from expanding and new producers from entering the market. A key constraint mentioned by processors is a shortage of skilled meat cutters.<sup>3,4</sup>

Pasture-based meat production is also an opportunity to address disinvestment in Black farmers. Because 48% of Black-owned farms in Virginia specialize in cattle and dairy production (almost all in beef production), small-scale, pasture-based operations are an opportunity to address inequities in land ownership.<sup>5</sup>

Land provides a source of intergenerational wealth, economic opportunity, and community historically denied to people of color. Since the high in 1920, the number of Black farmers in the United States has decreased from 925,000 owning 15 million acres to 50,000 owning 900,000 acres due to systemic discrimination, including unequal access to resources from public agricultural programs. Black-owned farms make up a minuscule 0.4% of acreage nationwide. In 2017, the average size of Black-owned farms was 132 acres. An estimated 1,300 farms in Virginia are Black-owned. These numbers understate the situation, as they are based on self-reporting and farm tract numbers assigned to applicants for USDA farm programs; people of color often do not have farm tract numbers.

**The number of Black farmers in the U.S. has decreased from 925,000 owning 15 million acres to 50,000 owning 900,000 acres due to systemic discrimination.**

## SOLUTION

The sustainable farming priorities outlined below, recommended by the National Sustainable Agriculture Coalition, should be implemented into Virginia policy in order to ensure climate-smart agricultural practices:<sup>6</sup>

- Conservation of working lands
- Agricultural research to develop climate-adaptive crops, livestock, and management practices
- Renewable energy for rural communities and farms
- Practices that build soil health and sequester carbon – cover-cropping, low/no-till, grass-fed production, etc.<sup>7</sup>
- Fortified local and regional food systems, including urban agriculture
- Equity and inclusion – debt relief for socially disadvantaged farmers,<sup>8</sup> ensuring farm programs are equally accessible to farmers of color

For grass-fed farming systems to scale and investment in processing to be feasible requires building the market for local grass-fed meat, increasing livestock production for local slaughter, and lowering the cost and risk of investment. The processing constraint requires addressing supply-and-demand factors and accessibility to capital, and includes grants or tax incentives to invest in local processing facilities, training of meat cutters, capacity-building of pasture-based farming systems, and marketing programs.

Comprehensive proposed federal legislation making available tools and resources to help people of color start farming, relieve farmer's debt, root out discrimination at USDA, and address past injustices provides the focal point for organizing initiatives at the state level to support farmers of color to launch and to succeed. An important place to start in addressing racial equity is data to ensure accountability and targeting of resources to farmers of color.

## POLICY RECOMMENDATIONS

### Climate-smart agriculture:

Add specific reference in VACS program guidelines to “climate-smart conservation activities and farming systems that increase organic matter and carbon sequestration in soil and store carbon in biomass” as a category eligible for agriculture cost share.

Generate new funding of \$250,000 for grants under AFID program for small-scale meat slaughter/processing capacity and meat cutter training.

Create a statewide asset map and gap analysis of slaughter/processing capacity and survey of processing barriers.

Generate new funding of \$1,000,000 for cooperative extension to help farmers implement climate-smart practices.

### Support to farmers of color:

Conduct a census of farmers of color.

Set-aside 15% of funding in programs for agriculture, extension, land conservation, and water quality for farmers of color.

Develop an annual report to General Assembly on agency performance in serving farmers of color.



Community Farm Volunteers - Loudoun County, Va  
Image credit: Hugh Kenny



# ENDNOTES

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<sup>2</sup> ConserveVirginia: Virginia's Land Conservation Strategy, Version 2.0. Office of the Governor, Commonwealth of Virginia (2020). <https://www.dcr.virginia.gov/conservevirginia>.

<sup>3</sup> Get Outdoors. Virginia Outdoors Foundation (2020). <https://www.vof.org/protect/grants/go>.

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<sup>2</sup> Virginia Historic Rehabilitation Tax Credits, Preservation Virginia (December 2017), <http://preservationva.wpengine.com/wp-content/uploads/2018/08/VA-HTC-Full-Report.pdf>.

<sup>3</sup> DHR Announces Availability of Virginia Battlefield Preservation Grants for Fiscal Year 2022, Virginia Department of Historic Resources (July 2021), <https://www.dhr.virginia.gov/news/dhr-announces-availability-of-virginia-battlefield-preservation-grants-for-fiscal-year-2022>.

## PROTECTING & EXPANDING VIRGINIA'S DWINDLING TREE CANOPY

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<sup>2</sup> Dan Burden. Urban Street Trees: 22 Benefits Specific Applications. Walkable Communities, Inc. (Summer 2006). [http://www.michigan.gov/documents/dnr/22\\_benefits\\_208084\\_7.pdf](http://www.michigan.gov/documents/dnr/22_benefits_208084_7.pdf).

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<sup>2</sup> Spratt, Elisabeth, et al. Accelerating regenerative grazing to tackle farm, environmental, and societal challenges in the upper Midwest. Journal of Soil and Water Conservation, Vol 76, No 1 (Jan/Feb 2021). <https://www.jswnonline.org/content/jswn/76/1/15A.full.pdf>.

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<sup>8</sup> Socially Disadvantaged, Beginning, Limited Resource, and Female Farmers and Ranchers. USDA Economic Research Service (May 20, 2021). <https://www.ers.usda.gov/topics/farm-economy/socially-disadvantaged-beginning-limited-resource-and-female-farmers-and-ranchers>.





# RESILIENT COMMUNITIES

While Our Common Agenda covers many different topics and conservation efforts, they all intersect in our communities. This means that we must be more intentional with the way we invest in mixed-use, walkable, and transit-oriented communities. We must ensure that flood-prone communities become less vulnerable through investments in flood-preparedness and resiliency. With the new social-distancing norms as a result of the COVID-19 pandemic, many Virginians are in dire need of access to parks and green spaces, trails and outdoor recreation, and safe opportunities for biking and walking.

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Hopewell Riverwalk at Sunrise  
Image credit: Daniel Jones



# EXECUTIVE SUMMARIES AND CONTACT INFORMATION

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## BOOSTING SMART GROWTH

Where and how we build our communities is critical to maintaining our quality of life, boosting equity, and protecting the environment. Smart growth promotes development in and near our cities; towns; and walkable, mixed-use, transit-accessible communities. By encouraging housing – including affordable housing – close to jobs, retail, and services, with streets designed for safe walking and biking with frequent, reliable transit, we reduce driving and pollution, protect natural and historic resources from sprawl, and expand opportunities for those who cannot afford a car or are unable to drive. Current state policies too often fuel car-centric development, but reforming those policies to promote smart growth will bring environmental, health, and economic benefits to all Virginians.

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## ENSURING THE RESILIENCE OF VIRGINIA'S FLOOD-PRONE COMMUNITIES

Virginians are already seeing the impacts of climate change across the state, from sea level rise along our coastlines to increased rainfall statewide. We must build upon the leadership of recent years to protect Virginians and preserve our natural resources into the future. Although all communities will undoubtedly face tough decisions, chronically underserved communities face disproportionate risks. Community-engaged comprehensive resilience planning and careful investment in adaptation measures will ensure an equitable future for all Virginians as well as the preservation of our natural resources.

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## ENSURING VIRGINIANS HAVE DAILY ACCESS TO THE OUTDOORS

From the Appalachian Mountains to the Chesapeake Bay and Atlantic Ocean, the Commonwealth of Virginia is abundant with opportunities for outdoor recreation, but too many of its residents live beyond a short walk to a park or green space. We can ensure Virginians have daily access to the outdoors by identifying communities that currently lack access to parks and green spaces and investing resources for parks, green spaces, and public access infrastructure projects. Creating an outdoor access equity model and securing funding for parks, green spaces, and associated infrastructure will help improve daily access to the outdoors across our Commonwealth.

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## INCREASING SUPPORT FOR TRAILS

The pandemic and the resulting increased demands on public parks and trails have confirmed that parks and trails for outdoor recreation and transportation are vital public infrastructure. Virginia must provide dedicated, stable funding and enact more effective policies to help manage trail resources equitably and create a connected state-wide trail system which will promote walkability, prosperity, and help build resiliency. Trails can be designed to connect natural areas which serve as floodplains, manage stormwater, and provide tree canopies to regulate air quality and temperature. Trails can also offer a low-cost transportation option that reduces traffic and air pollution while providing safe places for community members to gather and exercise, increasing the civic and social health of a community.

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## EXECUTIVE SUMMARY

Where and how we build our communities is critical to maintaining our quality of life, boosting equity, and protecting the environment. Smart growth promotes development in and near our cities; towns; and walkable, mixed-use, transit-accessible communities. By encouraging housing – including affordable housing – close to jobs, retail, and services, with streets designed for safe walking and biking with frequent, reliable transit, we reduce driving and pollution, protect natural and historic resources from sprawl, and expand opportunities for those who cannot afford a car or are unable to drive. Current state policies too often fuel car-centric development, but reforming those policies to promote smart growth will bring environmental, health, and economic benefits to all Virginians.

## CHALLENGE

The past 80 years of sprawling development have proven costly, generating longer commutes, record levels of carbon pollution, socio-economic segregation, and the irrevocable loss of historic, natural, and scenic resources. By underfunding transit while subsidizing the development of car-dependent communities, Virginia's land use and transportation policies have forced families to live ever farther from jobs, schools, and other essential destinations. It has contributed to racial and economic segregation by moving jobs farther from people of color, people with disabilities, low-wealth, and other vulnerable populations while prioritizing single family homes with prices out of reach for most people.<sup>1</sup>

Long, expensive commutes reduce productivity, drain household budgets, and disproportionately impact people with disabilities, preventing Virginians from being able to invest in better housing, their children's education, and other

daily needs. A 2019 study from the American Automobile Association (AAA)<sup>2</sup> estimated the cost of annual car ownership at over \$9,000. With the average Virginia family owning a minimum of two cars and accruing between \$18,230-\$36,460 per year in related expenses according to AAA, there is far less income to be put towards putting food on the table, starting a small business, or investing in education. And for individuals and families that cannot afford a car, do not drive, or choose greener transportation, essential services and job opportunities are increasingly out of reach. Sprawling, car-centric development also costs localities and the state far more in terms of infrastructure and destroys countless acres of farmland and forest.<sup>3</sup>

## SOLUTION

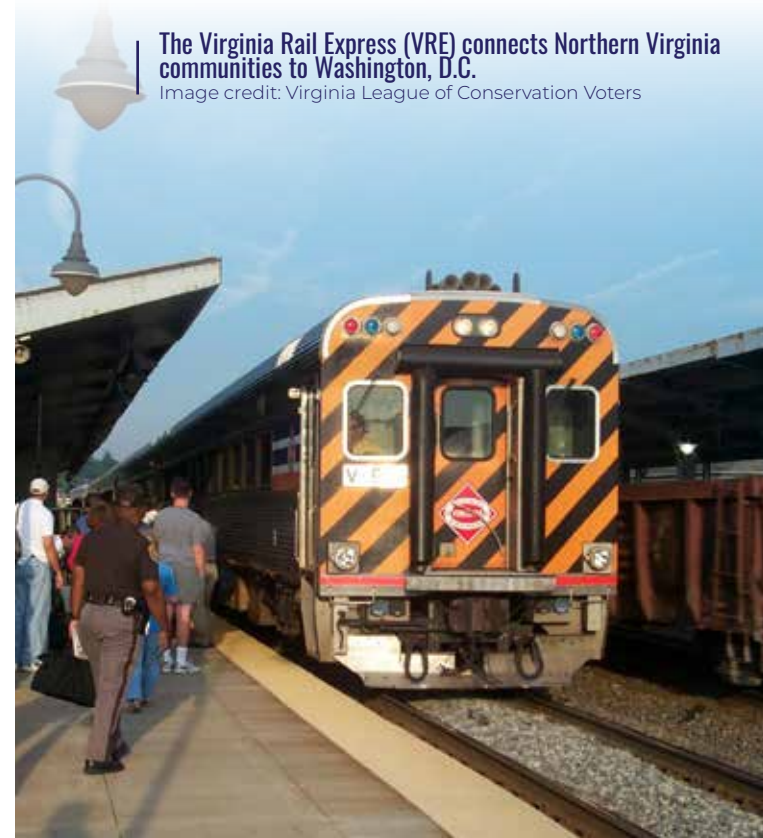
Smart growth represents the Commonwealth's greatest opportunity to reduce vehicle miles traveled, lower state and localities' cost burdens from infrastructure, and build a prosperous future in which people at all levels of the income ladder have a fair chance to get ahead. Compact, walkable, mixed-use, transit-oriented communities (TOCs) with a mix of housing options reduce the amount we have to drive, reduce air and climate pollution, and save families money in combined housing and transportation costs. In-fill development in our existing cities, towns, and inner suburbs allows us to use and modernize existing infrastructure and convert parking lots to livable communities, while installing modern stormwater management. But we need the state to prioritize these places for infrastructure investment.

Diversifying the type and size of our housing stock will provide more affordable options for our modern households. It will allow more people to step on the ladder of homeownership.

Allowing for missing middle housing (accessory dwelling units, duplexes, triplexes, fourplexes and multifamily) near existing public facilities, removing legal code sections and zoning policies that result in racial exclusion and segregation, and expanding inclusionary zoning will expand opportunities for all Virginians.

**Transit-oriented communities (TOCs) with a mix of housing options reduce the amount we have to drive, reduce air and climate pollution, and save families money in combined housing and transportation costs.**

Matching these measures with state and local funding for affordable housing close to jobs and transit will have numerous benefits – reducing driving, providing security and stability for families and children, reducing stress, and improving health. Investments in affordable housing in accessible locations will provide far greater transportation benefits and co-benefits than never-ending spending on road expansion to support ever-longer commutes.



**The Virginia Rail Express (VRE) connects Northern Virginia communities to Washington, D.C.**

Image credit: Virginia League of Conservation Voters

# POLICY RECOMMENDATIONS

Calculate maintenance and replacement needs for existing and aging roads, bridges, water, sewer, schools, and other public buildings, and fully fund the replacement of all facilities in poor condition before funding infrastructure for greenfield development, eliminating poor conditions within the next 10 years.

Incorporate a points system in relevant state agency application processes to prioritize allocation of state road, transit, water, sewer, housing, economic development, and public facilities funds to cities, towns, and to compact, walkable, transit-oriented places in the suburbs, provided these jurisdictions also demonstrate they are accommodating housing affordable for all levels of their workforce.

Increase the state affordable housing trust fund to \$200 million within three years and establish funding prioritization for projects close to jobs and high-quality public transit.

End bans on multi-family housing, and lower minimum lot sizes in Virginia's cities, towns, and suburbs to allow for more affordable housing options. Authorize inclusionary zoning in all localities and make it more flexible for localities.

Conduct a statewide study to identify racial inequities and barriers in Virginia Codes relating to planning, zoning, subdivision, and covenants, and recommend change.



# ENSURING THE RESILIENCE OF VIRGINIA'S FLOOD-PRONE COMMUNITIES

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## EXECUTIVE SUMMARY

Virginians are already seeing the impacts of climate change across the state, from sea level rise along our coastlines to increased rainfall statewide. We must build upon the leadership of recent years to protect Virginians and preserve our natural resources into the future. Although all communities will undoubtedly face tough decisions, chronically underserved communities face disproportionate risks. Community-engaged comprehensive resilience planning and careful investment in adaptation measures will ensure an equitable future for all Virginians as well as the preservation of our natural resources.

## CHALLENGE

Virginians are on the frontlines of climate change. Coastal Virginia faces the highest rate of relative sea-level rise on the East Coast.<sup>1</sup> Rainfall intensity is also increasing, threatening coastal, inland, and riverine communities.<sup>2</sup> This places Virginia's residents at risk and threatens the future of our coastal wetlands and shorelines. Sea level rise and increasing water temperatures threaten to set back decades-long investment in Virginia's Chesapeake Bay and vital coastal ecosystems including the commitment to "no net loss" of wetlands. The chronically underserved and under-resourced communities least able to adapt, plan, and invest in preparedness and protection face the greatest risks from climate change while simultaneously facing compound threats of discrimination.

In recent years, Virginia's leadership has taken important steps to reduce flood risk and build flood resilience. Virginia joined the Regional Greenhouse Gas Initiative and designated 45% of proceeds to the statewide Community Flood Preparedness Fund, with 25% set aside for low-income geographic areas, providing communities access to critically needed funds.

Virginia has undertaken many initiatives to increase coastal protection and plan for climate change and will release a Coastal Resilience Master Plan by the end of 2021. Virginia is the first state to include sea level rise in its tidal wetlands permitting and the Chesapeake Bay Preservation Act.

Some communities have identified billions of dollars in needed resilience investments, while many have not yet begun to calculate the costs. Virginia cannot lose momentum, and must ensure that this vital work continues with the next Governor and General Assembly.

**Virginia could lose much of its tidal wetlands and coastal shoreline by mid-century unless we act now.**

## SOLUTION

Climate change and flooding impact the entire Commonwealth. An equitable and comprehensive approach to flood resilience is needed to protect Virginia's people, places, and resources.

Future resilience planning and programs must be statewide, science-based, inclusive, and ongoing. Mandates for inclusion of climate change impacts in our environmental programs and regulations must be implemented and the involvement of frontline communities must be prioritized. Virginia could lose much of its tidal wetlands and coastal shoreline by mid-century unless we act now to vigorously enforce newly-developed regulations to protect them. Increased riverine flooding threatens the gains we have made on water quality. This argues for continued statewide allocation of resources from the Community Flood Preparedness Fund, with emphasis on nature-based solutions and priority given to low-income Virginians.

We must also ensure transparency and oversight of these resources and continue to prioritize identification of additional sources of funding and financing strategies to support communities as they build capacity and implement resilience solutions.

Communities are already and will continue to experience the negative impacts of flooding. Many impacted Virginians do not have the capacity to protect their homes, businesses, property, and natural resources from repeated flooding. We must work not only on large-scale infrastructure, but also to protect the lives and livelihoods of families and communities.

Finally, limited resources and climate reality necessitate that dialogue begin now to ensure the equitable and cost-effective protection and adaptation of our environment and communities in the future, including consideration of meaningful managed retreat.

**Marsh Sunset - Fort Monroe, Va**

Image credit: Lori A Cash

## POLICY RECOMMENDATIONS

Protect advances on resilience by codifying administrative initiatives, including operation and governance of the Community Flood Preparedness Fund, extension of the Coastal Resilience Master Plan to a statewide plan revised every four years, and adequate resources and talent to maintain and advance comprehensive resilience strategies.

Support policies and funding to protect families and communities, especially underserved and under-resourced communities, increasing community resilience statewide.

Include climate change and resulting impacts in all localities' comprehensive plans to ensure a future that includes equity for all Virginians and continued protection of our natural resources.





# ENSURING VIRGINIANS HAVE DAILY ACCESS TO THE OUTDOORS

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## EXECUTIVE SUMMARY

From the Appalachian Mountains to the Chesapeake Bay and Atlantic Ocean, the Commonwealth of Virginia is abundant with opportunities for outdoor recreation, but too many of its residents live beyond a short walk to a park or green space.<sup>1</sup> We can ensure Virginians have daily access to the outdoors by identifying communities that currently lack access to parks and green spaces and investing resources for parks, green spaces, and public access infrastructure projects. Creating an outdoor access equity model and securing funding for parks, green spaces, and associated infrastructure will help improve daily access to the outdoors across our Commonwealth.

## CHALLENGE

Virginia State Parks, Natural Area Preserves, Wildlife Management Areas, State Forests, and statewide trail systems are spectacular places for our residents to connect to the great outdoors. But for too many Virginians, these parks and public lands are inaccessible due to the distance from home, uneven distribution across the Commonwealth and the lack of facilities compliant with the Americans with Disability Act. And, within communities, race and income play a role in determining the quality and size of parks and green spaces individuals have access to in the United States. More affluent and predominantly White neighborhoods tend to have access to higher quality park systems with more acreage than those with larger low-income and Latinx or Black populations.<sup>2</sup>

**Parks and public lands are inaccessible due to the distance from home, uneven distribution across the Commonwealth, and the lack of facilities compliant with the Americans with Disability Act.**

We must prioritize addressing similar inequities in Virginia by helping communities create new close-to-home parks and green spaces. Furthermore, investments in new public access infrastructure and facilities must be designed and constructed to accommodate people of all abilities to promote inclusion, and programs to connect citizens to our state's public lands and trails must be adopted.

## SOLUTION

- Identify communities across the Commonwealth of Virginia that have poor access to parks and green spaces by creating a statewide outdoor access equity model with guidance provided by stakeholders, including local park and recreation agencies.
- Ensure resources are available to fund park, green space, and public access infrastructure projects by increasing annual funding to the Virginia Land Conservation Fund (VLCF). Doing so will increase the funding available for community park and green space projects, including through the Virginia Outdoors Foundation's Preservation Trust Fund and Get Outdoors grant programs.
- Use state bonds to make outdoor infrastructure investments at Virginia State Parks, Natural Area Preserves, and along statewide trails and bodies of water.
- Expand the uses of the Virginia Clean Water Revolving Loan Fund to include the ability to fund parks and green infrastructure projects in localities with high poverty rates and poor access to parks and green spaces where the fund has flexibility to forgive portions of debt.
- Provide funding to the Department of Conservation and Recreation to hire staff to provide technical assistance to local governments interested in applying to grant programs, including federal grant programs.

## POLICY RECOMMENDATIONS

Direct the Department of Conservation and Recreation to create a statewide outdoor access equity model with guidance provided by stakeholders.

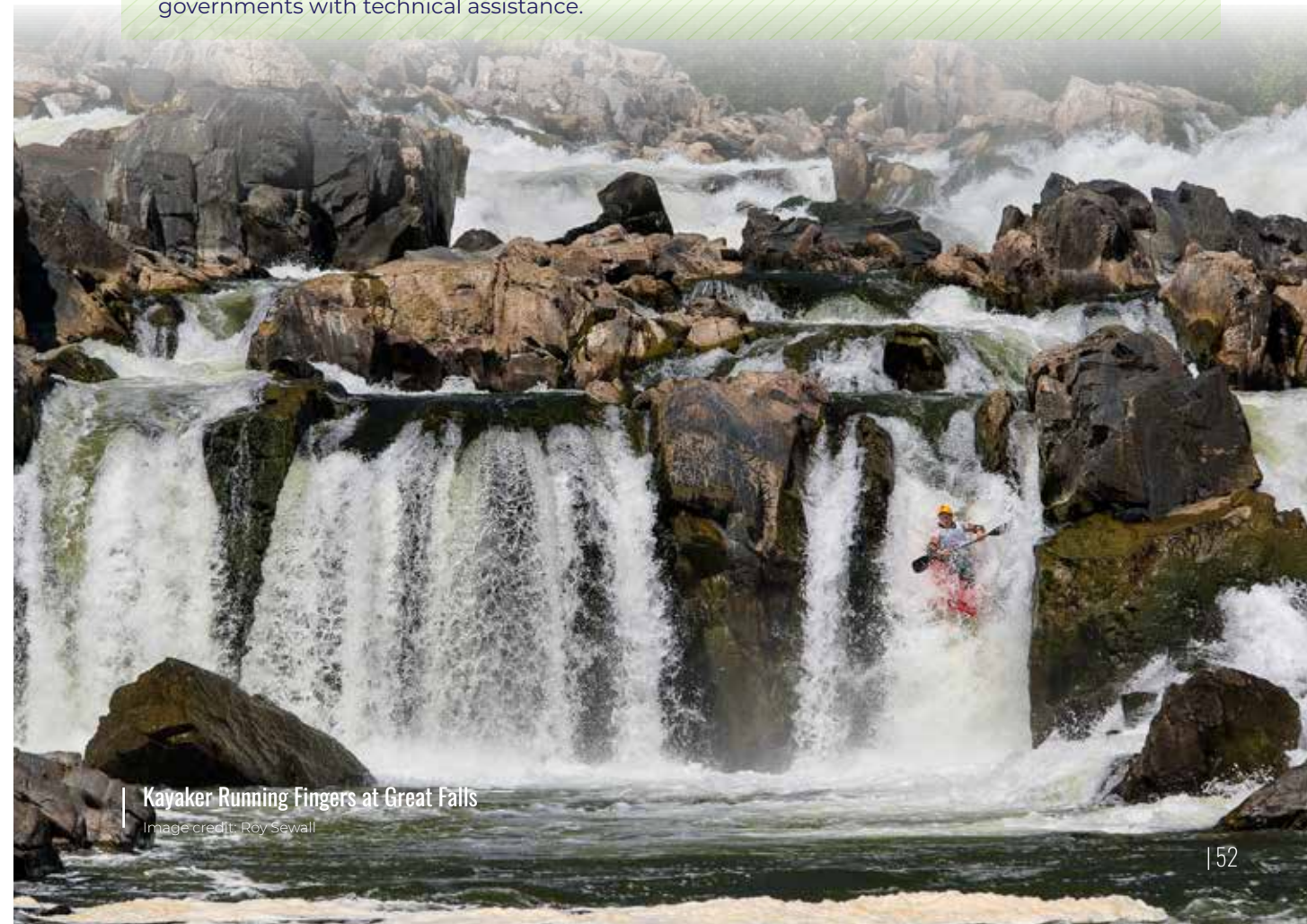
Fund the Virginia Land Conservation Fund (VLCF) at \$40 million annually.

Create a new outdoor recreation community access grant program that gives communities the ability to better plan their outdoor recreation infrastructure investments.

Expand the use of the Virginia Clean Water Revolving Loan Fund to invest in community green infrastructure.

Fund public access infrastructure projects including roads, parking, trails, and facilities for disabled access at Virginia State Parks, Natural Area Preserves, statewide trails, and along bodies of water using \$115 million in bonds as recommended by Virginia Forever.<sup>3</sup>

Hire four additional full-time employees in the Department of Conservation and Recreation for the purposes of leveraging grant funding from federal grant programs and providing local governments with technical assistance.



Kayaker Running Fingers at Great Falls  
Image credit: Roy Sewall



# INCREASING SUPPORT FOR TRAILS

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## EXECUTIVE SUMMARY

The pandemic and the resulting increased demands on public parks and trails have confirmed that parks and trails for outdoor recreation and transportation are vital public infrastructure. Virginia must provide dedicated, stable funding and enact more effective policies to help manage trail resources equitably and create a connected state-wide trail system which will promote walkability, prosperity, and build resiliency. Trails can be designed to connect natural areas which serve as floodplains, manage stormwater, and provide tree canopies to regulate air quality and temperature. Trails can also offer a low-cost transportation option that reduces traffic and air pollution while providing safe places for community members to gather and exercise, increasing the civic and social health of a community.<sup>1</sup>

## CHALLENGE

Outdoor recreation is a way of life for some – from people walking and bicycling to young children who play in parks. All Virginians must have equitable access to outdoor recreation and trails for transportation and to ensure that we have places to hike, bike, boat, fish, hunt, view wildlife, or simply enjoy the quiet and peace of nature.

Connected parks and trails as active transportation networks have been conclusively shown to benefit our communities in significant ways: boosting local economies, improving physical health, achieving a cleaner environment, and providing affordable transportation access for everyone.<sup>2</sup>

Even though Virginia has amazing trails like the Virginia Creeper Trail, Roanoke River Greenway Trail, the High Bridge Trail, and the Appalachian Trail; Virginia’s long-distance and regional trails

are underfunded, understaffed, and overused. A great demand for trails exists across the state but no cohesive system to develop, manage, maintain, and fund the trails exists. “According to the 2017 Virginia Outdoors Demand Survey (VODS), 43% of Virginians ranked trails as the most needed recreational opportunity. A higher percentage of urban residents mentioned trails as most needed.”<sup>3</sup>

**43% of Virginians ranked trails as the most needed recreational opportunity. A higher percentage of urban residents mentioned trails as most needed.**

Virginians need multi-modal transportation and places to recreate; this has never been more clear during the COVID-19 pandemic of 2020-21. The Virginia Capital Trail saw a 42% increase in trail usage while the Canal Walk in Richmond saw a whopping 125% increase in 2020.<sup>4</sup> Even though trails are essential and much-needed, financial needs in the state of Virginia for trail planning, construction, and development remain unmet.

## SOLUTION

The documented benefits to the quality of life of Virginians and the increases in trail use across the state in 2020 demonstrate a clear need for additional miles of trail. Funding should be used to build new trails in addition to extending and maintaining existing trails.

Recurring funding and increased staffing are significantly more impactful for trail development than non-recurring funding due to required project needs and multi-year timelines of trail projects. It is imperative that Virginia set up a source of annual recurring funding for trail planning and construction. All funding for trail planning and construction, whether recurring

or non-recurring, should be distributed in an equitable manner. The administration of trail funding should take into account the differing funding constraints and needs of different size and types of communities. This includes reducing grants’ local match rates for smaller and rural communities so that the amount is proportional to community metrics such as smaller population tax-base, fewer numbers of vehicles, less land area, etc. Distributing funding through VDOT and VA DCR allows funding to be used for the development of all types of trails: paved trails, natural surface trails, and water trails.

## POLICY RECOMMENDATIONS

\$20,000,000 to VDOT for the construction of multi-use trails, feasibility, environmental, and engineering studies, and two FTEs.

\$20,000,000 to DCR for the construction of natural surface trails, feasibility, environmental, and engineering studies, and two FTEs.

\$1,000,000 in funding for grant match funds for low-income communities, communities of color, and smaller localities with a population of less than 25,000 for better connectivity to transportation and recreation. This would be administered by VDOT.<sup>5</sup>

\$100,000 in funding for these communities to promote trail tourism through Virginia Tourism Corporation.

Create a process for designating select trails as official State Trails and directing resources towards trail planning and construction. State Trail designation should be coordinated with DCR and VDOT depending upon trail type.





# ENDNOTES

## BOOSTING SMART GROWTH

<sup>1</sup> Cortright, Joe. *Driven to the Brink: How the Gas Price Spike Popped the Housing Bubble and Devalued the Suburbs*. CEOs for Cities (2008). Report not available following merger of CEOs for Cities into Forward Cities, see Smart Growth America blog: <https://smartgrowthamerica.org/ceos-for-cities-report-driven-to-the-brink>.

<sup>2</sup> *Your Driving Costs: How Much Are You Paying to Drive?* AAA (2019), <https://exchange.aaa.com/wp-content/uploads/2019/09/AAA-Your-Driving-Costs-2019.pdf>.

<sup>3</sup> Burchell, Robert W., *Costs of Sprawl – 2000*, The National Academies of Sciences, Engineering, and Medicine (August 31, 2001), [http://www.trb.org/Publications/Blurbs/Costs\\_of\\_Sprawl\\_2000\\_160966.aspx](http://www.trb.org/Publications/Blurbs/Costs_of_Sprawl_2000_160966.aspx).

## ENSURING THE RESILIENCE OF VIRGINIA'S FLOOD-PRONE COMMUNITIES

<sup>1</sup> Ezer, Tal & Larry P. Atkinson, *Sea Level Rise in Virginia – Causes, Effects and Response*, Virginia Journal of Science, Vol 66 No. 3, page 355 (Fall 2015), <https://digitalcommons.odu.edu/vjs/vol66/iss3/8>.

<sup>2</sup> Allen, Micheal J. & Thomas R. Allen, *Precipitation Trends across the Commonwealth of Virginia (1947 – 2016)*, Virginia Journal of Science, Vol 70 No. 1 (Spring & Summer 2019), <https://digitalcommons.odu.edu/cgi/viewcontent.cgi?article=1447&context=vjs>.

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<sup>1</sup> *2021 ParkScore® Index*. The Trust for Public Land, accessed for Virginia Beach, Norfolk, Chesapeake, Arlington, Richmond, Newport News, Alexandria, Hampton, Roanoke, and Portsmouth (June 22, 2021), <https://www.tpl.org/parkscore>.

<sup>2</sup> Rigolon, Alessandro et al., *Inequities in the Quality of Urban Park Systems: An Environmental Justice Investigation of Cities in the United States*, Landscape & Urban Planning Vol 156 (2018), [https://www.srs.fs.usda.gov/pubs/ja/2018/ja\\_2018\\_jennings\\_003.pdf](https://www.srs.fs.usda.gov/pubs/ja/2018/ja_2018_jennings_003.pdf).

<sup>3</sup> *The Path Forward: Investing in Virginia's Land and Water*. Virginia Forever's Five Year Plan, 2021-2025 (2019), <https://virginiaforever.org/wp-content/uploads/2019/09/20190705-VF-FiveYearPlan.pdf>

## INCREASING SUPPORT FOR TRAILS

<sup>1</sup> *Building community resilience with nature-based solutions: A guide for local communities*. FEMA. (June 2021), [https://www.fema.gov/sites/default/files/documents/fema\\_riskmap-nature-based-solutions-guide\\_2021.pdf](https://www.fema.gov/sites/default/files/documents/fema_riskmap-nature-based-solutions-guide_2021.pdf).

<sup>2</sup> *Benefits of Trails: Rails-to-Trails Conservancy*. Rails to Trails Conservancy (Accessed June 28, 2021), <https://www.railstotrails.org/experience-trails/benefits-of-trails>.

<sup>3</sup> *2018 Virginia Outdoors Plan*. Virginia Department of Conservation and Recreation, Ch 8 (Accessed June 2, 2021), <https://www.dcr.virginia.gov/recreational-planning/document/vopchapt08.pdf>.

<sup>4</sup> Curran, Colleen. *Over 2 Million People Visited James River Park in 2020; Virginia Capital Trail Saw 1.2 Million*. Richmond Times-Dispatch (January 17, 2021), [https://richmond.com/entertainment/over-2-million-people-visited-james-river-park-in-2020-virginia-capital-trail-saw-1/article\\_3a665137-a671-5624-95fc-be4f0fa2702e.html](https://richmond.com/entertainment/over-2-million-people-visited-james-river-park-in-2020-virginia-capital-trail-saw-1/article_3a665137-a671-5624-95fc-be4f0fa2702e.html).

<sup>5</sup> Geverd, Douglas E., *Education Demographic and Geographic Estimates Program (EDGE), Locale Boundaries User's Manual*. National Center for Educational Statistics, Page 11 (December 2015), [https://nces.ed.gov/programs/EDGE/docs/NCES\\_LOCALE\\_USERSMANUAL\\_2016012.pdf](https://nces.ed.gov/programs/EDGE/docs/NCES_LOCALE_USERSMANUAL_2016012.pdf).





Potomac River Fall, Loudoun County, Va  
Image credit: Hugh Kenny

# TRANSPORTATION

Transportation represents the largest source of carbon emissions in Virginia. In order to change that, we need a shift to a cleaner, balanced, and more equitable transportation system. However, a continued focus on highway construction and expansion, the lack of alternatives to driving, and no cap on greenhouse gas emissions mean that the Commonwealth still has a lot of work to do. In addition to making smarter land use decisions as described in our [livable communities](#) chapter, changes should include expanding public transportation, growing rail capacity, electrifying vehicle fleets, and curbing vehicle pollution.

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# EXECUTIVE SUMMARIES AND CONTACT INFORMATION

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### TRANSFORMING TRANSPORTATION

Virginia needs a cleaner, more equitable transportation system. Transportation is the state's largest source of carbon pollution, many roads and bridges need repair, and there are too few alternatives to driving — especially in marginalized communities. There has been recent progress in reorienting transportation around moving people, not just motor vehicles. However, state and regional transportation planning and funding continue to focus too heavily on highway expansion and construction — an approach that is costly to taxpayers, people's health, and the climate while doing little to relieve congestion in the long run. We need to transform this approach to favor cleaner, healthier mobility options that reduce traffic, strengthen our communities, and protect our environment.

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### GUARANTEEING TRANSIT EQUITY

The past year and a half has shown that high-quality, reliable public transit service is essential for Virginians to access their jobs, schooling, healthcare, education, and shopping needs. Beyond transit's vital role in economic growth and social mobility, public transportation is critical to mitigating the climate crisis. Getting Virginians out of their cars and onto the bus, light rail, or Metro requires providing top-notch service and rethinking transit access and affordability. From benches and shelters to GPS live-tracking and zero-fare policies, public transportation can become Virginians' top way to get around with increased investments in our transit systems statewide.

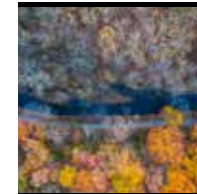
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### BUILDING OUT RAIL CAPACITY

Compelling energy, economic, and environmental benefits flow from maximum use of rail to move both people and goods. Virginia has made significant progress on passenger rail in recent years, but funding is needed to improve the speed, frequency, and reliability of service; extend service to new areas; modernize stations; and improve multimodal connections to them. There needs to be increased attention to freight railroads' needs as well. Rail is pivotal to helping us reach our decarbonization goals. Electrification of mainlines, strategies to switch more trucks to rail, and preservation of abandoned rail corridors for future growth are all vital planning objectives.

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### ACCELERATING TRANSPORTATION ELECTRIFICATION

The transportation sector is the leading source of carbon dioxide pollution in the Commonwealth, and it produces a number of other pollutants that harm our health and environment. The General Assembly took an important step towards reducing these emissions by passing the Clean Cars bill in 2021, helping to make electric vehicles (EVs) more available in Virginia, but many more steps are needed. Rapidly transitioning from pollution producing fossil fuel-powered engines to electric-powered cars, trucks, trains, and buses will produce numerous public health, economic, and climate benefits, creating a cleaner mobility future for all Virginians.

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### CURBING VEHICLE POLLUTION

Noxious exhaust from Virginia's millions of vehicles disproportionately harms the health of people of color and low-income communities and is the largest source of carbon emissions in the state. To fix both the public health and climate pollution problems, the Commonwealth must set a limit on total carbon emissions from tailpipes and tighten that limit annually. Binding limits on pollution also require that we fund clean transportation solutions. The General Assembly should authorize Virginia to join the Transportation and Climate Initiative Program (TCI-P) and reallocate existing transportation funds to support clean transportation while prioritizing overburdened and underserved communities.

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### INCREASING ACCESS TO WALKING & BIKING

Every trip in Virginia starts off on foot. Walking and biking are important modes of transportation on their own but prove even more critical as first- and last-mile connections to rail and transit. Most Virginians don't walk or bike as much as they would like because our infrastructure does not allow them to do so. Biking on our roads often feels unsafe and pedestrian fatalities have surged across the Commonwealth over the last decade. The General Assembly needs to dedicate funding and enact policies that not only keep Virginians safe while walking and biking but actually expand access to these two healthy, affordable, and sustainable ways of getting around.

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# TRANSFORMING TRANSPORTATION

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## EXECUTIVE SUMMARY

Virginia needs a cleaner, more equitable transportation system. Transportation is the state's largest source of carbon pollution, many roads and bridges need repair, and there are too few alternatives to driving — especially in marginalized communities. There has been recent progress in reorienting transportation around moving people, not just motor vehicles. However, state and regional transportation planning and funding continue to focus too heavily on highway expansion and construction — an approach that is costly to taxpayers, people's health, and the climate while doing little to relieve congestion in the long run. We need to transform this approach to favor cleaner, healthier mobility options that reduce traffic, strengthen our communities, and protect our environment.

## CHALLENGE

Significant transportation reforms have been adopted in recent years, including increases in funding for transit, rail, and highway maintenance; the groundbreaking Transforming Rail in Virginia initiative; and the development of SMART SCALE to provide a more objective and transparent basis for selecting projects for funding. However, too much of our state and regional transportation funding continues to be spent on wasteful and damaging highway projects. Even accounting for recent transit and rail funding increases, roughly 73% of the FY2022-27 Six-Year Improvement Program is allocated to highways. This outsized investment in asphalt continues despite the fact that decades of studies and experience have shown that new and wider highways frequently fail to provide long-term congestion relief since they incentivize sprawling development and encourage people to drive more, thereby worsening the heavy traffic they were intended to fix.<sup>1</sup>

**With over 85 billion miles driven each year in Virginia, transportation generates almost half of all statewide carbon pollution.**

This asphalt-centered approach also has profound effects on our communities and environment. With over 85 billion miles driven each year in Virginia,<sup>2</sup> transportation generates almost half of all statewide carbon pollution,<sup>3</sup> and communities of color and under-resourced communities bear a disproportionate share of the health burdens from transportation-related pollution.<sup>4</sup> In addition, the number of pedestrians hit and killed by cars is rising, and there has been a disproportionate impact on people of color as well as people walking in low-income communities.<sup>5</sup> Moreover, new roads destroy natural resources such as forests and wetlands, which absorb carbon and increase communities' resilience to sea level rise and flooding. New roads often do little to improve mobility and access for the hundreds of thousands of Virginians who do not own a personal vehicle and instead rely on other transportation methods.

## SOLUTION

Meeting the climate crisis and improving the health, equity, and mobility of Virginians requires moving away from a transportation paradigm focused on ever-increasing asphalt. It requires focusing funding on maintaining existing infrastructure through a "fix it first" approach and shifting substantial amounts of our state and regional transportation budgets from highway construction to transit, rail, bicycle, and pedestrian projects, as well as telework. Such a shift is also essential for the Commonwealth to remain economically competitive. Affordable transit and other alternatives to driving can provide critical access to jobs, healthcare, and essential services.

Today's businesses increasingly seek to locate in walkable communities with good access to public transportation, with Amazon's location of its second headquarters next to two Metro stations just one of many examples.

In addition to shifting state and regional transportation funding, we need policy reforms to make pollution reduction and addressing climate change a central component of our transportation planning and funding processes. We must strengthen consideration of the climate change effects of transportation plans and project proposals (as well as the impacts of climate change on transportation) and ensure that state and regional plans serve to reduce — rather than exacerbate — emissions of greenhouse gases and other pollutants. SMART SCALE and regional prioritization processes must give greater weight to greenhouse gas emissions and climate change-related effects. In addition, the Commonwealth must set a specific goal of reducing vehicle miles traveled (VMT) by investing in alternatives to driving, and step up efforts to accelerate the electrification of vehicles and expand charging infrastructure for the driving we continue to do.

## POLICY RECOMMENDATIONS

Increase the share of state and regional funding for transit, rail, bicycle, and pedestrian infrastructure to 50% by 2030.

Strengthen the "fix it first" requirement in Virginia Code § 33.2-358, to ensure that road funding first covers maintaining and repairing existing infrastructure.

Prioritize carbon pollution reduction in transportation planning and funding, including strengthening the review of climate change effects for major projects, requiring state and regional plans to cut carbon emissions and reduce vehicle miles traveled (VMT), and increasing the weight given to climate factors in funding prioritization processes.

Apply prioritization standards similar to SMART SCALE to all regional funding and strengthening environmental review processes for local and regionally funded projects.

Set a specific goal to reduce statewide VMT by 20% from 2021 levels by 2050.





# GUARANTEEING TRANSIT EQUITY

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## EXECUTIVE SUMMARY

The past year and a half has shown that high-quality, reliable public transit service is essential for Virginians to access their jobs, schooling, healthcare, education, and shopping needs. Beyond transit's vital role in economic growth and social mobility, public transportation is critical to mitigating the climate crisis. Getting Virginians out of their cars and onto the bus, light rail, or Metro requires providing top-notch service and rethinking transit access and affordability. From benches and shelters to GPS live-tracking and zero-fare policies, public transportation can become Virginians' top way to get around with increased investments in our transit systems statewide.

## CHALLENGE

Virginia's forty-plus transit providers are made up of incredibly resourceful and dedicated public servants, but decades of underfunding and fiscal uncertainty have produced transit systems far from befitting our prosperous state with its annual GDP of \$556 billion. Too often, bus riders are treated like second-class citizens, forced to wait up to an hour without benches or shelters to protect them — and that's if the buses come at all. In 2018, riders of Hampton Roads Transit (HRT) had to deal with 18,653 scheduled buses that never showed up.<sup>1</sup>

**In 2018, riders of Hampton Roads Transit (HRT) had to deal with 18,653 scheduled buses that never showed up.**

Virginia's transit providers are doing the best they can with limited funding for operational costs that in turn hinders service improvements and better wages; two of our state's biggest bus systems—HRT and the Greater Richmond Transit Company—were ranked two of the three worst-funded public transit systems in the

country per capita.<sup>2</sup> In the absence of adequate funding and infrastructure improvements, such as better sidewalks and bus lanes, transit providers cannot invest in modernizing their systems to provide the opportunities needed for more reliable, safe, and affordable service. These include high-quality bus-stops and bike shelters, user-friendly apps, more full-time salaried bus drivers, electric fleets, increased accessibility for differently abled riders, and expanded operation hours that support lower-income workers.

When it comes to the climate crisis, the single worst contributor in the Commonwealth that has the largest impact per ton of emissions are light-duty passenger vehicles.<sup>3</sup> We simply cannot seriously meet our climate goals, without reducing the greenhouse gas emissions (GHG) from our transportation by 43% by 2030.<sup>4</sup> Even if the U.S. is able to switch 70 million drivers to EVs, we still need to reduce per-capita vehicle miles traveled (VMT) by 20% in the next nine years via solutions that include increased transit ridership.<sup>5</sup>

## SOLUTION

If equitable climate change mitigation is an executive and legislative priority, as evidenced in Virginia's electric vehicle and fare free transit program commitments, the executive administration and state legislators must elevate transit as a climate policy priority so all Virginians reap the benefits of changes in our public transportation system that are designed to meet the climate crisis.<sup>6,7</sup>

Transit systems provide countless economic opportunities to small, large, rural, and urban municipalities alike. Transit agencies need coordinated state, regional, and local support to increase service access and affordability, rider and pedestrian safety, improve service amenities, and reduce local transportation pollution.

Government support allocated in this manner must ensure people-of-color and low-income riders, who often rely on local transit systems and pay a disproportionate amount of their household income on transportation, directly benefit from these types of improvements.

To provide high-quality, reliable public transit service that also increases ridership and helps the state meet its climate change and resiliency goals, Virginia must continue to increasingly shift transportation funding into transit systems

and transit-oriented development. This will develop a state budget that modernizes our transit systems and increasingly allocates funding to and builds service capacity in communities of color and low-income areas. These riders should directly benefit from these investments, having borne the burden of transportation emissions and relied on transit for generations to support their families, connect with their community, and meet daily and emergency food, health, and education needs.<sup>8</sup>

## POLICY RECOMMENDATIONS

Increase transit and rail capital and operating funding from the 2020 omnibus levels to at least 50% of the entire state transportation budget by 2030 (see also: *Transforming Transportation*, pg 67).

Remove the funding cap of 25% on Virginia's zero-fare program, and sustain its current funding levels, so transit systems can remain fare free over the next 3-5 years.

Advance recommendations from the Department of Rails & Public Transportation's Transit Equity & Modernization Study.

Through executive and legislative action, champion public transportation as a central strategy to meeting Virginia's climate change mitigation and resilience goals.

Require VDOT to support the conversion of arterial lanes to dedicated bus lanes to reduce VMT and GHG emissions through transit ridership.



Biker on Mount Vernon Trail  
Image credit: Robin Kent



# BUILDING OUT RAIL CAPACITY

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## EXECUTIVE SUMMARY

Compelling energy, economic, and environmental benefits flow from maximum use of rail to move both people and goods. Virginia has made significant progress on passenger rail in recent years, but funding is needed to improve the speed, frequency, and reliability of service; extend service to new areas; modernize stations; and improve multimodal connections to them. There needs to be increased attention to freight railroads' needs as well. Rail is pivotal to helping us reach our decarbonization goals. Electrification of mainlines, strategies to switch more trucks to rail, and preservation of abandoned rail corridors for future growth are all vital planning objectives.

## CHALLENGE

Virginia's investments between 2008 and 2019 in improving and expanding passenger rail service resulted in a 31% increase in passenger rail service, a 65% increase in ridership, and expanded daily Amtrak Regional service to 2.5 million more Virginians.<sup>1</sup> In 2019, our Regional trains carried over 924,000 passengers – taking over 187 million passenger miles off our roads, reducing fuel consumption by nearly 3.9 million gallons, and preventing the release of 35,000 metric tons of CO2 pollution.<sup>2</sup>

The passenger experience needs continued improvement. Train travel-times and reliability are less than ideal, many stations need repair and updating, and transit connections between rail stations and activity centers are often lacking.

Additional service is needed as well. Our passenger rail network is primarily set up for north-south travel and there is very limited east-west service. Train travel is less polluting and more energy efficient than driving. Electrifying rail in Virginia would be much cleaner, but cost and

other barriers have blocked this so far.

In terms of freight, a central challenge is that Class One railroads are privately owned and driven by a focus on maximizing returns to shareholders rather than the public interest. Recently, the freight railroads have focused on downsizing and disinvesting their assets and workforce, leaving our roadways and truckers to take on the additional freight movement.

## SOLUTION

Since December 2019, the state has announced agreements with CSX and with Norfolk Southern to purchase a total of 412 miles of railroad right-of-way and 251 miles of railroad trackage, as well as construct 50 miles of new railroad trackage and double railroad capacity between Washington, DC and Virginia by expanding the Potomac River railroad crossing.<sup>3</sup> These agreements, called the Transforming Rail in Virginia program (TRVA), will allow six new roundtrip Amtrak Regional trains, extension of service from Roanoke to Christiansburg, and five more Virginia Railway Express trains on the Fredericksburg line (including weekend service). Additionally, in 2020 the Virginia General Assembly created the Virginia Passenger Rail Authority (VPRA) to own, maintain, implement, and operate the Commonwealth's passenger rail network.

**The Transforming Rail in Virginia program will reduce the travel time of our trains and increase their reliability.**

Funding for the TRVA program is essential. In addition to increasing service, the projects identified in the TRVA should reduce the travel time of our trains and increase their reliability. Implementation of these and other projects also depends on continuing to set up the VPRA.

The state is currently conducting a feasibility study for the return of direct east-west passenger rail service along the Commonwealth Corridor as part of their 2022 Virginia Rail Plan; and they are updating their station modernization and improvement plan.

The TRVA agreements will allow for future electrification of our rail service when the DC-Richmond-North Carolina corridor is fully built out. We should look for opportunities such as dual-mode engines and other technologies that will allow the state to begin constructing electrified portions of our rail corridors.

We should also look at incentives for moving freight from trucks to tracks while also being prepared for additional abandonments of rail lines by the Class One railroads and ensure the Commonwealth is ready to purchase them for future passenger and/or freight rail service. Elected representatives should be vigilant for opportunities to make freight railroads more responsive and responsible to public interest concerns.

## POLICY RECOMMENDATIONS

Protect rail funding and follow through on the Transforming Rail program and complete the Commonwealth Corridor feasibility study of returning east-west (New River Valley-Charlottesville-Richmond-Hampton Roads) passenger rail service across the state.

Modernize rail stations and provide affordable and reliable multimodal connections between stations and activity centers.

Authorize a state study of the opportunities to expedite the electrification of our rail corridors.

Fund a rigorous study of the economic and environmental life-cycle costs and benefits of adding new freight capacity on rail versus on the highway in the I-81 Corridor.

Protect any potentially abandoned rail corridors through public purchase for future service and/or rails with trails.

Virginia's investments in improving and expanding passenger rail service expanded Amtrak Regional to 2.5 million more Virginians.

Image credit: Doug Riddell





# ACCELERATING TRANSPORTATION ELECTRIFICATION

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## EXECUTIVE SUMMARY

The transportation sector is the leading source of carbon dioxide pollution in the Commonwealth, and it produces a number of other pollutants that harm our health and environment. The General Assembly took an important step towards reducing these emissions by passing the Clean Cars bill in 2021, helping to make electric vehicles (EVs) more available in Virginia, but many more steps are needed. Rapidly transitioning from pollution producing fossil fuel-powered engines to electric-powered cars, trucks, trains, and buses will produce numerous public health, economic, and climate benefits, creating a cleaner mobility future for all Virginians.

## CHALLENGE

The transportation sector generates almost half of Virginia's carbon dioxide emissions.<sup>1</sup> These emissions have negative climate, public health, and economic impacts, and disproportionately affect low-income populations and communities of color, who breathe 66% more air pollution from vehicles than white residents on average in the Northeast and Mid-Atlantic.<sup>2</sup> As the world finds itself in this decisive decade to avoid the worst impacts of climate change, these toxic emissions must be addressed as quickly as possible.<sup>3</sup>

Virginia-specific vehicular particulate pollution (PM<sub>2.5</sub>) accounts for 92 deaths, 2,600 cases of exacerbated asthma, and 10,000 lost workdays each year.<sup>4</sup> When considering transportation emissions in their entirety, these emissions led to 750 premature deaths in Virginia in 2016.<sup>5</sup> To comprehensively address carbon pollution, cleaner transportation alternatives such as transit and rail need to be expanded, and thoughtful land use incentivized and pursued, in order to reduce vehicle miles traveled (see *Guaranteeing Transit Equity*, pg 63 and *Increasing Access*

to *Walking & Biking*, pg 71), but we must also simultaneously accelerate transportation electrification to eliminate emissions from the vehicle trips that remain.

While electric cars and buses are far cheaper to own in the long run, and battery prices are falling, the higher upfront purchase price is keeping these benefits out of reach for many Virginians, particularly low- and moderate-income communities.<sup>6,7,8</sup> Many households also lack access to reliable charging infrastructure, as roughly 40% of U.S. households don't park within 20 feet of an electrical outlet, making access to public EV charging essential for widespread adoption.<sup>9</sup> Bridging these affordability and accessibility gaps will be critical to ensure a successful and equitable transition to electric mobility.

## SOLUTION

Every gas-powered vehicle that gets replaced with an electric model helps clean our air and supports the Commonwealth's climate goals. When powered by Virginia's current electricity mix, EVs produce up to 70% fewer emissions compared to internal combustion engine vehicles.<sup>10</sup> And as Virginia's grid gets cleaner and cleaner, the EVs on our roads will too. The more Virginia transitions to electrified transportation, the more the entire Commonwealth benefits.

**When powered by Virginia's current electricity mix, EVs produce up to 70% less emissions compared to internal combustion engine vehicles.**

By providing thoughtfully designed financial incentives that make EVs, electric buses, and e-bikes more affordable, Virginia can help put electric mobility within reach for more people and accelerate adoption rates.<sup>11</sup>

Reliable access to charging infrastructure for every neighborhood will also help accelerate transportation electrification. Current studies and investments are underway to help Virginia map out and implement further infrastructure developments, but simple fixes exist that can also help improve the accessibility of existing infrastructure.<sup>12,13</sup>

Virginia's government can also lead by example by electrifying its fleet. Progress is already underway in the City of Roanoke, where fueling and maintenance costs have been reduced by 80%. State and municipal fleets are uniquely poised to take advantage of the lifecycle savings EVs provide<sup>14</sup> Virginia needs a roadmap to ensure state and municipal vehicle fleets are electrified as soon as possible.<sup>15</sup>

From reduced greenhouse gas emissions and decreased dependency on foreign oil, to better air quality and the creation of new local jobs, transitioning to electric vehicles is good for both state residents and our economy as a whole. Supporting Virginians in this transition means making electric mobility options more accessible and affordable while leading by example.

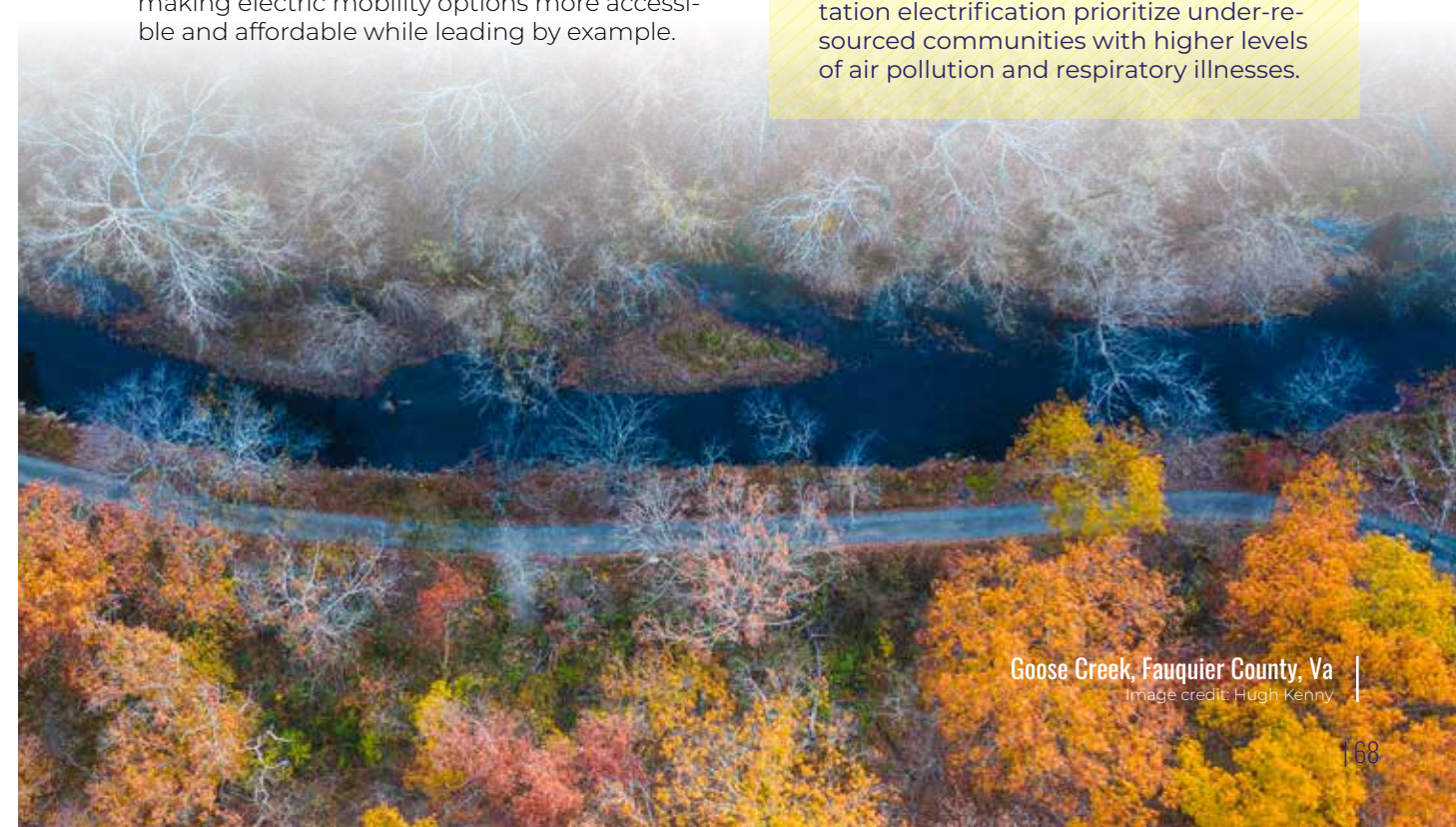
## POLICY RECOMMENDATIONS

Allocate robust funding for financial incentives to expand access to electrified mobility and help Virginians overcome the higher upfront cost of EVs, electric school and transit buses, and e-bikes.

Improve access to charging infrastructure by providing funding for EV chargers, protecting EV charging stations, and streamlining EV charging signage.

Conduct a fleet electrification feasibility study of all publicly-owned vehicles in Virginia, including inventory, critical replacement list, cost analysis of EV fleet adoption targets, and identify opportunities to implement fleet pools and utilize vehicle-to-grid technology, prioritizing vehicles used in areas with the poorest air quality.

Ensure all efforts to accelerate transportation electrification prioritize under-resourced communities with higher levels of air pollution and respiratory illnesses.



Goose Creek, Fauquier County, Va  
Image credit: Hugh Kenny



# CURBING VEHICLE POLLUTION

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## EXECUTIVE SUMMARY

Noxious exhaust from Virginia's millions of vehicles disproportionately harms the health of people of color and low-income communities and is the largest source of carbon emissions in the state.<sup>1</sup> To fix both the public health and climate pollution problems, the Commonwealth must set a limit on total carbon emissions from tailpipes and tighten that limit annually. Binding limits on pollution also require that we fund clean transportation solutions. The General Assembly should authorize Virginia to join the Transportation and Climate Initiative Program (TCI-P) and reallocate existing transportation funds to support clean transportation while prioritizing overburdened and underserved communities.

## CHALLENGE

A fundamental problem with our transportation system is that the people who suffer the worst from its pollution tend to enjoy its conveniences the least. Transportation is the largest source of carbon dioxide pollution in Virginia.<sup>2</sup> The deceptively cheap price of gasoline and diesel encourages more driving, while the low-income communities most vulnerable to the added stressors of climate change are the ones most likely to be impacted by them.<sup>3</sup> In addition, the health problems caused by the soot, smog, and ozone from car exhaust are inflicted on people who live and work in close proximity to high-traffic areas. Those communities are disproportionately BIPOC and low-income.<sup>4</sup>

Two policy gaps exacerbate these inequities. First, the true cost to society of burning gasoline and diesel is not reflected in the price at the pump. This encourages people to buy more gasoline than they would if the full cost and health harms of gasoline were incorporated into the price. Many of the people buying the fuel do not

pay the unfair health costs associated with the pollution their driving causes, though they do enjoy the benefits.

Second, Virginia has no policies in place to prevent transportation pollution from increasing. Fuel efficiency standards and state inspections provide some limit to pollution, but the total vehicle miles traveled in Virginia continues to increase, and with it, total air pollution, causing 750 premature deaths annually.<sup>5</sup>

This pattern of ever escalating dependency on polluting cars and trucks will continue, unless the policies that created it are changed.

## SOLUTION

**Limiting carbon emissions from tailpipes and tightening that limit annually is essential. That binding limit on pollution also requires that we fund clean transportation solutions.**

In addition to reallocating funding away from carbon-intensive transportation priorities, a boost from new funding is essential to swiftly transition to low-carbon transportation, while also increasing equity and reducing air pollution in overburdened and underserved communities.

Similar to the Regional Greenhouse Gas Initiative (RGGI), additional transportation funding can be provided by the Transportation and Climate Initiative Program (TCI-P), which would limit carbon emissions from transportation fuel. That limit would gradually tighten every year. As a further benefit, other pollutants from vehicle exhaust would also decrease, resulting in improved public health.

Under TCI-P, gasoline and diesel wholesalers would pay a fee for the carbon pollution caused when end users burn the fuel. The fees are expected to result in an average \$300 million a year<sup>6</sup> in proceeds to Virginia, providing the necessary resources to invest in projects that reduce vehicle miles traveled and expand Virginians' ability to engage with their communities both economically and socially.

The resulting price increase at the gas pump would be substantially less than regular fluctuations in gas prices (see *Figure 1*) below. That modest increase would be a small nudge to drivers to choose alternatives: combine trips, buy more fuel-efficient or electric vehicles, or take public transit. The \$300 million/year in proceeds will make those alternatives more prevalent and accessible, especially for people who have been historically underserved or overburdened.

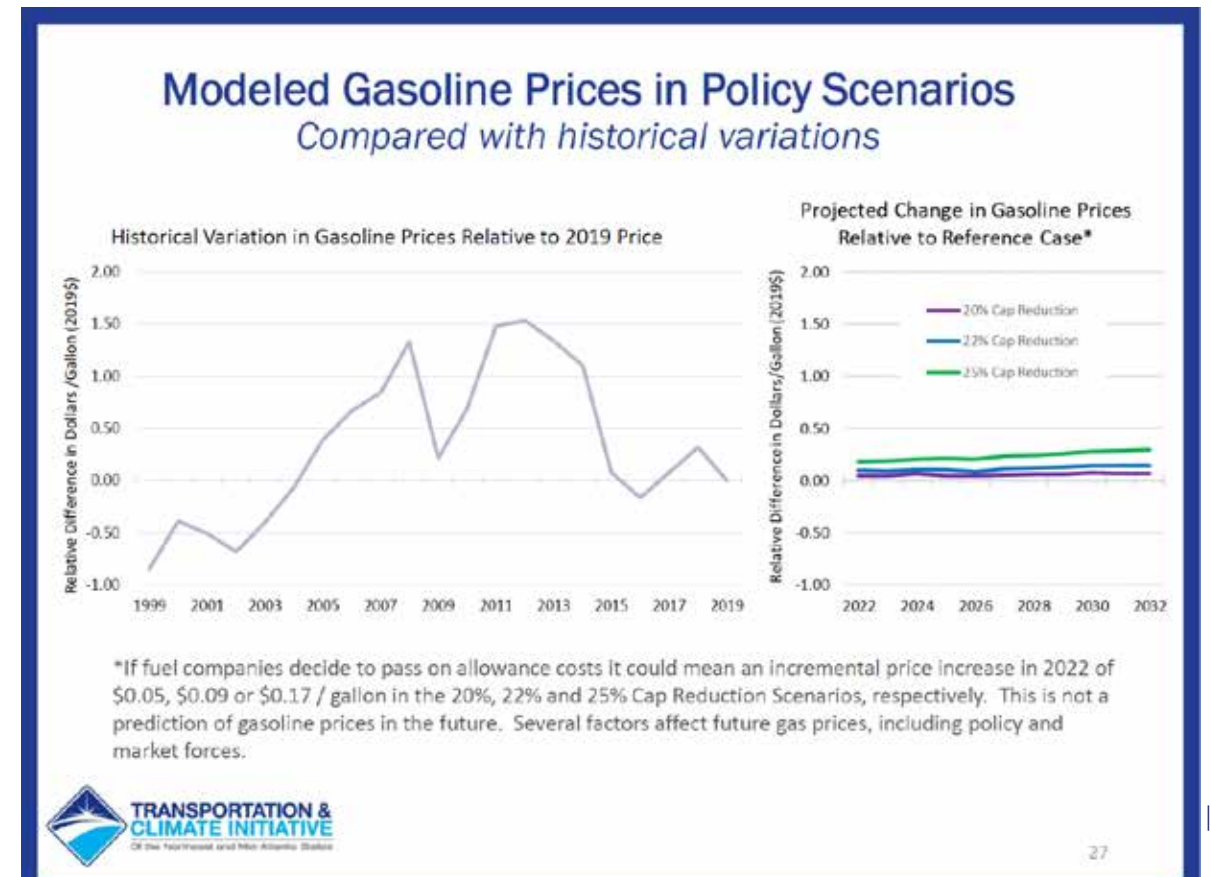
| Figure 1

## POLICY RECOMMENDATIONS

Authorize Virginia to join the Transportation and Climate Initiative Program (TCI-P) and dedicate all proceeds from its carbon pollution fees towards projects that reduce transportation emissions, prioritizing overburdened or underserved communities.

Reallocate transportation funds to fully support equitable access to reliable transit, new walking and biking infrastructure, and a swift transition to electrified transportation (see *Transforming Transportation*, pg 61).

Allocate \$2 million for localized air quality monitoring of PM<sub>2.5</sub> levels at high-traffic areas in overburdened neighborhoods.





# INCREASING ACCESS TO BIKING & WALKING

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## EXECUTIVE SUMMARY

Every trip in Virginia starts off on foot. Walking and biking are important modes of transportation on their own but prove even more critical as first- and last-mile connections to rail and transit. Most Virginians don't walk or bike as much as they would like because our infrastructure does not allow them to do so. Biking on our roads often feels unsafe and pedestrian fatalities have surged across the Commonwealth over the last decade. The General Assembly needs to dedicate funding and enact policies that not only keep Virginians safe while walking and biking but actually expand access to these two healthy, affordable, and sustainable ways of getting around.

## CHALLENGE

Virginia will not achieve its climate goals until walking and biking are safer. As transportation investments continue to be made in rail and transit systems, Virginians need safe ways to access these networks while reducing their carbon footprints.

**43% of people report the desire to ride bicycles more<sup>1</sup> but many are limited by safe cycling infrastructure access.**

Forty-three percent of people report the desire to ride bicycles more<sup>1</sup> but many are limited by safe cycling infrastructure access. Additionally, there is a high percentage of low-income families who rely solely on walking and biking for transportation. Pedestrian deaths per billion vehicle miles traveled (VMT) in Virginia increased in 2020, although car traffic was reduced overall, highlighting a need for safer infrastructure.<sup>2</sup> As road and pedestrian fatalities continue to climb, Black and brown pedestrians are up to twice as likely to be killed.<sup>3</sup>

Virginia's dedicated trail budget is a great start but falls short of making major infrastructure changes that will save lives by physically separating people biking and walking from drivers. Furthermore, bicyclists need the proven crash reduction benefits from having the freedom to yield at stop signs.

Virginia is one of four states that regularly denies crash victims damages and recourse due to our contributory negligence law, which states a party to a crash found to be even 1% at fault is not entitled to damages that would cover medical bills. This especially impacts the pedestrian and biking communities, particularly those of low-income populations or populations of color, who must go to great, sometimes impossible, lengths to prove their innocence. These populations are also the least likely to be insured or be able to pay expensive medical bills.

## SOLUTIONS

### Increased funding for multi-use trails with a transportation focus

Nothing is safer for people biking and walking than physical separation from drivers. Localities need funding from all government levels to build solutions to increased traffic fatalities.

### Allow bicyclists and pedestrians more freedom<sup>4</sup> to choose their safest course

The Safety Stop, which allows bicyclists to yield at stop signs, was shown to contribute to a 23% reduction in bike crashes at intersections in a Delaware 5-year study.

## More e-bikes

According to the Federal Highway Administration, automobiles are used for 46% of trips under three miles. E-bikes help to break the cycling barrier for people of different physical abilities and fitness levels. E-bikes also provide the benefits of access to employment, education, and utility that cars do at a small fraction of the upfront price and maintenance costs.<sup>5</sup> However, the upfront cost of e-bikes remains an additional barrier.

## Equilibrate access to post-crash damages

Join 46 other states in replacing contributory negligence with comparative negligence, allowing financial coverage comparable to fault for injured parties in a crash. Medical bills for an injured pedestrian struck while in a cross-walk shouldn't be denied because of "1% fault", which could be arbitrarily determined related to things such as the lighting or time of day.

## A commitment to ending traffic fatalities in Virginia across all agencies and policies

The safer transportation, the more freedom we have to choose cleaner modes. It will take every level to achieve Vision Zero, a resolution to lower traffic fatalities in Virginia to zero.

# POLICY RECOMMENDATIONS

Increase annual multi-use trail budget to \$20 million, providing access to life-saving projects across the Commonwealth.

Enact "Safety Stop" policy, allowing bicyclists to reduce crash probability.

Establish an e-bike rebate program, increasing access to transportation for all, e.g. a 30% rebate, up to \$450, on the purchase price of a qualifying e-bike.

Enact a Comparative Negligence policy for vulnerable road users, removing barriers to damages and increasing medical coverage for injured pedestrians and bike riders.

Commit to reaching Vision Zero by 2050, with a 50% reduction in death by vulnerable road users over 2009 levels by 2035. Focus on our most vulnerable, prioritize reducing speeding, and increase dedicated walking and biking infrastructure.



Biking Mural in Richmond, Va |  
Image credit: John Martin



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# CLEAN ENERGY DEVELOPMENT

Virginia has enacted significant policy to move the Commonwealth towards a clean energy future. With the passing of the Virginia Clean Economy Act, the state is on a path to zero carbon emissions from the energy sector by 2050. Through the Clean Energy and Community Flood Preparedness Act, Virginia joined the Regional Greenhouse Gas Initiative. In order to meet those lofty goals, we must defend and expand upon these clean energy commitments, including responsibly developing clean energy infrastructure, ramping up energy efficiency and solar investments, and ensuring an equitable transition to a clean energy economy.

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# EXECUTIVE SUMMARIES AND CONTACT INFORMATION

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### BUILDING AN EQUITABLE CLEAN ENERGY ECONOMY FOR COMMUNITIES & WORKERS

Virginia has made progress in addressing climate change, but we must prioritize supporting the people and communities that have been dependent on fossil fuels to ensure that they are not left behind. Virginia must optimize this moment to rebuild communities devastated by decades of fossil fuel dependency, connect impacted communities to new economic opportunities, and ensure that all environmental impacts of fossil fuels are remediated. As we transition to a clean energy economy, we have the opportunity to revitalize these communities and prioritize people most impacted by the transition, while also growing the workforce to include historically overlooked communities.

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### SLASHING POLLUTION & ENERGY BILLS WITH VIRGINIA'S UNTAPPED RESOURCE: ENERGY EFFICIENCY

Virginia must make energy efficiency a bedrock component of our energy mix in order to lower Virginia's rising energy bills and excess carbon pollution. Reducing inequitable energy burdens is especially important for low- and middle-income households, who pay electric bills that are the nation's 6th highest and electric rates that are among the highest in the region. Without further action, our citizens, health, environment, and economy will continue to be unnecessarily sapped by our outdated and inefficient energy system.

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### BRINGING MORE RESILIENT ENERGY TO VIRGINIA COMMUNITIES

With the Virginia Clean Economy Act, Virginia is poised to embark on a massive investment in large-scale solar and wind installations, and although such resources are necessary to decarbonize the power sector, such facilities suffer from the same reliability risks as other large-scale power plants. Small-scale energy resources, especially when paired with storage, are a necessary complement to larger resources. They improve grid reliability, reduce pressure on agriculture and forest land, and provide more jobs per megawatt compared to larger resources. Virginia must remove barriers to customer-owned clean energy, strengthen the renewable portfolio standard, and promote solar-plus-storage solutions for electricity resilience.

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### MAXIMIZING BENEFITS & MINIMIZING IMPACTS OF UTILITY SCALE SOLAR

Virginia's use of electricity and reliance on large-scale centralized power generation comes at a price. Even with the cleanest power generation projects, best practices should be employed to optimize energy output while minimizing environmental impacts. Utility-scale solar, by its very nature, uses many acres of land, which – if poorly developed – can unnecessarily harm primarily agricultural and forested lands. While renewable energy projects must be used to meet the Commonwealth's energy demand going forward, Virginia's executive branch, General Assembly, and regulators should strive to minimize the environmental impacts while maximizing the benefits of solar.

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### ENSURING RESPONSIBLE DEVELOPMENT OF OFFSHORE WIND

With a pathway to produce 5200 megawatts of offshore wind (OSW) by 2035 and Dominion Energy on track to deliver half of that power by 2026, Virginia is well on its way to confronting the climate crisis and realizing the creation of thousands of jobs supporting its industry. Virginia must now ensure that OSW is done right, meaning it is brought online in a way that is fair, equitable, and beneficial for all Virginians. In particular, this means ensuring that the OSW job opportunities and training/educational programs are available, affordable, community-based, and widely promoted throughout the Commonwealth. It also means that OSW is responsibly sited both offshore and onshore with its transmission lines.

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## EXECUTIVE SUMMARY

Virginia has made progress in addressing climate change, but we must prioritize supporting the people and communities that have been dependent on fossil fuels to ensure that they are not left behind. Virginia must optimize this moment to rebuild communities devastated by decades of fossil fuel dependency, connect impacted communities to new economic opportunities, and ensure that all environmental impacts of fossil fuels are remediated. As we transition to a clean energy economy, we have the opportunity to revitalize these communities and prioritize people most impacted by the transition, while also growing the workforce to include historically overlooked communities.

## CHALLENGE

14,000 Virginians are employed in fossil fuel extraction, and 10,000 are employed in fossil fuel electricity generation, transmission, and distribution.<sup>1,2</sup> Many of these jobs will be lost in the coming decades. Approximately 40 fossil fuel power plants currently operational throughout Virginia must be retired in order to meet the state's carbon goals, and many have already shut down due to market changes.<sup>3</sup> Those plants are disproportionately located in low-income communities and communities of color.<sup>4,5</sup> The decline in the coal industry in recent decades has already resulted in severe declines in local tax revenues and job losses in Southwest Virginia.

### Shuttered power plants and mines leave behind environmental hazards with insufficient funding for clean up to remediate the spaces

Shuttered power plants and mines leave behind environmental hazards with insufficient funding for clean up or commitments from operators to remediate the spaces. As new energy re-

sources are constructed, the communities that are losing the economic benefits of fossil fuel production aren't necessarily the communities reaping the benefits of Virginia's clean energy economy. Fossil fuel declines result in a decline in tax revenue, which impacts the ability of local governments to maintain and invest in critical infrastructure, further harming economic development potential and impacting public health. These communities often face the overlapping challenges of economic downturn and environmental degradation.

On the opposite side, as a growing clean energy industry blossoms, clean energy employers have difficulty finding enough Virginia workers, and training opportunities are inaccessible to many. Companies will be forced to outsource jobs, and the clean energy industry will be less diverse without new equitable training and recruitment programs.

## SOLUTION

Justice requires that the legacy impacts of the fossil fuel industry be addressed and that communities be compensated and prioritized in the transition. It is critical to engage impacted people in economic transition planning and decision-making, and to reinvest in communities where divestment has occurred for decades. In order to adequately plan for our energy transition and address the historic inequities experienced by communities of color, low-income communities, and front-line communities, more data is needed to understand what the full impacts of the energy transition will be on workers and communities and what opportunities the clean energy industry presents. With better data, we can direct resources such as funding for infrastructure and schools, environmental protections and enforcement, and education and job training opportunities to the people and areas most in need.

New workforce development programs and incentives can help to ensure that the growing clean energy industry employs more of its workforce with a diverse Virginia workforce, ensuring Virginia communities benefit from these growing industries, rather than having to use out-of-state employees. All workforce programs and incentives must be designed to lift up disadvantaged communities, collaborate with unions, and provide opportunities such that the beneficiaries are representative of the diverse population of Virginia. Lastly, Virginia's clean energy policies must be updated to ensure programs such as community solar, energy efficiency incentives, and renewable and energy storage mandates are applied equitably across all utilities in the state so that benefits of clean energy reach all Virginians.

### Sunset at Big Meadows, Shenandoah National Park

Image credit: Lorne Field

## POLICY RECOMMENDATIONS

Establish an Energy Transition Office within the Department of Housing and Community Development to work with transitioning communities to identify necessary resources, develop transition plans, and administer a Community Redevelopment Fund to support infrastructure projects in underserved communities.

Require a JLARC Energy Transition Study to quantify the impacts of the fossil fuel industry decline and clean energy industry opportunities.

Provide incentives for retraining programs and Green Career and Technical Education Dual enrollment programs.

Expand Virginia Clean Economy Act requirements, shared solar, low-income solar rebates, and percentage of income payment programs to fossil-fuel impacted areas.

Require power plant owners to develop and implement decommissioning plans to ensure environmental remediation.



# SLASHING POLLUTION & ENERGY BILLS WITH VIRGINIA'S UNTAPPED RESOURCE: ENERGY EFFICIENCY

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## EXECUTIVE SUMMARY

Virginia must make energy efficiency a bedrock component of our energy mix in order to lower Virginia's rising energy bills and excess carbon pollution. Reducing inequitable energy burdens is especially important for low- and middle-income households, who pay electric bills that are the nation's 6th highest<sup>1</sup> and electric rates that are among the highest in the region.<sup>2</sup> Without further action, our citizens, health, environment, and economy will continue to be unnecessarily sapped by our outdated and inefficient energy system.

## CHALLENGE

Though Virginia has recently passed significant energy efficiency legislation, the state still has substantial untapped potential to avoid wasting energy.<sup>3</sup> This is reflected in our state's high electricity bills,<sup>4</sup> as well as some of the highest energy burdens borne by lower income Virginians.<sup>5</sup>

Efficiency—achieving the same output with less energy—lowers Virginians' electric bills and rates, creates thousands of local jobs, and reduces the harms from energy-related pollution. Avoidable energy waste disproportionately hits low-income, Black, and Latinx residents.<sup>6</sup>

**We could reduce carbon pollution 50% by 2050 if we fully tapped efficiency technology.**

Efficiency is also one of our best climate action tools, both to lower upstream power plant pollution and to shift buildings away from fossil fuel. If we fully tapped efficiency technology, we'd reduce carbon pollution 50% by 2050.<sup>7</sup>

Though energy efficiency is a smart investment, longstanding barriers block its full implementation in Virginia: upfront costs of retrofits can deter some households, while regressive elec-

tric monopoly incentives increase both energy waste and utility profits.

Virginia's energy is also wasted by outdated appliances that run on fossil fuels, which cannot be upgraded to utility-delivered electric appliances due to needlessly restrictive policies. Action is also needed to ensure that buildings are built with efficiency in mind from the start. Although the best time to make a building energy efficient is when it is first built, builders lower their construction costs by excluding efficiency measures, resulting in 50 to 100 years of higher energy costs and pollution.

Government policy is needed to overcome all these barriers so that energy resources are used efficiently and households save money.

## SOLUTION

Virginia should build on policy that expands access to energy efficiency by setting stronger energy efficiency targets and removing the restriction on the more efficient electrification of buildings and related infrastructure currently powered by polluting fossil fuels.

Such policy will ensure Virginia's monopoly electric utilities include more efficiency in their future energy mix and avoid building far costlier new generation.<sup>8</sup> Ratepayer costs and climate pollution could also be further reduced by authorizing more efficient electrification projects to replace outdated appliances that rely on fossil fuel.

Promptly implementing highly efficient building codes for new and rehabilitated buildings and empowering local governments to advance efficiency are also critical for lowering bills and reducing pollution. The Commonwealth and residents, especially low- and moderate-income

residents, will benefit. While the 2021 General Assembly sensibly called for building codes to be "at least as stringent as" International Energy Conservation Code when savings and other benefits over time would exceed the initial construction costs, it is unclear when and how Virginia regulators will actually implement such standards.

Lastly, localities need to be granted authority (a) to require building owners to publicly "benchmark" their buildings' energy efficiency, so that potential tenants know energy costs in advance, incentivizing owners to make cost-effective building efficiency upgrades, and (b) to adopt "stretch codes" with stronger energy and climate standards, including net-zero goals, for buildings constructed within their jurisdictions.

**Hampton Salt Ponds**  
Image credit: Aileen Devlin



## POLICY RECOMMENDATIONS

Extend and strengthen the Energy Efficiency Resource Standard beyond 2025, including a low-income specific standard, so electric monopolies equitably lower pollution and bills while avoiding building far costlier power generators.

Allow electric utilities to electrify buildings when doing so is more energy efficient than continued reliance on fossil fuels.

Empower local governments to adopt "stretch codes" with stronger energy efficiency and climate standards.

Allow local governments to require large building owners to make their buildings' energy intensity public, for greater transparency of building efficiency and related tenant costs ("benchmarking").

Authorize the Virginia Department of Energy to establish minimum appliance efficiency standards exceeding Federal standards.



# BRINGING MORE RESILIENT ENERGY TO VIRGINIA COMMUNITIES

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## EXECUTIVE SUMMARY

With the Virginia Clean Economy Act, Virginia is poised to embark on a massive investment in large-scale solar and wind installations, and although such resources are necessary to decarbonize the power sector, such facilities suffer from the same reliability risks as other large-scale power plants.

Small-scale energy resources, especially when paired with storage, are a necessary complement to larger resources. They improve grid reliability, reduce pressure on agriculture and forest land, and provide more jobs per megawatt compared to larger resources.<sup>1</sup> Virginia must remove barriers to customer-owned clean energy, strengthen the renewable portfolio standard, and promote solar-plus-storage solutions for electricity resilience.

## CHALLENGE

Virginia faces an immense challenge in transitioning to clean energy while ensuring electricity reliability. To do that most effectively, Virginia must deploy renewable energy in all its forms. While multi-acre utility-scale solar installations may be common, solar can also be installed on rooftops and through “shared solar” where customers can subscribe to a local, off-site solar installation. Current policy, however, skews towards large-scale resources, undervaluing the role that smaller-scale solar and wind, battery storage, and microgrids can play on the grid, especially with regards to grid resilience. Specifically, Virginia’s current policy ignores the benefits of distributed generation related to transmission capacity, energy balancing, distribution capacity, and line losses.

Currently, the policies and programs meant to expand access to distributed solar in the Commonwealth aren’t applicable across all utility

territories. In 2020, the legislature supplemented that policy by authorizing different shared solar programs in Dominion and Old Dominion Power territory (Appalachian Power Company was excluded). The rules regarding customer-owned generation are different and more restrictive for rural electric cooperatives and municipal electric utility customers.

Even within the Virginia Clean Economy Act, policies apply differently among utilities: the distributed generation carve-out within the renewable portfolio standard applies only to Dominion Energy, and a home with more than 15 kW of solar pays standby charges in Dominion territory but not in Appalachian Power or Old Dominion Power territories. Lastly, prohibitions against customers aggregating multiple meters continue to restrict solar and wind access for local governments, universities, and multi-family housing.

## SOLUTION

**Virginia needs a comprehensive, unified state policy on distributed energy that does not vary from utility to utility.**

To remove bureaucratic red tape, foster economic growth, lower the costs of the clean energy transition, and promote electricity resilience for all utility customers, Virginia needs a comprehensive, unified state policy on distributed energy that does not vary from utility to utility. The policies intended to expand access to customer-owned solar (community or shared solar, power purchase agreements (PPAs), the distributed generation carve-out in the renewable portfolio standard, and protections against discriminatory fixed or stand-by charges for net metering customers must be expanded and strengthened across all utility territories, including those of electric cooperatives and municipal electric utilities.

Increasing and strengthening the distributed generation carve-out within Dominion’s renewable portfolio standard will support more growth in this vital sector as well. Additional incentives and financing options for customers to be able to afford their own clean energy systems must also be expanded, such as through low-interest loans, rebates for low-income customers, and tax credits.

The Commonwealth must also support the development of more energy storage systems, and microgrids are needed in combination with generation resources in order to further increase resilience and reliability, particularly in low-income and disadvantaged communities. The current aggregated net metering program should be expanded to more customer types such as multi-family housing providers, universities, and local governments.

**Hark Vineyards, Earlysville, Va**

Image credit: Sarah Stryker



## POLICY RECOMMENDATIONS

Expand the Dominion Energy shared solar program to all customers.

Prohibit utilities from charging unreasonably high minimum bills for shared solar customers.

Support solar-plus-storage for buildings that can serve as resilience hubs for communities.

Increase the renewable portfolio distributed energy set-aside from 1% to 10%, and create a set-aside requirement for Appalachian Power.

Increase low-income clean energy access with \$2 million/year for the Clean Energy Advisory Board and \$2 million/year for grants for schools in disadvantaged communities.

Create a 25% investment tax credit for customer-owned renewables.

Prohibit standby or demand charges that apply only to distributed generation customers.



# MAXIMIZING BENEFITS & MINIMIZING IMPACTS OF UTILITY SCALE SOLAR

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## EXECUTIVE SUMMARY

Virginia's use of electricity and reliance on large-scale centralized power generation comes at a price. Even with the cleanest power generation projects, best practices should be employed to optimize energy output while minimizing environmental impacts. Utility-scale solar, by its very nature, uses many acres of land, which – if poorly developed – can unnecessarily harm primarily agricultural and forested lands. While renewable energy projects must be used to meet the Commonwealth's energy demand going forward, Virginia's executive branch, General Assembly, and regulators should strive to minimize the environmental impacts while maximizing the benefits of solar.

**Utility-scale solar, by its very nature, uses many acres of land, which – if poorly developed – can unnecessarily harm primarily agricultural and forested lands.**

## CHALLENGE

A utility-scale solar facility is one that generates power and feeds it into the grid, supplying an electric utility with clean power. Recently Virginia has experienced an increase in both the number and size of utility-scale facilities and this trend is likely to continue as Virginia transitions away from fossil fuel based generation. On average, utility-scale solar requires roughly seven to ten acres per megawatt produced. This can result in significant shifts in land use. In fact, in the spring of 2019, the Spotsylvania Board of Supervisors approved the largest solar energy facility on the east coast, utilizing over 3,500 acres of forested land in Virginia and expected to produce 500 megawatts (MW) of power.

The Virginia Clean Economy Act declared 16,100 MW of solar and on-shore wind to be in the public interest. It is expected that utility-scale solar

facilities will produce the majority of that new generation, and it will happen quickly.

Virginia needs greater deployment of renewable energy projects. However, all projects should take into account site-specific conditions. Decision makers must ensure proper site selection and best practices to minimize any associated negative impacts. The expected amount of solar development raises concerns with regard to conversion of farms and forests; environmental degradation; loss of habitat; and impacts on historic, cultural, and scenic resources. However, those concerns can be minimized if handled correctly.

## SOLUTION

Virginia's policymakers should implement and promote best practices for utility-scale solar, including:

### Avoidance of Resources and Proper Site Selection

Appropriate direction should be given to the industry by prioritizing and incentivizing post-mining land, landfills, brownfields, and other former industrial or commercial sites. Focusing the initial round of development on these sites avoids unnecessary impacts to our forests and agriculturally productive lands, whose highest and best use is to remain green, either for traditional uses or specifically to address climate change.

### Distributed Generation and Co-Locating Solar Facilities

Maximize efficient use of the land by incentivizing and prioritizing solar within the built environment, e.g., rooftops, parking garages, commercial sites, government owned buildings/properties, and other energy generation sites (see *Bringing More Resilient Energy to Virginia Communities* pg 83).

## Minimize Wildlife Habitat Disturbance and Protect Ecology

Minimize the impacts on habitat and the movement of wildlife. Ensure that solar developers are communicating early and often with federal and state wildlife agencies.

## Best Practices

Projects should include recognized best management practices with regard to water quality and sustainable groundskeeping. Water Quality protections/standards (time of year restrictions, turbidity/TSS standards, etc.) should be incorpo-

rated into the state permitting process addressing potential in-stream impacts. The use of native pollinators can improve erosion control, pesticide avoidance, stormwater infiltration, wildlife habitat, and reduce long-term maintenance costs and emissions. Lastly, we should encourage compatible onsite agricultural uses where practical.

## Minimize Anticipatory Clearing of Forested Lands

Anticipatory clearing occurs when a landowner clears the forested land in anticipation of submitting an application for a solar project.

## POLICY RECOMMENDATIONS

Incentivize solar developers to use previously developed or degraded land, such as post-mining land, by funding the Virginia Brownfield and Coal Mine Renewable Energy Grant Program, offering bonus credits for brownfields projects within the Renewable Portfolio Standard and dedicating more resources to the Brownfields Program in order to better identify brownfields and assist developers with siting concerns.

Provide funding for pilot projects that explore ways solar development can complement agriculture, demonstrating design, economic feasibility, and promotion of both dual use and community solar projects.

Direct the Virginia Department of Energy, in coordination with relevant agencies and universities, to produce an annual Solar Status report tracking distributed, community, and utility-scale solar projects (applications, under construction, and in production) in order to evaluate consistency with state goals, including agricultural and forest land protection and water quality restoration targets. The report will track progress toward VCEA metrics and provide a foundation for future policy and program improvements.



A portion of the recently constructed S-Power Project in Spotsylvania County.

Image credit: Hugh Kenny, Piedmont Environmental Council



# ENSURING RESPONSIBLE DEVELOPMENT OF OFFSHORE WIND

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## EXECUTIVE SUMMARY

With a pathway to produce 5200 megawatts of offshore wind (OSW) by 2035 and Dominion Energy on track to deliver half of that power by 2026,<sup>1</sup> Virginia is well on its way to confronting the climate crisis and realizing the creation of thousands of jobs supporting its industry. Virginia must now ensure that OSW is done right, meaning it is brought online in a way that is fair, equitable, and beneficial for all Virginians. In particular, this means ensuring that the OSW job opportunities and training/educational programs are available, affordable, community-based, and widely promoted throughout the Commonwealth. It also means that OSW is responsibly sited both offshore and onshore with its transmission lines.

## CHALLENGE

In 2020, the Virginia Clean Economy Act (VCEA) was enacted, which envisions development of 5200 megawatts of offshore wind by 2035. This sizable commitment to offshore wind helps position the Commonwealth to become an offshore wind hub for the industry – an industry with the potential to create jobs for thousands of Virginians, to build wealth, and lift communities from poverty.

To attract these employers here and capture the job-creating and cost-saving benefits of offshore wind development, Virginia must ensure it stands up a ready workforce for offshore wind. To do otherwise risks losing large manufacturers, like Siemens-Gamesa, from locating in Virginia. Virginia must quickly train and deploy a large and diverse workforce to support the construction of wind turbines along with the manufacturing of its parts.

The VCEA provides general guidance governing Dominion's OSW workforce development plans

as presented to the State Corporation Commission, especially as it applies to employing local workers and individuals from historically disadvantaged communities. Policies must be enacted that require Dominion to meet specific and measurable hiring goals so as to ensure that this ratepayer-funded project equitably delivers on the intent behind the VCEA. Policy must also clarify that Dominion's hiring plans not be interpreted as limited to the 150 jobs that Dominion has stated it will create directly with the construction of its Coastal Virginia Offshore Wind (CVOW) project, but be instead reflective of Dominion's larger role in supporting the majority of the offshore wind jobs generated by suppliers, manufacturers, subcontractors, etc.

Dominion is required to work with a number of state agencies including the Department of Energy (DOE), which is also tasked per Executive Order 43 to develop a clean energy workforce development plan. These plans must be the result of a robust public outreach and engagement process, especially within low-income communities and communities of color. Also, the necessary training and educational programs outlined in the plan must be fully funded, including the funds necessary to promote these programs across the state, especially in said communities.

Virginia must also ensure responsible development of offshore wind, which includes protection for marine mammals and other wildlife, especially the endangered North Atlantic Right Whale. Onshore transmission lines must be responsibly sited, i.e., minimizing and mitigating the impacts of routing lines through environmentally sensitive areas and environmental justice communities especially.

## SOLUTION

Offshore wind can provide clean energy at the scale necessary to confront the climate crisis head-on. If implemented responsibly, this renewable energy source can create thousands of family-supporting jobs for Virginians and be delivered in a way that is fair, equitable, and beneficial for all.

These are family-supporting, career-length jobs that can employ a broad swath of Virginians, including people with and without high school diplomas, workers impacted by COVID, military personnel transitioning to the civilian workforce, and returning citizens.

In addition to tremendous job opportunities, offshore wind turbines made and constructed with

## POLICY RECOMMENDATIONS

Enact policy that reflects the VCEA's intent for diverse and equitable hiring, with specific and measurable goals. This would include requirements that Dominion submit diversity, equity, and inclusion plans, including a workforce diversity plan addressing all CVOW-related hires across construction and the supply chain as well as a supplier diversity program plan.

Direct funds to be administered by departments under the direction of the Secretary of Commerce, to support clean energy workforce development programs that are accessible, affordable and community-based, and provide the funds necessary to promote those training opportunities to the specific communities outlined in the VCEA (i.e., historically disadvantaged communities, veterans, local workers).

State natural resource agencies should use environmental review processes to require avoidance and minimization of impacts to offshore, nearshore, and onshore habitats, and compensation for the impacts that cannot be avoided.

American parts and labor also bring significant cost savings. Globally, costs have plunged 32% in the past year, and industry experts anticipate even further price drops as the U.S. builds its own manufacturing and supply chain instead of importing European parts. State regulators and Dominion must ensure that project approvals ensure competitive, least cost prices for offshore wind.

State and federal agencies must ensure responsible development of offshore wind infrastructure using least-conflict siting and best available science to avoid, minimize and mitigate impacts to ocean and on-shore wildlife and habitat, cultural resources, and communities, and must pursue stakeholder-informed decision making.



Wind turbine off of Virginia's coast.  
Image credit: Hunter Norfingier, Sierra Club Virginia Chapter



# ENDNOTES

Skyline Drive Winter Snow, Shenandoah National Park |  
Image credit: Hugh Kenny, Piedmont Environmental Council

## BUILDING AN EQUITABLE CLEAN ENERGY ECONOMY FOR COMMUNITIES & WORKERS

<sup>1</sup> *Industrial snapshot: Appalachian Virginia*, Appalachian Regional Commission (2017). <https://www.arc.gov/wp-content/uploads/2019/11/Virginia-IndustrialSnapshot.pdf>.

<sup>2</sup> *OES Research Estimates by State and Industry*, U.S. Bureau of Labor Statistics (March 31, 2020), [https://www.bls.gov/oes/current/oes\\_research\\_estimates.htm](https://www.bls.gov/oes/current/oes_research_estimates.htm).

<sup>3</sup> *Coal Blooded: Putting Profits Before People*. NAACP (2016). <https://naacp.org/resources/coal-blooded-putting-profits-people>.

<sup>4</sup> *Poverty Rates in Appalachia, 2013-2017*. Appalachian Regional Commission (August 2019). [https://www.arc.gov/wp-content/uploads/2020/06/Poverty\\_Rates\\_2013-2017\\_Absolute\\_Map-1.pdf](https://www.arc.gov/wp-content/uploads/2020/06/Poverty_Rates_2013-2017_Absolute_Map-1.pdf).

## SLASHING POLLUTION & ENERGY BILLS WITH VIRGINIA'S UNTAPPED RESOURCE: ENERGY EFFICIENCY

<sup>1</sup> *2019 Average Monthly Bill - Residential*, U.S. Energy Information Administration (2019). [www.eia.gov/electricity/sales\\_revenue\\_price/pdf/table5\\_a.pdf](http://www.eia.gov/electricity/sales_revenue_price/pdf/table5_a.pdf).

<sup>2</sup> *Annual Electric Utility data (EIA 861), comparing Virginia's largest electric utility to neighboring regulated states*, U.S. Energy Information Administration (October 6, 2020). [www.eia.gov/electricity/sales\\_revenue\\_price](http://www.eia.gov/electricity/sales_revenue_price).

<sup>3</sup> Berg, W., S. Vaidyanathan, B. Jennings, E. Cooper, C. Perry, M. DiMascio, and J. Singletary. *The 2020 State Energy Efficiency Scorecard*. American Council for an Energy-Efficient Economy (December 16, 2020). <https://www.aceee.org/research-report/u2011>.

<sup>4</sup> *2019 Average Monthly Bill - Residential*, U.S. Energy Information Administration (2019). [www.eia.gov/electricity/sales\\_revenue\\_price/pdf/table5\\_a.pdf](http://www.eia.gov/electricity/sales_revenue_price/pdf/table5_a.pdf).

<sup>5</sup> Penney, Brad, Zack Miller, and Quincy Dodge. *Multifamily Housing and Energy Efficiency: An Opportunity or Virginia to Lead*. Virginia Multifamily Energy Efficiency Coalition (November 2017). <https://assets.ctfassets.net/ntcn17ss1ow9/1gEt3qTYn0AwalZqkpo9IA/37be71cf745f71f8920abfc084e1fc6a/MFEE-Report-1110.pdf>.

<sup>6</sup> Drehobl, Ariel, Lauren Ross, and Roxana Ayala. *How High Are Household Energy Burdens? An Assessment of National and Metropolitan Energy Burdens across the US*, American Council for an Energy-Efficient Economy (September 10, 2020). <https://www.aceee.org/research-report/u2006>.

<sup>7</sup> Nadel, Steven, and Lowell Ungar. *Halfway there: Energy efficiency can cut energy use and greenhouse gas emissions in half by 2050*. American Council for an Energy-Efficient Economy (September 17, 2019). <https://www.aceee.org/fact-sheet/halfway-there>.

<sup>8</sup> Gilleo, Annie. *New data, same results—Saving energy is still cheaper than making energy*. American Council for an Energy Efficient Economy (December 1, 2017). <https://www.aceee.org/blog/2017/12/new-data-same-results-saving-energy>.

## BRINGING MORE RESILIENT ENERGY TO VIRGINIA COMMUNITIES

<sup>1</sup> Clack, Christopher T M, Aditya Choukulkar, Brianna Coté, and Sarah Mckee. *Why Solar For All Costs Less: A New Roadmap for the Lowest Cost Grid*. Vibrant Clean Energy (December 1, 2020). [https://www.vibrantcleanenergy.com/wp-content/uploads/2020/12/WhyDERs\\_TR\\_Final.pdf](https://www.vibrantcleanenergy.com/wp-content/uploads/2020/12/WhyDERs_TR_Final.pdf).

## MAXIMIZING BENEFITS & MINIMIZING IMPACTS OF UTILITY SCALE SOLAR

<sup>1</sup> *Siting, Permitting & Land Use for Utility-Scale Solar*. Solar Energy Industries Association (Accessed August 1, 2021). <https://www.seia.org/initiatives/siting-permitting-land-use-utility-scale-solar>.

<sup>2</sup> *Virginia Pollinator Smart*, Virginia Department of Conservation and Recreation (July 20, 2021). <https://www.dcr.virginia.gov/natural-heritage/pollinator-smart>.

## ENSURING RESPONSIBLE DEVELOPMENT OF OFFSHORE WIND

<sup>1</sup> *Coastal Virginia Offshore Wind Commercial Project*, Permitting Dashboard - Federal Infrastructure Projects. <https://www.permits.performance.gov/permitting-project/coastal-virginia-offshore-wind-commercial-project>.





# UTILITY REFORM

We must leverage the clean energy transition currently underway in Virginia to address inequalities baked into our current system by improving protections for households from utility disconnections, and ensuring public participation in decision-making about the source of power and its cost to consumers. We must also enable our energy regulators to manage a clean energy transition that is both effective at combating climate change and affordable

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### ENSURING ACCESS TO ESSENTIAL SERVICES

Access to energy and water utilities is essential for the health and well-being of all Americans. And yet, thousands of households in Virginia face utility disconnections every year, including during the hottest days of summer or coldest days in winter. Even drinking water and wastewater management systems require electricity to operate. We must leverage the clean energy transition currently underway in Virginia to address inequalities baked into our current system by improving protections for households from gas and electricity disconnections, modeling policy approaches taken by other southeastern states. Ensuring access to energy services ensures that the lights are on, that clean water is available, and that waste management systems remain in operation for vulnerable households. We can achieve these ends through a coordinated policy effort that recognizes that all people have a right to these goods.

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### REFORMING ELECTRIC UTILITY REGULATION FOR AN AFFORDABLE CLEAN ENERGY TRANSITION

The current laws regulating Virginia's electric utility monopolies restrict the ability to manage a clean energy transition that is both effective at combating climate change and affordable for Virginians. The State Corporation Commission (SCC) is responsible for keeping electricity prices fair and reasonable, but current law restrictions, including an arbitrary cap on rate reduction and constraints to address key accounting matters, have limited the SCC's ability to protect Virginians from excessive energy bills. In this upcoming legislative session, it is crucial to eliminate these restrictions and allow the SCC to set fair electricity rates so that Virginia's transition to clean energy is just and affordable.

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### ENSURING DEMOCRATIC PARTICIPATION AT COOPERATIVE & MUNICIPAL UTILITIES

To serve the public interest, our energy systems must enable public participation in decision-making about the source of power and its cost to consumers. Such participation is particularly appropriate for members of electric cooperatives and customers of municipally-owned electric utilities, but these utilities frequently limit or preclude opportunities for public engagement, effectively concealing important decisions related to the clean energy transition or the cost of power. Virginia must pursue policies that open deliberations to democratic participation at these utilities, provide a degree of public oversight, and promote fair board elections to create a framework for dialogue between the utilities and the people they serve.

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### Morning Fog - Westmoreland Count, Va

Image credit: Katharina Bergdoll





# ENSURING ACCESS TO ESSENTIAL SERVICES

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## EXECUTIVE SUMMARY

Access to energy and water utilities is essential for the health and wellbeing of all Americans. And yet, thousands of households in Virginia face utility disconnections every year, including during the hottest days of summer or coldest days in winter. Even drinking water and wastewater management systems require electricity to operate. We must leverage the clean energy transition currently underway in Virginia to address inequalities baked into our current system by improving protections for households from gas and electricity disconnections, modeling policy approaches taken by other southeastern states.<sup>1</sup> Ensuring access to energy services ensures that the lights are on, that clean water is available, and that waste management systems remain in operation for vulnerable households. We can achieve these ends through a coordinated policy effort that recognizes that all people have a right to these goods.

## CHALLENGE

Virginia currently has among the weakest disconnection protections for electric and gas customers of any state in the southeast.<sup>2</sup> Although people with certified medical reasons may earn exemption from electricity disconnections, other households in the Commonwealth with outstanding electric bills – including those with children, elderly, and disabled residents – are vulnerable to having their power disconnected, even during weather extremes.<sup>3</sup> Black and brown households are more likely to lose power than white households due to the enduring legacies of structural racism.<sup>4</sup> Meanwhile, there is no statewide disconnection standard for gas or water utilities. When people do lose utility services, they often face additional fees related to the disconnection and reconnection as they try to resolve their accounts and have their essential services restored.

## Virginia currently has among the weakest disconnection protections for electric and gas customers of any state in the southeast.

Utility disconnection policies vary among the 33 electric utilities and 8 gas utilities in Virginia, so Virginia residents are subject to very different disconnection policies based on their utility provider.<sup>5</sup> During the state of emergency enacted by Governor Northam in response to COVID-19, Virginia established a limited disconnection moratorium which expires 60 days after the state of emergency ends on June 30, 2021. The state also addressed household inability to pay with a novel utility debt repayment program designed to help people resolve Covid-induced arrearages over time while maintaining electricity and gas services during the repayment period.<sup>6</sup> Yet, the provision for payment plans does not apply to debt incurred outside of the circumstances of the pandemic. We must adapt the model approach taken while the state of emergency was in effect to secure the wellbeing of customers of electric and gas utilities over the long-term, and not merely during a time of global crisis.

Further, in February of 2021, the Virginia General Assembly recognized water as a human right and specifically stated that the state of Virginia recognizes that no household be “deprived of water because of inability to pay” and that disconnections are “contrary to promoting public health and welfare.”<sup>7</sup> Though the resolution passed by the General Assembly recognizes the human right to water, there are no binding policies that specifically ensure water access following the end of the utility moratorium and in years to come. It is imperative to protect access to water services for our most vulnerable communities, as every human being has the right to safe, clean, affordable, and accessible water

adequate for human consumption, cooking, and sanitation purposes in times of crisis and at times of peace.

## SOLUTION

We can address the lack of uniform disconnection policies across utilities in Virginia by establishing baseline standards for cooperative,

municipal and investor-owned utilities to follow when households face electric or gas disconnections. By limiting the ability of utilities to disconnect households on a seasonal basis and during weather extremes, including increasingly frequent heatwaves and climate related disasters, or during other widespread and extended public emergencies, we can protect public health. By limiting the financial consequences related to late payments, non-payments, or disconnections and reconnections, we can make it easier for households to maintain access to essential energy services, or to restore them in the event of a disconnection. Finally, by addressing the overall burden that many households face in accessing these essential utilities, we can help ensure that energy and water services are affordable for more people.<sup>8</sup>

## POLICY RECOMMENDATIONS

Establish seasonal limitations on utility disconnections that protect households from losing electricity, water, wastewater, or gas services during extreme temperature periods, most but not all of which occur in the coldest months (November through March) and warmest months (July through September) of the year.

Prohibit electric, water, wastewater, and gas utilities from disconnecting customers during a declaration of a state of emergency from either the federal or state government and during extreme weather events, including when a heat warning or winter storm warning has been issued by local or state authorities.

Prohibit utilities from assessing disconnection and reconnection fees to customers who do lose power, water, or wastewater services due to late bills or non-payment of bills.

Require utilities to offer customers who have accrued arrearages, or who have a demonstrated financial hardship, a repayment plan that is mutually agreed upon to be affordable and sustainable for the customer; does not require new deposits, down payments, late fees, interest charges or penalties; and that does not apply eligibility criteria such as installment plan history or credit rating, modeling such repayment plans after the Emergency Debt Repayment Plan which was included in the 2020 Special Session I Virginia State Budget.

First Snow of the Year - Virginia Beach, Va |  
Image credit: Hira Azher





# REFORMING ELECTRIC UTILITY REGULATION FOR AN AFFORDABLE CLEAN ENERGY TRANSITION

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## EXECUTIVE SUMMARY

The current laws regulating Virginia's electric utility monopolies restrict the ability to manage a clean energy transition that is both effective at combating climate change and affordable for Virginians. The State Corporation Commission (SCC) is responsible for keeping electricity prices fair and reasonable, but current law restrictions, including an arbitrary cap on rate reduction and constraints to address key accounting matters, have limited the SCC's ability to protect Virginians from excessive energy bills. In this upcoming legislative session, it is crucial to eliminate these restrictions and allow the SCC to set fair electricity rates so that Virginia's transition to clean energy is just and affordable.

## CHALLENGE

Virginia made history in 2020 with the Virginia Clean Economy Act, which puts the Commonwealth on a path to be 100% powered by clean energy. It is critical this transition does not burden families and small businesses with needlessly high bills especially as the cost of renewable energy falls daily nationwide. The rate case is the best tool to ensure that Dominion Energy and Appalachian Power Company, the utilities responsible for powering most of Virginia, do not exploit the climate crisis at the expense of ratepayers. During this regulatory process, the SCC establishes the rates a utility should charge to recover its costs and earn a fair profit.

**As a result of more than 14 years of restrictions to adjust rates, Virginians are paying the sixth highest electricity bills in the nation, bills that are unaffordable for 75% of Virginia households.**

Historically, the SCC could order rate cuts if utilities overcharged customers. Unfortunately, these powers have been stripped away over the

years. As a result of more than 14 years of restrictions to adjust rates,<sup>1</sup> Virginians are paying the sixth highest electricity bills in the nation,<sup>2</sup> bills that are unaffordable for 75% of Virginia households.<sup>3</sup> Because of legislation that allows Dominion Energy to essentially regulate itself, the utility has overcharged Virginians by \$1.3 billion since 2015.<sup>4</sup> These massive excess profits have real financial impacts for Virginians and hinder our ability to have a fair and affordable clean energy transition.

## SOLUTION

The SCC must be able to ensure that electricity rates are reasonable and that electric utility monopolies, with captive customers and no competition, do not charge unfair prices at a time when Virginia is making massive investments in new clean energy and shuttering fossil fuel plants. In the last two years, a broad group of bipartisan advocates and legislators have proposed strong solutions to give back to the SCC tools to prioritize rate affordability.

Proposals included eliminating the unmerited bonus profit in the code of 0.7% above the authorized profit level that amounts to hundreds of millions of dollars, as well as utilities keeping 30% of overcharges that should be refunded to customers. Another set of ideas included giving back to the SCC the authority to determine reasonable amortization periods for investments; current law allows electric utilities to unilaterally determine cost recovery periods that impede rate reductions. Different proposals have been studied and widely supported by the House of Delegates. The next legislative session is yet another opportunity for the General Assembly to strengthen SCC oversight over electric utilities to make sure the clean energy transition is affordable and equitable.

## POLICY RECOMMENDATIONS

Eliminate existing restrictions on the SCC to set future fair electricity rates using traditional cost-of-service methods. The SCC should be able to decrease rates when the current ones are likely to generate revenues above the authorized profit.

Remove all limitations on the SCC's ability to set utilities authorized rates of return or profit, according to market conditions.

Authorize the SCC to terminate separate riders and opt to roll costs into base rates, if in the best interests of ratepayers. These riders, called Rate Adjustment Clauses, exempt utilities from risks associated with investments, placing disproportionate risk on customers.



November Flooding - Hampton Roads, Va  
Image credit: Ailenn Devlin



# ENSURING DEMOCRATIC PARTICIPATION AT COOPERATIVE & MUNICIPAL UTILITIES

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## EXECUTIVE SUMMARY

To serve the public interest, our energy systems must enable public participation in decision-making about the source of power and its cost to consumers. Such participation is particularly appropriate for members of electric cooperatives and customers of municipally-owned electric utilities, but these utilities frequently limit or preclude opportunities for public engagement, effectively concealing important decisions related to the clean energy transition or the cost of power.<sup>1</sup> Virginia must pursue policies that open deliberations to democratic participation at these utilities, provide a degree of public oversight, and promote fair board elections to create a framework for dialogue between the utilities and the people they serve.

## CHALLENGE

Consumers at electric cooperatives and municipal utilities in Virginia are subject to wildly varying opportunities for participating in decision-making at their utility, opportunities which are determined simply by who their utility is rather than by a statewide standard. Most of Virginia's thirteen electric cooperatives do not meet the standards for democratic member control established by the electric cooperative's trade association. For example, the National Rural Electric Cooperative Association recommends that, as democratic organizations, co-ops should permit members to actively participate in policy-setting and decision-making by interacting with their member-elected board of directors.<sup>2</sup>

**Most of Virginia's thirteen electric cooperatives do not meet the standards for democratic member control established by the electric cooperative's trade association.**

And yet, many cooperatives in the Commonwealth do not permit members to attend board

of directors meetings, nor do they make minutes from board meetings accessible to the public. Others even engage in the practice of proxy voting in board elections, a practice which provides a substantial – and insurmountable – advantage to an incumbent candidate.

Neither do the sixteen municipal utilities in Virginia adhere to uniform standards for public participation, nor are they regulated by the State Corporation Commission. Further, the methods for appointing utility directors vary by municipal utility and lack standard application and selection processes. Holding and exercising power over our energy systems, while operating in an opaque manner towards consumer stakeholders, is undemocratic.

## SOLUTION

We can address divergent public participation policies across cooperative and municipal utilities in Virginia by establishing standards these utilities must satisfy to ensure that the households they serve have the opportunity to offer input into the management of their energy system. By requiring utility boards to allow members of the public to attend board meetings and mandating a full and fair selection process for governing officials, we can ensure that customers are kept informed of issues at their utility.

By requiring minutes from utility board meetings to be made readily and publicly accessible, we can ensure that these utilities are operating in a transparent, responsive manner.

Finally, by mandating direct, fair, and accessible utility board elections at each utility in the Commonwealth, we can ensure that interested members do have an opportunity to become more involved in the governance of their energy system.

## POLICY RECOMMENDATIONS

Require electric cooperatives and municipal utilities to permit customers to attend meetings of the board of directors both in-person and virtually via livestreaming, and to ensure that all customers are informed about the date, location and agenda for these meetings at least 10 days in advance.

Require electric cooperatives and municipal utilities to make board meeting minutes publicly available by posting minutes in utility offices and online, and by posting any recorded videos from these meetings online, in a sincere effort to make meeting minutes available to all customers.

Require electric cooperatives and municipal utilities to fill board vacancies by holding fair, accessible, and direct board elections and prohibit the opaque practice of proxy voting in board of directors elections.

### Migratory Birds

Image credit: Tori Kennedy





# ENDNOTES

Sunset on the Chickahominy - Chickahominy Riverfront Park  
Image credit: Owen Flannery

## ENSURING ACCESS TO ESSENTIAL SERVICES

<sup>1</sup> *Lights out in the cold: Reforming utility shutoff practices as if human rights matter*, Environmental and Climate Justice Program, NAACP (March 2017).

See "Appendix B, Survey of state disconnection policies". <https://naacp.org/resources/lights-out-cold>.

<sup>2</sup> Ibid.

<sup>3</sup> 20VAC5-330-40. Limitations on service termination to residential customers. <https://law.lis.virginia.gov/admincode/title20/agency5/chapter330/section40>.

<sup>4</sup> Memmott, Trevor, Sanya Carley, Michelle Graff, and David M. Konisky. *Sociodemographic disparities in energy insecurity among low-income households before and during the COVID-19 pandemic*. *Nature Energy* 6, no. 2 (2021): 186-193.

<sup>5</sup> *Public Utilities*, Virginia Legal Aid Society, pg. 4 (January 4, 2019). <https://www.valegalaid.org/files/E095B726-FCD8-81C1-17DC-A16C7ED73FFF/attachments/C759DDF4-D872-42C1-B411-B6843D20A2F3/public-utilities.pdf>.

<sup>6</sup> Vogelsong, Sarah, *Senate approves 12-month utility debt repayment plans with bipartisan support*, Virginia Mercury (September 16, 2020). <https://www.virginiamercury.com/blog/va/senate-approves-12-month-utility-debt-repayment-plans-with-bipartisan-support>.

<sup>7</sup> House Joint Resolution No. 538, (Number 4 and 8, respectively). <https://lis.virginia.gov/cgi-bin/legp604.exe?212+ful+HJ538ER>.

<sup>8</sup> *Energy infrastructure: Sources of inequities and policy solutions for improving community health and wellbeing*, Community Action Partnership, the Regulatory Assistance Project, the Robert Wood Johnson Foundation, and Synapse Energy Economics (April 29, 2020). <https://www.raonline.org/knowledge-center/energy-infrastructure-sources-of-inequities-and-policy-solutions-for-improving-community-health-and-wellbeing>.

## REFORMING ELECTRIC UTILITY REGULATION FOR AN AFFORDABLE CLEAN ENERGY TRANSITION

<sup>1</sup> *The Electric Utility Regulation Act of 2007 only allowed the SCC to decrease rates if a utility overcharged in two consecutive rate cases. Although the SCC found that Dominion overcharged in two consecutive rate cases (2011 and 2013), electric utility monopolies successfully lobbied for a new law that would prevent a rate decrease. HB 2261 allowed Dominion to expense \$400 million of storm-related costs in only one year instead of spreading costs out. This artificially disappeared overcharges and prevented the SCC from decreasing rates. Later in 2015, SB 1349, the so-called "Rate Freeze Law", completely suspended revenue oversight and froze rates at artificially high levels for six years until the 2021 rate case. In 2018, the Grid Transformation Act included a provision restricting the SCC from decreasing rates by more than \$50 million dollars, despite analysis showing the need for a greater decrease. As a result of this flawed regulatory history, the SCC has never had an opportunity to set fair rates based on the industry-standard cost-of-service method since 2007. In fact, base rates have not changed since 1992.*

<sup>2</sup> *Electricity Sales, Revenue, and Average Price*, Table 7.5(a). Energy Information Agency. (October 6, 2020). [https://www.eia.gov/electricity/sales\\_revenue\\_price](https://www.eia.gov/electricity/sales_revenue_price).

<sup>3</sup> *Electricity Burden and the Myth of Virginia's Rate Utopia*. Virginia Poverty Law Center (August 15, 2018). <https://vplc.org/electricity-burden-and-the-myth-of-virginias-rate-utopia>.

<sup>4</sup> *The Dominion Scam: How a Utility Monopoly Overcharged Virginians \$2 Billion (and Got Away with It)*. Clean Virginia (January 2020). <https://www.cleanvirginia.org/wp-content/uploads/2020/01/The-Dominion-Scam-Report.pdf>.

<sup>5</sup> Dreihobl, Ariel, Lauren Ross, and Roxana Ayala. *How High Are Household Energy Burdens? An Assessment of National and Metropolitan Energy Burdens across the US*, American Council for an Energy-Efficient Economy (September 10, 2020). <https://www.aceee.org/research-report/u2006>.

<sup>6</sup> *Virginia SCC - New Releases*, Virginia State Corporation Commission, June 4, 2020. <https://www.scc.virginia.gov/newsreleases/release/SCC-Seek-Comments-on-Dominion-Energy-Virginia%E2%80%99s-l>.

## ENSURING DEMOCRATIC PARTICIPATION AT COOPERATIVE & MUNICIPAL UTILITIES

<sup>1</sup> *Reforms needed at Rappahannock Electric Cooperative*, Rappahannock News (May 12, 2018). [https://www.rappnews.com/opinion/columnists/reforms-needed-at-rappahannock-electric-cooperative/article\\_779aeee7-6b5a-5883-ae0b-c29a36ec0a29.html](https://www.rappnews.com/opinion/columnists/reforms-needed-at-rappahannock-electric-cooperative/article_779aeee7-6b5a-5883-ae0b-c29a36ec0a29.html).

<sup>2</sup> *Understanding the Seven Cooperative Principles*, National Rural Electric Cooperative Association (December 1, 2016). <https://www.electric.coop/seven-cooperative-principles%E2%80%8Bv>.





# POLLUTION PREVENTION

In order to preserve and protect the Commonwealth's water, land, and air we must hold polluting industries accountable. By creating regulations for aboveground chemical storage tanks, increasing the availability of data from chemical conversion facilities, and eliminating the buildout of carbon intensive infrastructure we can ensure the preservation of Virginia's natural resources for future generations.

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Tappahannock, Va

Image credit: Lucas Manweiler



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## STOPPING UNNECESSARY PIPELINES & PHASING OUT FOSSIL FUEL BUILDOUT

Fossil fuel infrastructure negatively impacts public health and the environment and contributes to our climate crisis. In Virginia, projects like the fracked-gas Mountain Valley Pipeline (MVP) perpetuate environmental injustice and hinder us from achieving the clean energy goals of our Commonwealth in an equitable manner. Pipelines like MVP represent an overbuild of gas infrastructure in the region and provide no true benefit for local communities. Like the similarly unneeded Atlantic Coast Pipeline (cancelled in July 2020), MVP should be cancelled. Legislators should adopt policies that recognize the severity of the climate crisis and strengthen protections for communities impacted by fossil fuel infrastructure.

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## ENSURING ACCOUNTABILITY IN THE CHEMICAL CONVERSION INDUSTRY

Virginia's waterways are under assault by single-use plastic trash that is carried by stormwater and thoughtlessly discarded as litter. The volume of plastic trash and the ongoing recycling crisis led the plastics and chemical industries to promote chemical conversion as a solution. Chemical conversion will not reduce the use of single-use plastics, it will incentivize its continued use and create demand for plastic as a feedstock for plastics to fuel facilities. Legislators and regulators must ensure that the industry does not pollute waterways, entrench our dependence on single-use plastics, and inequitably burden communities of color where chemical conversion plants are often sited. Industry accountability should include publicly available disclosure of intake, operational, and output data for these facilities to verify that the industry's performance claims are valid.

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## PROTECTING VIRGINIANS FROM HAZARDOUS CHEMICAL SPILLS

Throughout the Commonwealth, thousands of manufacturers and other businesses store hazardous chemicals in aboveground storage tanks. The quantity, location, contents, age, and condition of these tanks are unknown because owners are not required to register their tanks with the state's Department of Environmental Quality (DEQ). Nor does Virginia impose comprehensive safety regulations for these hazardous chemical storage tanks, even though petroleum storage tanks have been regulated since 1998. As a result, communities at the fenceline of industry in Virginia face the risk of exposure to uncontained hazardous chemical spills, exacerbated by the growing risk of flooding and extreme weather.

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## ADDRESSING UNREGULATED TOXINS TO PROTECT PUBLIC HEALTH & THE ENVIRONMENT

Industrial toxins are a threat to our environment and our health — they can pollute the air we breathe, leach into our soils, and contaminate our drinking water. Many of these toxins have been linked to cancer, infertility, and other serious health impacts, yet they remain unregulated in the Commonwealth. Virginia should take action to identify and control sources of unregulated toxic pollution so that all communities benefit from clean air, clean water, and healthy soil.

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## PROTECTING VIRGINIA'S ENVIRONMENT & PUBLIC HEALTH FROM INDUSTRIAL METAL MINING

Industrial metal mining is moving forward in the Commonwealth without a comprehensive regulatory framework, putting public health and the environment at risk. The heaviest burden is likely to fall on our most vulnerable communities. Ground and surface water contamination are potential outcomes of these mining activities. Remediating negative impacts is impossible in the context of outdated regulations. We must support communities most at risk from this extractive industry by pausing the permitting process for metal mining, studying the effects of such mining, and developing improved regulations.

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## DECARBONIZING VIRGINIA'S INDUSTRIAL POLLUTION WITH LOW-CARBON CONCRETE

Virginia is on a path to decarbonize several sectors of the economy as the Commonwealth will reduce power plant carbon pollution to zero by 2050 and is also taking action on transportation through the Virginia Clean Car Standards and other laws enacted in 2021. However, the industrial sector, which accounts for approximately 10% of the state's emissions and is considered difficult to abate, hasn't received as much attention from policymakers. Carbon emissions from the concrete industry, however, can be addressed through incentives in the state's concrete procurement process to begin to address this major pollution source in an industry-friendly, voluntary way.

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# STOPPING UNNECESSARY PIPELINES & PHASING OUT FOSSIL FUEL BUILDOUT

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## EXECUTIVE SUMMARY

Fossil fuel infrastructure negatively impacts public health and the environment and contributes to our climate crisis. In Virginia, projects like the fracked-gas Mountain Valley Pipeline (MVP) perpetuate environmental injustice and hinder us from achieving the clean energy goals of our Commonwealth in an equitable manner. Pipelines like MVP represent an overbuild of gas infrastructure in the region and provide no true benefit for local communities. Like the similarly unneeded Atlantic Coast Pipeline (cancelled in July 2020), MVP should be cancelled. Legislators should adopt policies that recognize the severity of the climate crisis and strengthen protections for communities impacted by fossil fuel infrastructure.

## CHALLENGE

The burning of fossil fuels harms public health and remains the major driver of our climate crisis. The fossil fuel industry perpetuates environmental injustice, epitomized in Virginia by the high number of facilities – including power plants, pipelines, compressor stations, and coal terminals – sited in Black, Indigenous, and low income communities.<sup>1</sup> Pollution from fossil fuel infrastructure creates disproportionate health impacts in these vulnerable communities.<sup>2</sup>

Although Virginia has recently taken significant steps in advancing environmental justice, including passage of the Virginia Environmental Justice Act and laws addressing clean energy, the Commonwealth continues to license new fossil fuel infrastructure projects. Mountain Valley Pipeline exemplifies this problem. The pipeline would increase climate disruption (MVP has the potential to emit greenhouse gases on a similar scale to 23 coal-fired power plants) and construction of the project has already wrought significant harm on the local environment and

communities.<sup>3</sup> The pipeline has damaged Indigenous cultural and sacred sites.<sup>4</sup> Moreover, MVP was fined \$2.3 million for over 300 violations of the project's water permit, and its continued construction stands to increase damage to Virginia creeks, rivers, and private water sources.<sup>5</sup>

**The Mountain Valley Pipeline has the potential to emit greenhouse gases on a similar scale to 23 coal-fired power plants.**

At the federal level, MVP seeks amendments to permit conditions — without any oversight from Virginia regulatory agencies. Despite the pipeline's legal uncertainty and history of permit violations, MVP, LLC is attempting to extend the pipeline into North Carolina as the "Southgate" extension.

If completed, MVP's projected impact on the climate could be responsible for nearly 1% of all U.S. energy sector greenhouse gas emissions.<sup>6</sup> Yet, the International Energy Agency recently announced that there "is no need for investment in new fossil fuel supply in our net-zero [greenhouse gas emissions] pathway."<sup>7</sup>

## SOLUTION

Fossil fuels are the energy of Virginia's past, not our future. Given the steps necessary to mitigate the worsening climate crisis, and the need for a clean, equitable energy future as laid out in legislation including the Virginia Environmental Justice Act and the Virginia Clean Economy Act, new fossil fuel generation and associated infrastructure should not be pursued. Absent a ban, any new fossil fuel build out, including both interstate and intrastate pipelines, must be strictly and holistically scrutinized.

We have learned from the Atlantic Coast and Mountain Valley pipelines that current laws and

regulations do not adequately protect public health or the environment from new fossil fuel infrastructure. To that end, fossil fuel and biogas projects (produced by the fermentation of organic matter), should receive stricter review, including full environmental justice reviews. Thorough site suitability investigations including cumulative health and environmental impacts on nearby communities are also needed. Enforcement of pollution laws must be prioritized, and polluters must be held fully accountable, regardless of project completion. Review processes should include bonding requirements for appropriate funding or insurance coverage, and include environmental restoration requirements.

Additionally, Virginia lawmakers should strengthen project reviews (including federal interstate projects) by increasing public involvement and participation in those reviews. Ultimately, legislative improvements that adequately account for the climate crisis, prevent future harm, and restore communities impacted by existing projects, are required.

## POLICY RECOMMENDATIONS

Add a site suitability requirement to Va. code section § 62.1-44.15:81 that includes consideration of environmental justice.

Include bonding/restoration requirements in permit applications for fossil fuel and biogas projects.

Require an individual Virginia Water Protection Permit and Uplands Certification under Article 2.6 of the State Water Control Law for all natural gas transmission pipelines 24 inches inside diameter and greater that are subject to § 7c of the Natural Gas Act.

Require DEQ approval for pipeline variances submitted to FERC that could affect water quality, or impact the 401 certification (as allowed by federal law).

Increase state review and oversight, via public participation, of pipelines, including those intended to transport biogas.



Pipeline next to Near Little Creek - Franklin County, Va

Image credit: Mountain Valley Watch



# ENSURING ACCOUNTABILITY IN THE CHEMICAL CONVERSION INDUSTRY

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## EXECUTIVE SUMMARY

Virginia's waterways are under assault by single-use plastic trash that is carried by stormwater and thoughtlessly discarded as litter. The volume of plastic trash and the ongoing recycling crisis led the plastics and chemical industries to promote chemical conversion as a solution. Chemical conversion will not reduce the use of single-use plastics, it will incentivize its continued use and create demand for plastic as a feedstock for plastics to fuel facilities. Legislators and regulators must ensure that the industry does not pollute waterways, entrench our dependence on single-use plastics, and inequitably burden communities of color where chemical conversion plants are often sited.<sup>1</sup> Industry accountability should include publicly available disclosure of intake, operational, and output data for these facilities to verify that the industry's performance claims are valid.

## CHALLENGE

Plastic pollution and the lack of an effective recycling industry has given the plastics and chemical industries an opportunity to market their "advanced recycling" technology as a solution. However, there is a complete lack of operating history to show that it works, and a complete lack of transparency when it comes to the pollution and environmental justice impacts of chemical conversion plants on the surrounding community.

Chemical conversion is an experimental process where plastic is melted down in an oxygen-free environment to render a raw material for more plastic production, or to mix with traditional petroleum for fuel. The American Chemistry Council has succeeded in convincing thirteen state legislatures to pass bills weakening or streamlining state regulation of chemical conversion facilities. SB1164 passed in Virginia in 2020, effec-

tively exempting these facilities from regulation under the Solid Waste Management Act, where landfills, waste transfer facilities, and recycling facilities are routinely regulated.

**Chemical conversion is an experimental process where plastic is melted down for more plastic production or to mix with petroleum for fuel.**

There is one chemical conversion facility currently being proposed and permitted for Cumberland County, but the industry is intent on expanding its presence in Virginia. We must have proper regulation, accountability, and public involvement throughout the chemical conversion process and facility operations to ensure that the industry's stated objectives are true and the state government can verify them as such.

## SOLUTION

State solid waste management policy should focus on reducing single-use plastics in the waste stream and as litter, reusing products where possible, and if recycling is required, elevate solutions that "don't downcycle."

Nascent technologies like chemical conversion should be robustly evaluated/reported and, if shown to be feasible, thoughtfully incorporated into best practices for litter reduction and plastic waste management.

Success or failure of this industry must be assessed by looking at the following metrics: total waste reduction, percent of plastic waste volume diverted from landfills, energy consumption and climate emissions impact, and reduced environmental harm for communities impacted by manufacture, storage, waste management, and transport of plastics.

Brown Pelican (*Pelecanus occidentalis*) Resting on Piling at Sunrise - Phoebus Waterfront Park

Image credit: Lori A Cash



## POLICY RECOMMENDATIONS

Require a sophisticated regular reporting accountability system for chemical conversion facilities that includes data related to the intake, operational, and output aspects of the facility.

Mandate that any submitted permit application for a chemical conversion facility includes a robust public outreach effort that is fully compliant with Virginia's current Environmental Justice policy.

Ensure that all aspects of the regular reporting system as well as the full submitted permit, community meeting and outreach schedule, and opportunities for virtual and in-person comments from the public are available in a prominent and easily accessible location.



# PROTECTING VIRGINIANS FROM HAZARDOUS CHEMICAL SPILLS

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## EXECUTIVE SUMMARY

Throughout the Commonwealth, thousands of manufacturers and other businesses store hazardous chemicals in aboveground storage tanks. The quantity, location, contents, age, and condition of these tanks are unknown because owners are not required to register their tanks with the state's Department of Environmental Quality (DEQ). Nor does Virginia impose comprehensive safety regulations for these hazardous chemical storage tanks, even though petroleum storage tanks have been regulated since 1998. As a result, communities at the fenceline of industry in Virginia face the risk of exposure to uncontained hazardous chemical spills, exacerbated by the growing risk of flooding and extreme weather.

## CHALLENGE

There are likely thousands of aboveground chemical storage tanks in Virginia, but regulators know little about their quantity, location, condition, and contents because the state does not register them.

In Virginia and nationwide, hazardous chemical facilities, many of which may have aboveground tanks, are disproportionately located near low-wealth communities of color, potentially exposing them to chemicals that increase the risk of cancer and respiratory disease.<sup>1</sup> With more intense and frequent flooding in coastal communities, the hazards only worsen. A 2019 report found that over 2,700 flood-prone facilities in the James River watershed are located in the region's most socially vulnerable census tracts.<sup>2</sup> One tract in the City of Chesapeake has 131 flood-exposed facilities and higher rates of poverty than the city overall. A failure of any of these facilities' tanks could send toxic floodwaters into communities less equipped to recover.

**Catastrophic spills from chemical tanks have already occurred in Virginia. In 2008, a tank released 200,000 gallons of liquid fertilizer into the Elizabeth River, exposing nearby residents to toxic ammonia vapor and contaminating the water.**

Catastrophic spills from chemical tanks have already occurred in Virginia. In 2008, a tank collapsed in Chesapeake, releasing 200,000 gallons of liquid fertilizer, which exposed nearby residents to toxic ammonia vapor and contaminated the Elizabeth River.<sup>3</sup> After the spill, Virginia adopted rules for only the largest aboveground fertilizer storage tanks.

Other states are ahead. In 2014, a spill from a tank in Charleston, West Virginia caused devastating economic impacts and 300,000 residents to lose their drinking water.<sup>4</sup> The corroded tanks were unregulated and had not been inspected in 23 years. West Virginia quickly enacted a comprehensive chemical tank law, imposing standards on over 42,000 aboveground storage tanks.

## SOLUTION

In 2015, the General Assembly unanimously passed SB811, a law requiring DEQ to study gaps in Virginia's chemical tank regulations. The study, jointly published with the Departments of Emergency Management and Health, found a concerning lack of siting and public disclosure requirements and recommended a framework for a new tank registration and spill prevention program.

It is past time to close this dangerous regulatory gap and safeguard Virginians against chemical spills that threaten our water resources and the fenceline communities already overburdened by industrial pollution.

At a minimum, Virginia should establish an aboveground chemical storage tank program that requires registration and reporting on the quantity, condition, and contents of tanks. With this inventory, regulators and emergency managers can better plan for the flooding and other environmental hazards facing nearby communities. Additional spill response resources and public engagement are also needed to mitigate harm when spills occur, particularly for communities that face multiple disaster hazards from industrial pollution, climate impacts, and other social and environmental stressors.

Virginia should also adopt siting and construction standards to ensure that new tanks are installed in low-risk areas away from flood zones, overburdened communities, and drinking water sources. For new and existing tanks, the state should impose requirements for maintenance, inspections by qualified engineers, and reporting to ensure that tanks remain safe as they age and to minimize the resource burden on DEQ. And when the worst happens, mandatory comprehensive spill prevention planning and practices will provide another essential layer of safeguards for human health and the environment.

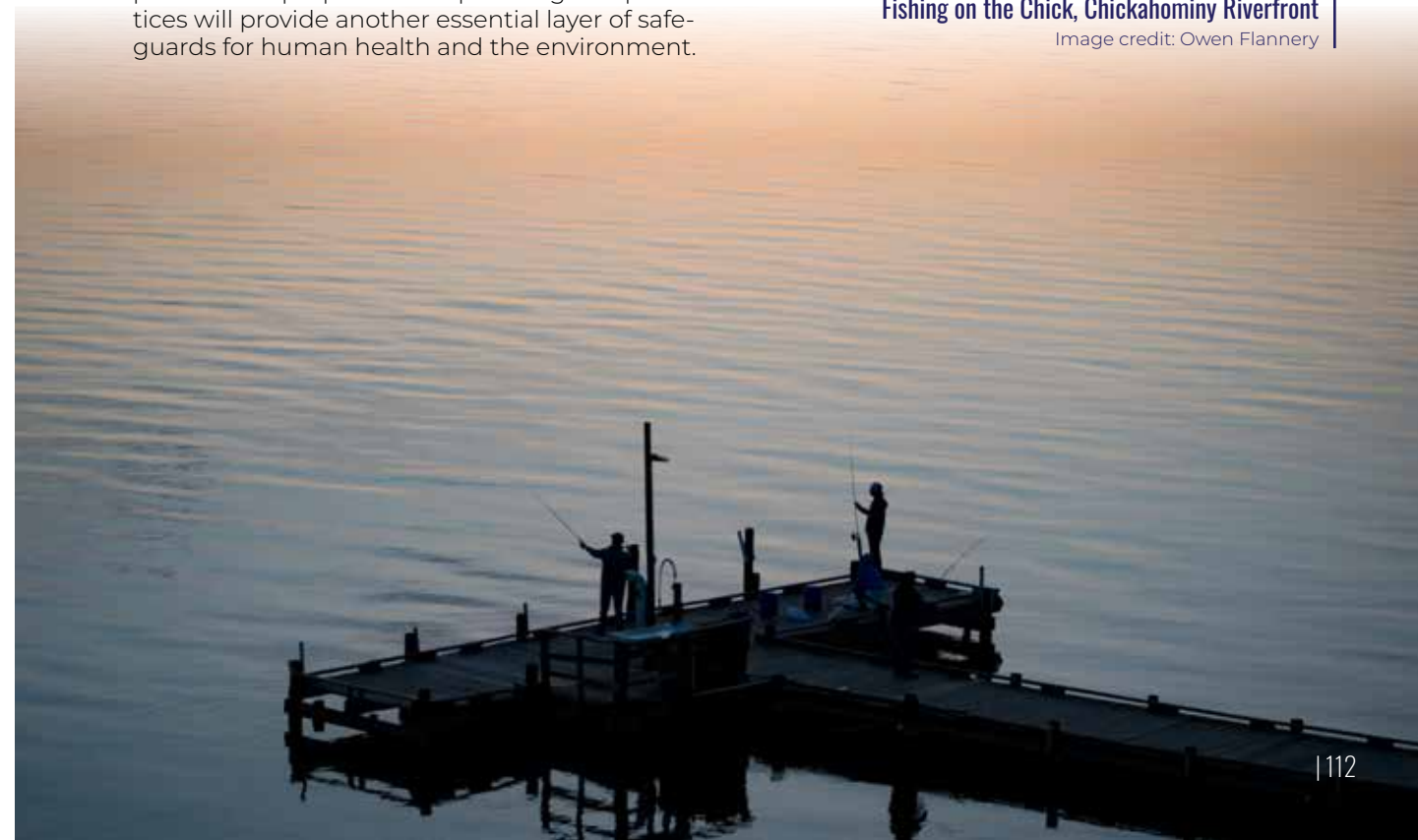
## POLICY RECOMMENDATIONS

Direct DEQ to establish a regulatory program for aboveground chemical storage tanks, modeled on the Commonwealth's existing program for petroleum storage tanks and including registration, reporting, inspections, siting and construction standards, and spill prevention.

Direct DEQ to ensure that all of the Commonwealth's hazardous chemical regulatory programs, including aboveground chemical storage tanks, petroleum, and underground tanks, address climate and natural disaster risks through siting, construction, spill prevention, and response requirements.

Direct DEQ to assess the cumulative impacts of ongoing and disaster-driven hazards to communities and workers affected by unregulated tanks.

Fishing on the Chick, Chickahominy Riverfront  
Image credit: Owen Flannery





# ADDRESSING UNREGULATED TOXINS TO PROTECT PUBLIC HEALTH & THE ENVIRONMENT

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## EXECUTIVE SUMMARY

Industrial toxins are a threat to our environment and our health — they can pollute the air we breathe, leach into our soils, and contaminate our drinking water. Many of these toxins have been linked to cancer, infertility, and other serious health impacts, yet they remain unregulated in the Commonwealth. Virginia should take action to identify and control sources of unregulated toxic pollution so that all communities benefit from clean air, clean water, and healthy soil.

## CHALLENGE

In recent years, concern has grown about industrial toxins that have serious effects on human health and the environment but are not yet controlled by regulatory standards. Per- and polyfluoroalkyl substances (PFAS), a family of thousands of man-made chemicals, represent potent examples of such chemicals. PFAS are toxic, bioaccumulative, and extremely persistent, and for these reasons are commonly referred to as “forever chemicals.”<sup>1,2</sup> Studies suggest that human exposure to these chemicals may adversely affect fertility, raise cholesterol levels, and increase the risk of some forms of cancer.<sup>3,4,5</sup> We come into direct contact with PFAS through their usage in items like waterproof gear, food packaging, firefighting foam, and non-stick pans. Concentrated streams of these chemicals can also be released into our environment — including our drinking water — by industries, wastewater treatment plants, and landfills.

**PFAS are toxic, bioaccumulative, and extremely persistent, and for these reasons are commonly referred to as “forever chemicals.”**

In 2021, the Department of Health is scheduled to complete a study on the toxicity and prevalence of some PFAS in our drinking water.<sup>6</sup> The State Board of Health will then work to establish drinking water standards for PFAS and two other contaminants, chromium-6 and 1,4-dioxane.<sup>7</sup>

Downstream communities, however, too often suffer the health consequences of avoidable pollution and shoulder the costs of removing industrial toxins from their drinking water. Many communities are also exposed to multiple toxic pollutants, and toxic facilities — like landfills, hazardous waste sites, and other industrial facilities — are more often concentrated in low-income communities and communities of color. In regards to PFAS, a study found that low-income communities and communities of color are more likely to live within five miles of a site contaminated by PFAS.<sup>8</sup>

## SOLUTION

While drinking water standards are an important component of protecting public health, ultimately this pollution issue must be tackled by addressing PFAS in consumer products, manufacturing processes, and industrial discharges. The Commonwealth should identify and control pathways of PFAS, 1,4-dioxane, and other industrial toxin pollution and put the responsibility on polluters — not communities — to clean up their waste in order to protect public health and the environment in an effective and equitable way.

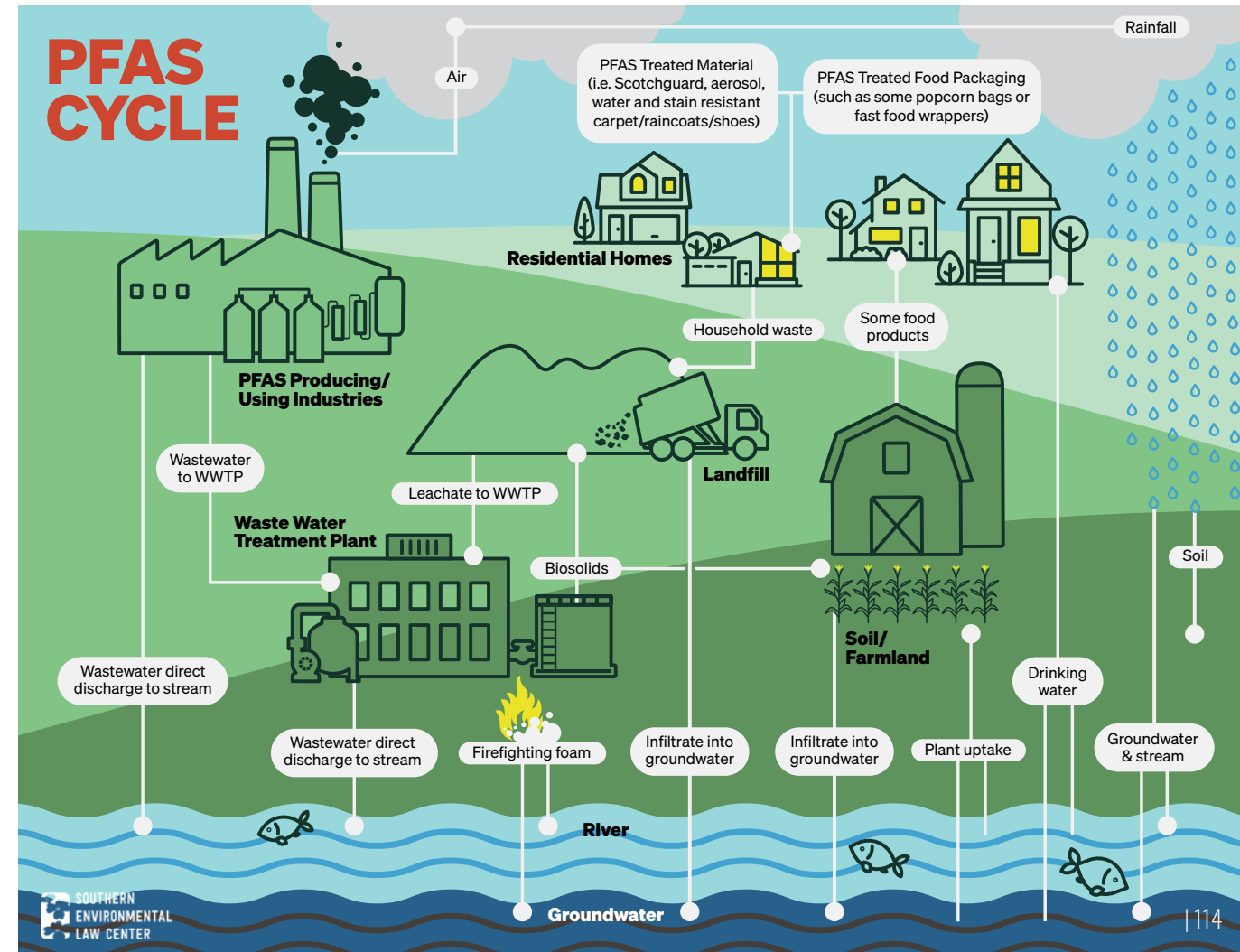
## POLICY RECOMMENDATIONS

Require industrial users to disclose all chemicals released in their discharges as required by the federal Clean Water Act, through Virginia’s wastewater permit and industrial pretreatment programs.

Identify and eliminate potential pathways for PFAS contamination, which include: (i) wastewater discharges; (ii) land-applied biosolids; (iii) landfill leachate; (iv) air pollution; and/or (v) food packaging and consumer products.

Ensure that the Department of Health establishes drinking water standards for PFAS, 1,4-dioxane, and chromium-6 that fully protect public health.

Identify other unregulated toxins that may be of particular concern and assess how to control these chemicals in order to protect human health and the environment.





# PROTECTING VIRGINIA'S ENVIRONMENT & PUBLIC HEALTH FROM INDUSTRIAL METAL MINING

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## EXECUTIVE SUMMARY

Industrial metal<sup>1</sup> mining is moving forward in the Commonwealth without a comprehensive regulatory framework, putting public health and the environment at risk. The heaviest burden is likely to fall on our most vulnerable communities. Surface and groundwater contamination are potential outcomes of these mining activities. Remediating negative impacts is impossible in the context of outdated regulations.

We must support communities most at risk from this extractive industry by pausing the permitting process for metal mining, studying the effects of such mining, and developing improved regulations.

Virginia must fully execute the work group study defined in HB2213, fund its work, and address a broader scope of elements identified as ripe for extraction in the Commonwealth.

## CHALLENGE

In Virginia, a large gold-pyrite belt stretches from Fairfax to Halifax county.<sup>2</sup> This geological structure contains metals like iron, gold, copper, zinc, and pyrite.<sup>3</sup> This belt crosses the James River, a source of drinking water for 2.7 million people<sup>4</sup>, and intersects innumerable Virginia communities, many of which are Environmental Justice communities.<sup>5</sup>

Metal mining is the nation's #1 toxic polluter and is land intensive; existing open-pit mine sites in other states cover thousands of acres.<sup>7</sup> As the Commonwealth spends millions to restore the Chesapeake Bay and reduce nutrient and sediment discharges across the watershed, it makes no sense to introduce this significant new source of pollutants to the watershed without a careful study of its potential impacts on water quality and the ability for Virginia's regulatory programs to prevent such impacts.

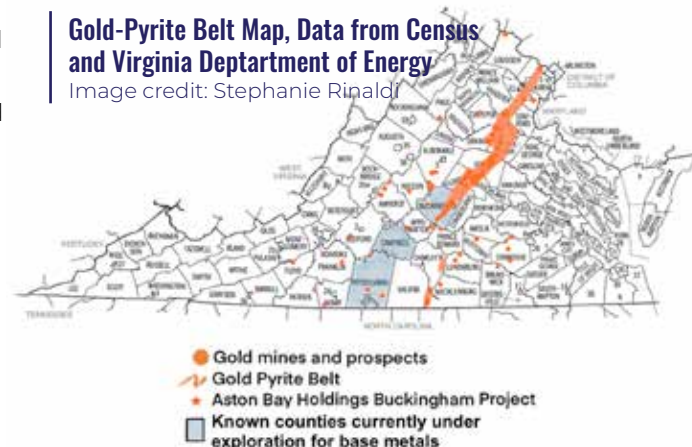
**Metal mining is the nation's #1 toxic polluter and is land intensive; existing open-pit mine sites in other states cover thousands of acres.**

Mining companies have been prospecting around Virginia's gold-pyrite belt for at least the last five years,<sup>8</sup> recently announcing "high grade" findings.<sup>9</sup> Large-scale gold mining has not occurred in Virginia for over 100 years.<sup>10</sup> This type of industrial mining involves processes that result in perpetual acid mine drainage,<sup>11</sup> catastrophic waste containment failures, the destruction of cultural heritage,<sup>12</sup> and the devastation of local economies as a result of the boom and bust cycle of the metal mining industry.<sup>13</sup>

Virginia's regulations are not currently designed to address modern-day industrial base and precious metal mining. In 2021, the General Assembly passed legislation — HB2213 — to study the effects of gold mining on the Commonwealth and assess current regulations' abilities to protect the public health, safety, and welfare of Virginians. That study focuses on gold and is currently in process. While we await its results, the industry continues to work toward opening mines across Virginia.<sup>14</sup>

## Gold-Pyrite Belt Map, Data from Census and Virginia Department of Energy

Image credit: Stephanie Rinaldi



## SOLUTION

HB2213 started a crucial review process, establishing a work group to evaluate impacts of gold mining on public health, safety, and welfare.<sup>15</sup> The news that prospecting companies are swiftly pursuing other base and precious metals such as copper, zinc, and lead, creates greater urgency for broader analysis of existing regulations.<sup>16</sup> The threat of large-scale mining is truly Virginia-wide, and would have both short and long term impacts, so existing bonding, reclamation, closure, and monitoring regulations must be comprehensively evaluated and updated.

Therefore, any workgroup, and subsequent study and review processes, must include robust public engagement and education. Financial and environmental tolls of reclamation should also be part of any evaluations, and should not be overlooked because our current regulatory standards are either non-existent or outdated.

Funding for these next steps must be prioritized in the 2022 legislative session, with budgeting allotted for the second year of HB2213's study. Regulations regarding additional metals, including copper, zinc, and lead, should also be reviewed. Additionally, companies' pursuits of projects while studies are underway reinforces the need for the Commonwealth to press 'pause' on permitting. The granting of permits without sufficient knowledge of project impacts, or with deficient regulatory oversight of impacts can lead to environmental and economic devastation.

## POLICY RECOMMENDATIONS

Execute robust public engagement within the work group review process as written and intended by HB2213 (2021).

Ensure the Department of Energy has the necessary funding to execute the studies and analysis needed.

Analyze current regulations regarding base metals, such as copper, zinc, and lead, that are mined and/or processed using similar techniques.

Establish a moratorium on permitting any large-scale mining of gold, copper, lead, and zinc operations within the Commonwealth until the analysis of mining regulations based on study results is complete.

Bingham Canyon Copper Mine  
Image credit: Billy Clouse



# DECARBONIZING VIRGINIA'S INDUSTRIAL POLLUTION WITH LOW-CARBON CONCRETE

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## EXECUTIVE SUMMARY

Virginia is on a path to decarbonize several sectors of the economy as the Commonwealth will reduce power plant carbon pollution to zero by 2050 and is also taking action on transportation through the Virginia Clean Car Standards and other laws enacted in 2021. However, the industrial sector, which accounts for approximately 10%<sup>1</sup> of the state's emissions and is considered difficult to abate, hasn't received as much attention from policymakers. Carbon emissions from the concrete industry, however, can be addressed through incentives in the state's concrete procurement process to begin to address this major pollution source in an industry-friendly, voluntary way.

## CHALLENGE

Concrete is the world's most common construction material. Its main binding ingredient, Portland cement, accounts for roughly 7% of global carbon emissions.<sup>2</sup> A range of established and emerging production changes, made on a voluntary basis, can significantly reduce the climate impact of concrete. This includes technologies that utilize and store carbon from industrial sources in the material's different components and production processes. In short, the technology is here to make lower-carbon concrete on the producer side.

**Concrete's main binding ingredient accounts for roughly 7% of global carbon emissions.**

## SOLUTION

Because the State Department of Transportation and related agencies are among the largest purchasers of concrete in Virginia, Virginia government purchasing can accelerate market demand for low-carbon alternatives in the private sector through the state's ongoing procurement process. Indeed, concrete procurement is

a major state opportunity to use its power of the purse to reduce carbon pollution from industrial sources. Accordingly, a number of states, municipalities, and counties have proposed or implemented climate-based procurement initiatives to capitalize on this opportunity.

Specifically, a market-based approach can encourage concrete producers to incorporate carbon-reducing methods and products into their bids for state contracts. Lower-carbon mixes – as measured by standardized, third-party lifecycle analyses – gain a competitive advantage during the state's bid evaluation and therefore a greater likelihood of winning contracts. This market-based approach enlists market efficiency to select for positive climate outcomes, builds demand for long-term innovation, and limits fiscal impact and bureaucratic complexity.

Here's how it works:

- For Virginia concrete contracts, bidders may choose to voluntarily submit Environmental Product Declarations ("EPDs") in their bid proposals, to quantify the environmental impact of the concrete across the entire production process. The Global Warming Potential (GWP) measures the carbon pollution associated with concrete production.
- Bidders who submit EPDs are eligible for a "shadow" price discount in the procurement process that automatically (but artificially) lowers their bid, for the purpose of the state's bid selection: the more climate-friendly a bid is, the more likely it is to win the contract.
- The bid with the top-performing (i.e. lowest) GWP score receives a maximum discount of 5%, which effectively "caps" the premium the state pays for cleaner concrete at 5%.

## POLICY RECOMMENDATIONS

- Incentivize cleaner concrete through the state's ongoing procurement process.
- Reform the state's concrete performance to reward clean and green innovation.

James River at Sunset - Richmond, Va |

Image credit: Jenn Clarke





# ENDNOTES

Lake Dummond Summer Solstice  
Image credit: Lori A Cash

## STOPPING UNNECESSARY PIPELINES & PHASING OUT FOSSIL FUEL BUILDOUT

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## ADDRESSING UNREGULATED TOXINS TO PROTECT PUBLIC HEALTH & THE ENVIRONMENT

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## ADDRESSING UNREGULATED TOXINS TO PROTECT PUBLIC HEALTH & THE ENVIRONMENT

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## DECARBONIZING VIRGINIA'S INDUSTRIAL POLLUTION WITH LOW-CARBON CONCRETE

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Supermoon - The Plains, Va  
Image credit: Hugh Kenny

# EQUITABLE & INCLUSIVE GOVERNMENT

None of the conservation efforts detailed in this publication can be realized without an equitable and inclusive government. Our work cannot be considered a success unless our policies and programs represent and benefit all Virginians and do not cause disproportionate harm to low-income communities and communities of color. In order to accomplish this, we need greater regulatory oversight and enforcement, as well as robust public participation. We must also ensure that we are building stewards of our environment through equitable and inclusive environmental education.

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## PRIORITIZING ENVIRONMENTAL JUSTICE IN STATE GOVERNMENT

At its core, environmental justice is about equity. Communities of color and low-income areas should not bear the brunt of pollution from energy, industrial, and agricultural development while others enjoy the economic gains. In 2020, the General Assembly began to develop an essential procedural framework to address and prevent new cases of environmental injustice. However, this work remains incomplete until legislators reform Virginia's environmental permitting and public participation standards so they are equity-based, ensuring the benefits and burdens of natural resource development and protection are justly distributed across all communities in the state.

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## EDUCATING FOR EQUITABLE ENVIRONMENTAL LITERACY

Creating an environmentally literate populace in the Commonwealth requires coordinated leadership, systemic requirements for public schools' graduating seniors, and equitable, substantial investment in programs across Virginia. With the current challenges of climate change and environmental injustice, Virginia has an opportunity now to prioritize the tools needed to develop environmentally literate citizens who understand issues and the systems that influence the environment, and make responsible decisions regarding their impact.

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## IMPROVING ENVIRONMENTAL ENFORCEMENT & TRANSPARENCY FOR A CLEANER, HEALTHIER VIRGINIA

Environmental laws are meaningless without adequate enforcement measures to back them up. Together our recommendations look to address the status quo enforcement approaches in Virginia and increase the public's understanding of pollution in their communities. Fenceline communities across Virginia are overburdened with pollution from facilities in violation of their pollution limits. By providing DEQ adequate funding, authority, and capacity to pursue enforcement and compliance actions, especially in or near environmental justice communities, Virginians can have a cleaner and healthier environment in which to live.

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## ENSURING ROBUST CITIZEN REPRESENTATION THROUGH VIRGINIA'S CITIZEN BOARDS

Virginia's regulatory citizen boards give the people of the Commonwealth a meaningful voice in protecting our natural resources. These volunteers devote time and effort to uphold Virginia's environmental statutes and engage the public in decision-making. This system has many benefits but can be improved through greater transparency, independence, public engagement, and representation from environmental justice and fenceline communities. Yet, the boards' inherent value as independent authorities over regulatory programs must be retained. Virginia policymakers must defend the boards' independence and scope of authority, while they help improve public participation and give the boards better access to information.

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## MODERNIZING PUBLIC ACCESS TO GOVERNMENT DECISION-MAKING & ENSURING ROBUST PARTICIPATION

The challenge of governing during a pandemic invited useful innovations that exemplified how technology can remotely connect constituents with their state government. The return to business in person does not have to mean a return to business as usual. It is imperative that the General Assembly, State Agencies, and Boards continue to provide virtual access to proceedings — retaining and improving upon opportunities for virtual testimony. Additionally, status quo board and agency policies have limited or locked out community voices in vital public processes. Reforms to these barriers would ensure meaningful inclusion and broader engagement with diverse and more representative perspectives, especially those most directly affected by government action.

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# PRIORITIZING ENVIRONMENTAL JUSTICE IN STATE GOVERNMENT

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## EXECUTIVE SUMMARY

At its core, environmental justice is about equity. Communities of color and low-income areas should not bear the brunt of pollution from energy, industrial, and agricultural development while others enjoy the economic gains. Historically, the burdens of pollution have disproportionately affected communities who are predominantly people of color and low-income and the impacts of climate change add new challenges for geographically and economically vulnerable populations.

In 2020, the General Assembly began to develop an essential procedural framework to address and prevent new cases of environmental injustice. However, this work remains incomplete until legislators reform Virginia's environmental permitting and public participation standards so they are equity-based, ensuring the benefits and burdens of natural resource development and protection are justly distributed across all communities in the state.

## CHALLENGE

*Environmental justice* means the fair treatment and meaningful involvement of all people “regardless of race, color, national origin, income, faith, or disability, regarding the development, implementation, or enforcement of any environmental law, regulation, or policy.”<sup>1</sup> According to the U.S. EPA, environmental justice (EJ) will be achieved when 1) all people enjoy the same levels of protection from health and environmental threats, and 2) people have equal access to decision-making processes impacting the health of the places they live, work, play, and worship.<sup>2</sup>

Virginia took significant steps forward in 2020 by making environmental justice the official policy of the Commonwealth, creating a body for citizens to have an EJ advisory role within the

Governor’s administration, and requiring state agency efforts to coordinate the implementation of EJ statewide.

However, the hard work of integrating EJ into government decision-making and realizing the goals of EJ has only just begun. When the U.S. Court of Appeals for the Fourth Circuit rejected an air permit issued by Virginia regulators for a polluting compressor station proposed to be located in the majority-Black community of Union Hill in Buckingham County, the court famously admonished that “environmental justice is not merely a box to be checked,” and that disproportionate impacts must be considered in any siting analysis.<sup>3</sup>

Moreover, a long history of siting polluting resources and extractive industries in communities of color, low-income communities, and rural areas has created a culture in which Virginians possessing the least political and economic power are consistently targeted for new sources of pollution. For example, as recently as 2020, proposals for two new large gas-fired power stations were pending within the same small radius in Charles City County. The same community already houses several other industrial facilities including a large landfill, a smaller gas-fired power station, and an electric transmission substation. Charles City County is majority non-White, rural, and experiences a poverty rate higher than the state average. This is merely one instance of environmental injustice, as examples persist in communities from Southwest, Southside, Hampton Roads, and across the Commonwealth.<sup>5</sup>

**“Environmental justice is not merely a box to be checked” - U.S. Court of Appeals, Fourth Circuit**

## SOLUTION

To achieve equitable health and environmental outcomes, as well as access to decision-making in these matters for all Virginians, legislators should follow the example of President Biden’s new executive order on environmental justice<sup>6</sup> and provide more direction to state agencies, clarifying exactly how to implement EJ in accordance with the Commonwealth’s EJ policy. This is particularly important for agencies with the largest environmental regulatory footprints, such as the Department of Environmental Quality (DEQ), which recently established an EJ Office and Director.<sup>7</sup>

As a minimum foundation to move beyond merely “checking the box,” any agency whose decisions and actions might impact public or environmental health should be required to develop and publish an official EJ policy. These policies must

- require meaningful consideration of EJ, climate change, and potential cumulative impacts of agency actions,
- require the consistent identification of communities that may be disproportionately impacted using community-sourced data whenever possible,
- consider the economic development and infrastructure needs of EJ and frontline communities, and

- provide robust public participation plans for agency actions, emphasizing outreach and community participation.

To achieve equitable environmental outcomes and fair access to decision-making, project permitting must be revamped. There are multiple past examples where impacted community members have found out about a proposed project only after the close of public comments on a key permit.<sup>8</sup> It is essential that permitting agencies and companies seeking permits be required to coordinate pre-application notices and community outreach so that community input is meaningfully considered before any permits are granted.

In addition, the historic pattern of siting multiple pollution sources in the same vulnerable communities will only stop when regulators are required to conduct robust analyses of environmental justice, cumulative impacts, and climate vulnerabilities in the permitting process. Regulators must study both potential environmental justice impacts from proposed new sources and the combined health effects of existing sources with potential new pollutants. They should have the authority to deny applications for new permits whenever disproportionate or cumulative impacts are likely.<sup>9</sup>

## POLICY RECOMMENDATIONS

Require key state agencies, such as the DEQ, the Department of Conservation and Recreation, the Department of Energy, and the Department of Transportation, to develop environmental justice policies and authorize those agencies to promulgate regulations and guidance to implement them.

Require pre-application notice, public meetings, and meaningful community involvement in the environmental permitting processes.

Require agencies to conduct environmental justice and cumulative impacts analyses in environmental permitting processes.

Provide agencies the necessary authority to deny applications for new permits when disproportionate or cumulative impacts would lead to adverse health hazards.

See also *Ensuring Robust Citizen Representation Through Virginia’s Citizen Boards*, pg 131.



# EDUCATING FOR EQUITABLE ENVIRONMENTAL LITERACY

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## EXECUTIVE SUMMARY

Creating an environmentally literate populace in the Commonwealth requires coordinated leadership, systemic requirements for public schools' graduating seniors, and equitable, substantial investment in programs across Virginia. With the current challenges of climate change and environmental injustice, Virginia has an opportunity now to prioritize the tools needed to develop environmentally literate citizens who understand issues and the systems that influence the environment, and make responsible decisions regarding their impact.

## CHALLENGE

Despite the efforts of many individuals and organizations across the Commonwealth, environmental literacy remains a challenge for much of the state, especially those from traditionally disadvantaged communities. The closure of the Virginia Office of Environmental Education in October 2016 removed coordinated leadership by which to promote environmental literacy and focus on equitable access for all Virginia students in quality environmental education. The state agencies are now faced with vacancies in key roles which, without immediate action, puts progress toward the goal of an environmentally literate Commonwealth in even further jeopardy.

Environmental literacy in Virginia is an equity issue. Many communities don't have the resources to provide quality environmental education programs that emphasize field experiences and practical applications, which tie directly to Virginia's emphasis on STEM education.<sup>1</sup> In some cases these are the same communities that lack adequate access to green spaces, which poses both physical and mental health challenges.<sup>2</sup> These are often the same communities that fall victim to environmental injustices because they lack the basic understanding of the systems at

work, both natural and civic. Furthermore, these rich learning experiences benefit academic achievement, student engagement and must be available to all.

As a Commonwealth, we are facing pressing environmental challenges and a rapidly changing climate. To respond to these challenges, Virginia needs an engaged citizenry equipped with the knowledge and motivation to conserve our natural resources and protect our public health. Virginia's next generation of environmental stewards begins with meaningful and inclusive environmental education.

## Virginia's next generation of environmental stewards begins with meaningful and inclusive environmental education.

## SOLUTION

Environmental education leadership at the state-level would ensure better coordination between school districts, nongovernmental organizations, and state agencies, promoting a more holistic and comprehensive plan for improving environmental literacy throughout the Commonwealth. State leaders should partner with organizations that have experience with promoting and providing environmental education and are intentional about bringing these educational opportunities to low income communities and communities of color.

Additionally, increased state funding can help provide every Virginia K-12 student — regardless of race, ethnicity, region, sexual orientation, income, faith or disability — with a quality place-based, outdoor, experiential learning curriculum, such as a meaningful watershed education experience. Such an investment will ensure that all communities across the Commonwealth have

an active role in finding equitable and sustainable solutions to environmental challenges, especially those impacting the health and welfare of environmental justice communities. Furthermore, these rich learning experiences should be available to all.

By instituting an environmental literacy graduation requirement, the Commonwealth would ensure that all of its students graduate high school with the basic knowledge needed to understand issues related to the environment. Currently, there is an optional environmental literacy diploma seal students can choose to earn. This approach is not at the level of widespread adoption and can be difficult for students from under-resourced communities.

## Mural Made by a 4th Grade Class

Image credit: Dorothy Tepper



## POLICY RECOMMENDATIONS

Fund \$1.5M in competitive grants through the general fund to be managed by Department of Conservation and Recreation (DCR), prioritizing underserved communities, to provide every student across the entire Commonwealth — regardless of race, color, national origin, income, faith, disability or region — a meaningful environmental education experience.

Direct the Department of Education to conduct a study on environmental literacy graduation requirements to assess the status of environmental literacy and develop a plan to ensure all graduating Virginia public school students are environmentally literate.

Fund an FTE to coordinate and oversee environmental literacy goals across the state.



# IMPROVING ENVIRONMENTAL ENFORCEMENT & TRANSPARENCY FOR A CLEANER, HEALTHIER VIRGINIA

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## EXECUTIVE SUMMARY

Environmental laws are meaningless without adequate enforcement measures to back them up. Together our recommendations look to address the status quo enforcement approaches in Virginia and increase the public's understanding of pollution in their communities. Fenceline communities<sup>1</sup> across Virginia are overburdened with pollution from facilities in violation of their pollution limits. By providing DEQ adequate funding, authority, and capacity to pursue enforcement and compliance actions, especially in or near environmental justice communities, Virginians can have a cleaner and healthier environment in which to live.

## CHALLENGE

Over the last two decades, the Department of Environmental Quality (DEQ)'s budget has been cut by \$37 million per year and the number of agency staff has reduced by a third. A majority of the permit fees are outdated, set in statute, and do not cover the increased volume and complexity of permits for polluters.<sup>2</sup> A lack of adequate funding, staffing, and statutory authority to robustly pursue enforcement actions (including inspections, sampling, and monitoring), hold polluters accountable, process permits, and engage the public has jeopardized the health of Virginia's air, land, and water. In turn, the health of fenceline communities – oftentimes communities of color and low-income communities who are overburdened by a disproportionate number of pollution sources – suffer as a result.<sup>3</sup> Without necessary legislative changes, DEQ will not be able to fulfill its mission of protecting and enhancing Virginia's environment while promoting “the health and well-being of the citizens of the Commonwealth.”<sup>4</sup>

Likewise, unlike other Bay states in the region, Virginia does not require any annual enforcement and compliance reporting from DEQ. The annual reports serve as an important tool to not only inform the public about DEQ's enforcement activities, putting a spotlight on pollution trends and noncompliant sectors, but to build awareness among state legislators about DEQ's enforcement needs. Without this information, legislators, scientists, and other stakeholders will not be able to access key information about the state's response to illegal pollution in their communities.

**Over the last two decades, the DEQ's budget has been cut by \$37 million per year and the number of agency staff has reduced by a third.**

## SOLUTION

Virginia's DEQ needs adequate funding to ensure the agency has the capacity to pursue enforcement measures and bolster existing monitoring and compliance programs, with a focus on protecting frontline communities. In order to do so, DEQ must have the authority to respond to its budgetary and programmatic needs by increasing permit fees and having the ability to pursue certain enforcement actions, like issuing on-the-spot fines for minor violations. DEQ should have the authority to issue deterrent-based penalties that result in changed behavior from bad actors, or polluters who consistently violate the law or their permit terms.

On a similar front, the legislature must establish an Environmental Justice Enforcement Division within the Virginia Attorney General's office to pursue enforcement actions in pollution hot spots in or near environmental justice communities. This division should work with DEQ's recently-established Environmental Justice Office to pursue initiatives such as increased

community-based air monitoring, restored ambient air toxics monitoring, and the expanded air quality monitoring for particulate matter and ozone — positively impacting Virginia's environmental justice enforcement. DEQ can also ensure its environmental justice goals are better met by seeking out and utilizing a Virginia-based Environmental Justice screening tool, similar to those utilized in other states in the region.

Lastly, the legislature must also ensure that DEQ has full funding to produce the required annual enforcement and compliance reports. These reports will allow the Virginia General Assembly and the public to better understand DEQ's enforcement needs and compliance levels across certain pollution sectors.

## Volunteers Install New Living Shoreline - Irvington, Va

Image credit: Carleigh Starkston



## POLICY RECOMMENDATIONS

Restore funding to DEQ to pre-recession levels and provide DEQ authority to periodically increase permit fees and maximum assessed penalties (on an inflation based scale) to cover program implementation costs, issue stipulated penalties, and collect on-the-spot fines for minor violations.

Ensure DEQ has clear authority to regulate certain types of pollution and pursue enforcement actions for unlawful pollution discharges.

Direct DEQ to submit annual enforcement and compliance reports to the General Assembly highlighting the agency's annual performance results, and the amount of collected penalties, fines, and fees.

Create a dedicated Environmental Justice Enforcement and Compliance division within the state Attorney General's office.



# ENSURING ROBUST CITIZEN REPRESENTATION THROUGH VIRGINIA'S CITIZEN BOARDS

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## EXECUTIVE SUMMARY

Virginia's regulatory citizen boards give the people of the Commonwealth a meaningful voice in protecting our natural resources. These volunteers devote time and effort to uphold Virginia's environmental statutes and engage the public in decision-making. This system has many benefits but can be improved through greater transparency, independence, public engagement, and representation from environmental justice and fenceline communities.<sup>1</sup> Yet, the boards' inherent value as independent authorities over regulatory programs must be retained. Virginia policymakers must defend the boards' independence and scope of authority, while they help improve public participation and give the boards better access to information.

## CHALLENGE

Virginia's regulatory citizen boards, including the State Air Pollution Control Board, State Water Control Board, Waste Management Board, and Marine Resources Commission, play critical roles in ensuring that representatives of residents of the Commonwealth have a meaningful voice in protecting Virginia's natural resources. Through their role in approving, denying, or modifying environmental regulations, permits, and enforcement actions, the boards bring important public perspectives that may not otherwise be accounted for in regulatory programs.

Yet, it has become clear that these volunteers, appointed by the Governor on a staggered basis, often operate with limited and imperfect information when making important decisions. In order to meet their mandates, the boards need to be empowered to receive salient information from the communities affected by a proposed action. In particular, there is a need for fenceline and environmental justice communities to have

greater access to share their concerns with the boards.

State agency staff provide essential technical and administrative expertise to the boards. However, broader access to relevant information from members of the public and affected communities will go a long way to overcoming any agency blinders or limitations that can narrow the options for Board consideration and even lead to industry-tilted decisions that give short shrift to the community or endanger the resource. Similarly, boards have limited ability to seek counsel or expert opinions on issues they face.

## SOLUTION

While Virginia's regulatory boards make decisions on behalf of the residents of the Commonwealth, they often do so without the full benefit of hearing from affected members of the public and non-agency issue experts. Board proceedings are open to the public and many proceedings before regulatory boards enable the public to provide meaningful, substantive feedback for the boards to consider in their decisions regarding major environmental issues. However, unnecessary constraints on the ability of the boards to hear from the general public, including a prerequisite for speaking on a regulatory or permitting issue that a person has previously submitted written comments, can hinder boards' abilities to fully understand the implications.

**While Virginia's regulatory boards make decisions on behalf of the residents of the Commonwealth, they often do so without the full benefit of hearing from affected members of the public and non-agency issue experts.**

In order to improve the public's access to the boards and the boards' ability to benefit from that public engagement, regulatory boards' procedures for soliciting and considering public input should be enhanced. Consideration should be given to increasing language accessibility for board meetings, adding an environmental justice community representative to the board membership, scheduling meetings at times and in locations that maximize the opportunities for public participation, and using both in-person and remote meeting options. Special efforts should be made to include parties most directly affected by a proposed action. Likewise, the boards should be empowered to exercise their statutory authority by receiving information well enough in advance of meetings for board members to adequately review and consider agency recommendations. Agency recommendations to the Boards for regulatory actions must include assessments of environmental justice issues in every case.

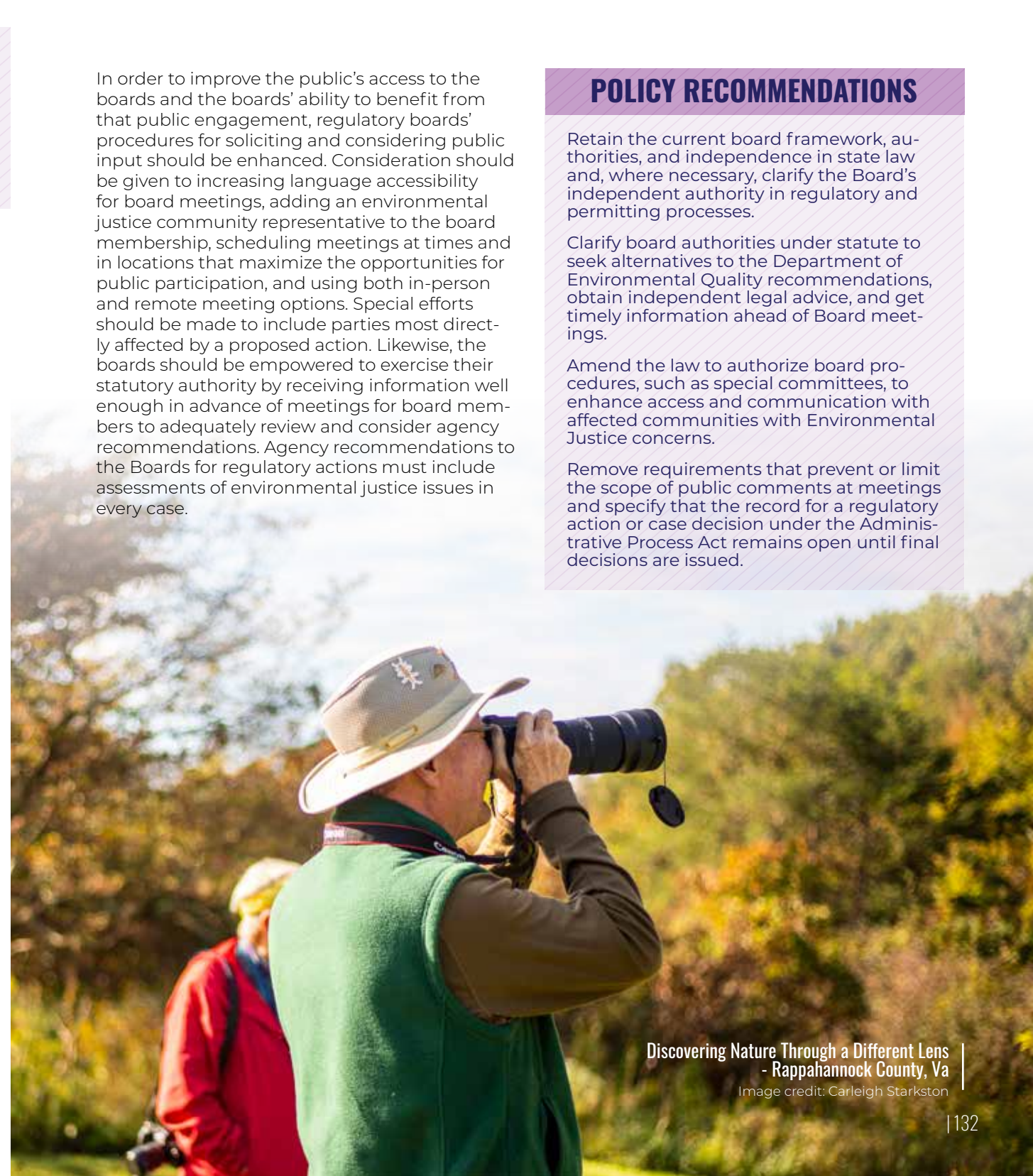
## POLICY RECOMMENDATIONS

Retain the current board framework, authorities, and independence in state law and, where necessary, clarify the Board's independent authority in regulatory and permitting processes.

Clarify board authorities under statute to seek alternatives to the Department of Environmental Quality recommendations, obtain independent legal advice, and get timely information ahead of Board meetings.

Amend the law to authorize board procedures, such as special committees, to enhance access and communication with affected communities with Environmental Justice concerns.

Remove requirements that prevent or limit the scope of public comments at meetings and specify that the record for a regulatory action or case decision under the Administrative Process Act remains open until final decisions are issued.



Discovering Nature Through a Different Lens  
- Rappahannock County, Va  
Image credit: Carleigh Starkston



# MODERNIZING PUBLIC ACCESS TO GOVERNMENT DECISION-MAKING & ENSURING ROBUST PARTICIPATION

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## EXECUTIVE SUMMARY

The challenge of governing during a pandemic invited useful innovations that exemplified how technology can remotely connect constituents with their state government.<sup>1</sup> The return to business in person does not have to mean a return to business as usual. It is imperative that the General Assembly, State Agencies, and Boards continue to provide virtual access to proceedings — retaining and improving upon opportunities for virtual testimony. Additionally, status quo board and agency policies have limited or locked out community voices in vital public processes. Reforms to these barriers would ensure meaningful inclusion and broader engagement with diverse and more representative perspectives, especially those most directly affected by government action.

## CHALLENGE

The COVID-19 pandemic highlighted — both the need for and practicality of — the integration of modern communications tools in Virginia's legislative and agency-level public processes. This change, temporarily provided for through Executive Order 51<sup>2</sup> and a budget amendment,<sup>3</sup> answered the calls of community members who have continuously raised the issue that solely in-person meetings limit access for (among others) parenting, differently-abled, low-income, aging, and working Virginians. However, these policies end with the emergency order, leaving access to modern and inclusive participation at risk.

**Solely in-person meetings limit access for (among others) parenting, differently-abled, low-income, aging, and working Virginians.**

Status quo board and agency policies have the effect of limiting or locking out affected community members while favoring permit applicants. Community members are often unaware of regulatory actions until late in the

administrative process, limiting their ability to effectively participate. Under existing policies community members can only address the Board if they submitted public comment during the defined public comment period. This status quo disadvantages communities even further, as latecomers to agency actions are completely locked out of the decision making process. Further, the public's comments at Board meetings are arbitrarily limited to summarizing the concerns communicated in their written comments and responses to summaries of comments the Department of Environmental Quality (DEQ) prepares for the Board, often leaving very limited time for review and to effectively respond, particularly when DEQ's summary is inadequate. Existing policies also fail to provide any opportunity for public response to new material DEQ presents at board meetings. These practices heavily limit who can participate in the process and reaffirms structural access issues that bar diverse and representative groups of Virginians from participating.

Currently, the Virginia Administrative Process Act (APA) gives agencies the duty and responsibility to come up with their own participation rules. This significant grant of latitude to the agencies themselves cuts out the opportunity for better oversight and leaves the public at risk of narrowed opportunities to participate in vital public processes.

## SOLUTION

- State agencies and the General Assembly should consider how continued use of remote participation in regulatory meetings brings broader engagement with diverse and more representative perspectives. The General Assembly should continue to provide live video streams for all floor proceedings as well as all committee and subcommittee meetings. The General Assembly should also retain and improve newly created opportunities for constituents to provide written testimony in

advance of meetings and oral testimony by phone or video conference during committee and subcommittee meetings.<sup>4</sup>

- During the declared state of emergency, state agencies were permitted to conduct many stakeholder engagement activities, like regulatory advisory panels and technical advisory committees, by video conference without a quorum of participants physically present. Remote participation in regulatory meetings enabled broader engagement by members of the public. With the lapse of the COVID-related emergency order on July 1st, 2021, lawmakers should consider revising state statute to retain and expand opportunities for virtual participation and ensure that the robust participation seen in 2020 and 2021 does not recede.
- Public notice procedures do not reach people with poor internet services and skills or people not traditionally involved with governmental processes. Procedural constraints on commenters, particularly during board meetings, arbitrarily limit the scope and effectiveness of public comments. Additional forums targeted at a wider and more inclusive population must be used to distribute notices. Commenting forums must allow submitters to introduce new information and adequate time to respond to agency presentations. Agency public participation policies must include procedures to foster environmental justice.

## POLICY RECOMMENDATIONS

Extend and codify remote options for Public Participation in legislative and agency processes.

Provide wider notice of agency actions, through media forums, contacts with community groups, and direct contacts to residents whose properties or interests are directly affected.

Remove restrictions on submittal of new information at board meetings to increase the public's ability to respond to agency comment summaries.

Amend the APA to require that public participation policies ensure meaningful involvement of disadvantaged populations and include board committees to interact with affected communities and conduct fact-finding initiatives. These policies should include a provision to (a) fund the expenses of those who serve on state committees, commissions and panels, (b) hold meetings convenient via rail and public transit, and (c) work to expand broadband access in rural areas and frontline communities.

Make permanent the Environmental Justice Office within DEQ, and authorize the promulgation of regulations to implement the Department's environmental justice policy.

Virginia's State Insect: Eastern Tiger Swallowtail Butterfly (*Papilio glaucus*) - Blue Ridge Parkway

Image credit: Michael Proechel





# ENDNOTES

Colorful Sunrise Through Southern Live Oak Tree  
(*Quercus virginiana*) - Fort Monroe, Va

Image credit: Lori A Cash

## PRIORITIZING ENVIRONMENTAL JUSTICE IN STATE GOVERNMENT

<sup>1</sup> Va. Code § 2.2-234. <https://law.lis.virginia.gov/vacode/title2.2/chapter2/section2.2-234>.

<sup>2</sup> *Environmental Justice* U.S. Environmental Protection Agency (June 9, 2021). <https://www.epa.gov/environmentaljustice>.

<sup>3</sup> *Friends of Buckingham v. State Air Pollution Control Board*, 947 F.3d 68, 92 (4th Cir. 2020).

<sup>4</sup> *QuickFacts: Charles City County, Virginia*. U.S. Census Bureau (July 1, 2019). <https://www.census.gov/quickfacts/charlescitycountyvirginia>.

<sup>5</sup> *Virginia*, Mapping for Environmental Justice (2021). <https://mappingforej.berkeley.edu/virginia>.

<sup>6</sup> *FACT SHEET: President Biden Takes Executive Actions to Tackle the Climate Crisis at Home and Abroad, Create Jobs, and Restore Scientific Integrity Across Federal Government*. The White House (January 27, 2021). <https://www.whitehouse.gov/briefing-room/statements-releases/2021/01/27/fact-sheet-president-biden-takes-executive-actions-to-tackle-the-climate-crisis-at-home-and-abroad-create-jobs-and-restore-scientific-integrity-across-federal-government>.

<sup>7</sup> *DEQ Announces New Environmental Justice Office*. Virginia Department of Environmental Quality (April 27, 2021). <https://www.deq.virginia.gov/Home/Components/News/News/88/16>.

<sup>8</sup> Dietrich, Tamara. *Virginia board rejects application for natural gas pipeline expansion project*, Bay Journal (December 14, 2020). [https://www.bayjournal.com/news/energy/virginia-board-rejects-application-for-natural-gas-pipeline-expansion-project/article\\_55ef6890-3b08-11eb-8355-8372b04f17b4.html](https://www.bayjournal.com/news/energy/virginia-board-rejects-application-for-natural-gas-pipeline-expansion-project/article_55ef6890-3b08-11eb-8355-8372b04f17b4.html).

<sup>9</sup> *Environmental Justice Study for the Virginia Department of Environmental Quality*, Skeo Solutions, Metropolitan Group, Ebony Walden Consulting (October 2020). <https://www.deq.virginia.gov/home/showpublisheddocument/8624/637557216750470000>.

## EDUCATING FOR EQUITABLE ENVIRONMENTAL LITERACY

<sup>1</sup> Tadena, Maria, Theresa C., and Monera A. Salic-Hairulla. *Review of Raising Environmental Awareness through Local-Based Environmental Education in STEM Lessons*. Journal of Physics: Conference Series Vol. 1835 (01209): 1-10 (September 2019). <https://doi.org/10.1088/1742-6596/1835/1/012092>.

<sup>2</sup> Nutsford, D., A.L. Pearson, and S. Kingham. *An Ecological Study Investigating the Association between Access to Urban Green Space and Mental Health*. Public Health 127 (11): 1005-11 (November 2013). <https://doi.org/10.1016/j.puhe.2013.08.016>.

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<sup>1</sup> Va. Code § 2.2-234. <https://law.lis.virginia.gov/vacode/title2.2/chapter2/section2.2-234>.

<sup>2</sup> *Report to Governor Ralph S. Northam on Executive Order Number Six Secretary of Natural Resources*. Secretary of Natural Resources Matthew J. Strickler (2018). (Accessed June 2, 2021). <https://www.governor.virginia.gov/media/governorvirginiagov/media/EO-6-Final-Report-from-SNR.pdf>.

*Permit Fee Program Evaluation: A Report to the Honorable Ralph S. Northam, Governor and the House Committees on Appropriations, Agriculture, Chesapeake and Natural Resources, and Finance and the Senate Committees on Agriculture, Conservation and Natural Resources and Finance*. Virginia Department of Environmental Quality (January 2020). <https://rga.lis.virginia.gov/Published/2020/RD7/PDF>.

<sup>3</sup> *EPA Administrator Announces Agency Actions to Advance Environmental Justice*. U.S. Environmental Protection Agency (April 7, 2021). <https://www.epa.gov/newsreleases/epa-administrator-announces-agency-actions-advance-environmental-justice>.

<sup>4</sup> *About Us | Virginia DEQ*. Virginia Department of Environmental Quality (Accessed June 14, 2021). <https://www.deq.virginia.gov/get-involved/about-deq>.

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## MODERNIZING PUBLIC ACCESS TO GOVERNMENT DECISION-MAKING & ENSURING ROBUST PARTICIPATION

<sup>1</sup> Moomaw, Graham, and Sarah Vogelsong. *Governance via Zoom Is Coming to an End in Virginia. Should It?* Virginia Mercury (June 28, 2021). <https://www.virginiamercury.com/2021/06/28/governance-via-zoom-is-coming-to-an-end-in-virginia-should-it>.

<sup>2</sup> Executive Order No. 51 (May 26, 2020), [https://www.governor.virginia.gov/media/governorvirginiagov/executive-actions/EO-51-AMENDED-Declaration-of-a-State-of-Emergency-Due-to-Novel-Coronavirus-\(COVID-19\).pdf](https://www.governor.virginia.gov/media/governorvirginiagov/executive-actions/EO-51-AMENDED-Declaration-of-a-State-of-Emergency-Due-to-Novel-Coronavirus-(COVID-19).pdf).

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<sup>4</sup> *State of the James*, James River Association (2019), <https://thejamesriver.org/about-the-james-river/state-of-the-james>.

<sup>5</sup> *House of Delegates SPEAK*. House of Delegates Clerk's Office (2021). <https://hodspeak.house.virginia.gov>.

<sup>6</sup> Va. Code § 2.2-3708.2. <https://law.justia.com/codes/virginia/2019/title-2-2/chapter-37/section-2-2-3708-2>.



# BUDGET ASKS

## MEET VIRGINIA'S NEED TO TACKLE POLLUTED RUNOFF

\$80 million each year for the Stormwater Local Assistance Fund (pg 5)  
Increased and consistent funding for the Virginia Conservation Assistance Program (pg 5)  
\$150 million, per the Wastewater Needs Assessment, for upgrading the nutrient pollution reduction capabilities of significant wastewater facilities discharging to the Chesapeake Bay and tributaries (pg 9)  
\$883 million to upgrade Richmond's Combined Sewer Overflow system (pg 9)

## PROTECT VIRGINIA'S ENVIRONMENT FROM SINGLE-USE PLASTICS, LITTER, AND MARINE DEBRIS

Raise Virginia's Litter Tax (pg 11)  
Establish statewide beverage container deposit program (pg 11)

## PROTECT VIRGINIA'S FISHERIES

\$400,000 over the biennium to develop a freshwater mussel restoration plan (pg 21)  
Hire dedicated staff to protect and restore mussel populations (2 FTEs) (pg 21)  
\$2 million to increase mussel restoration capacity at hatcheries (pg 21)  
\$5 million to the Aquatic Wildlife Conservation Center at the Buller Fish Hatchery (pg 21)  
\$112,000 to hire an oyster stock assessment scientist (1 FTE) (pg 23)

## SUPPORT CLIMATE-SMART AGRICULTURE

\$100 million per year for the Virginia Agricultural Cost-Share Program. (pg 7)  
\$250k for grants under AFID program for small scale meat slaughterhouse/processing capacity (pg 39)  
\$1 million for cooperative extension to help farmers implement climate-smart practices (pg 39)  
15% set-aside in programs for agriculture, extension, land conservation, and water quality for farmers of color (pg 39)

## PROTECT VIRGINIA'S TREASURED LANDSCAPES

\$300 million per year to natural resource conservation, which would include: (pg 31, 33)  
\$40 million for the Virginia Land Conservation Foundation (pg 31)  
\$5 million for the Virginia Farmland Preservation Fund (pg 31)  
\$5 million for the Virginia Battlefield Preservation Fund (pg 31)  
\$50 million for a new Outdoor Recreation Community Access Fund (pg 31)

## PRESERVE VIRGINIA'S HISTORIC AND CULTURAL RESOURCES

Increased funding for the documentation, identification, and protection of African American and Virginia Indian historic resources. (pg 35)  
Strengthen the Historic Rehabilitation Tax Credit (pg 35)  
\$5 million for the Virginia Battlefield Preservation Fund (pg 35)

## PROMOTING OUTDOOR RECREATION

\$115 million in bonds to fund public access infrastructure projects (pg 51)  
\$21 million to VDOT to develop multi-use trails (pg 53)  
\$21 million to DRC to develop natural surface trails, feasibility and engineering studies, and two FTEs (pg 53)  
\$1 million in funding for grant matches to connect low-income communities, communities of color, and smaller localities to transportation and recreation (pg 53)  
\$100,000 to promote tourism through Virginia Tourism Corporation (pg 53)

## DEVELOPING SAFE, SUSTAINABLE COMMUNITIES

\$200 million for the state affordable housing trust within three years (pg 47)  
Calculate and fully fund the replacement of all facilities in poor condition before funding infrastructure for greenfield development (pg 47)  
Establish an e-bike rebate program (pg 71)

## ACHIEVE SMART TRANSPORTATION

Increase the share of state and regional funding to 50% for transit, rail, bicycle, pedestrian infrastructure by 2030 (pg 61)  
Increase transit and rail capital and operating funding to at least 30% of the entire state transportation budget by 2025, and at least 50% by 2030 (pg 63)  
Fund a costs/benefits study of adding new freight capacity on rail vs. on the highway in the I-81 Corridor (pg 65)  
Funding to expand access to electrified mobility and help Virginians overcome the higher upfront cost of EVs, electric school and transit buses, and e-bikes (pg 67)  
Funding for EV chargers and streamlining EV charging signage (pg 67)  
Dedicate funding from carbon pollution fees towards projects that reduce transportation emissions (pg 69)  
\$2 million for localized air quality monitoring of PM2.5 levels at high-traffic areas in overburdened neighborhoods (pg 69)

## ACHIEVE VIRGINIA'S CLEAN ENERGY GOALS

Provide incentives for retraining programs and Green Career and Technical Education Dual enrollment programs.  
Fund a JLARC Energy Transition Study (pg 79)  
\$2 million per year for the Clean Energy Advisory Board (pg 83)  
\$2 million per year for grants for schools in disadvantaged communities to increase low-income clean energy access.  
25% investment tax credit for customer-owned renewable generation (pg 83)  
Funding for pilot projects that explore solar development best practices (pg 85)  
Fund the Virginia Brownfield and Coal Mine Renewable Energy Grant Program and Brownfields Program (pg 85)

## RESTORE RESOURCES FOR ENVIRONMENTAL EDUCATION AND ENFORCEMENT

\$1.5 million in competitive grants to provide each Virginia K-12 student a meaningful environmental education experience (pg 127)  
Hire a coordinator to oversee environmental literacy goals (1 FTE) (pg 127)  
Restore funding to DEQ to pre-recession levels to ensure adequate environmental enforcement (pg 129)





## OUR PARTNERS

### BALD EAGLE



### CARDINAL

Alliance for the Shenandoah Valley · Appalachian Citizens' Law Center · Blue Ridge Land Conservancy · Chesapeake Legal Alliance · Clean Virginia · Community Climate Collaborative · Environment Virginia · Foundation Earth · Friends of the Rappahannock · Generation 180 · James River Garden Club · Lynnhaven River NOW · Natural Resources Defense Council · Potomac Conservancy · Powered by Facts · Shenandoah Valley Battlefields Foundation · The Nature Conservancy in Virginia · Valley Conservation Council · Virginia Aquarium and Marine Science Center Foundation · Waterkeepers Chesapeake · Wildlands Network

### TIGER SWALLOWTAIL BUTTERFLY

Allegheny-Blue Ridge Alliance · Appalachian Trail Conservancy · Appalachian Voices · Audubon Naturalist Society · Audubon Society of Northern Virginia · Blue Ridge PRISM · Capital Region Land Conservancy · Center for Progressive Reform · Chesapeake Climate Action Network · Clean Fairfax Council · Clean Virginia Waterways · Coalition for Smarter Growth · East Coast Greenway Alliance · Edith J Carrier Arboretum at JMU · Faith Alliance for Climate Solutions · Friends of the Lower Appomattox River · Friends of the North Fork of the Shenandoah · Keep Virginia Beautiful · Loudoun Wildlife Conservancy · Mothers Out Front · New Virginia Majority · Northern Virginia Conservation Trust · Oceana · Pew Charitable Trust · Potomac Riverkeeper Network · Preservation Virginia · Prince William Conservation Alliance · Richmond Audubon Society · Roanoke River Basin Association · Scenic Virginia · Shenandoah National Park Trust · Shenandoah Valley Bicycle Coalition · Sierra Club · Fall of the James Group · SouthWings · Spotswood Garden Club · Trust for Public Land · Tuckahoe Garden Club of Westhampton · Unitarian Universalist Church of Roanoke · UVA Law School, Environmental and Regulatory Law Clinic · Virginia's United Land Trusts · Virginia Association for Environmental Education · Virginia Association of Soil & Water Conservation Districts · Virginia Capital Trail Foundation · Virginia Clinicians for Climate Action · Virginia Environmental Justice Collaborative · Virginia Interfaith Power & Light · Virginia Living Museum · Virginia Native Plant Society · Virginia Urban Forest Council · Virginians for High Speed Rail · Wetlands Watch · Wild Virginia

### DOGWOOD

Albemarle Garden Club · Alexandria Families for Safer Streets · Alliance for the Chesapeake Bay · Ashland Garden Club · Back Bay Restoration Foundation · Bike Norfolk · Bike Walk RVA · Black Family Land Trust · Blue Ridge Garden Club · Boxwood Garden Club · Climate Action Alliance of the Valley · Clinch Coalition · Conservation Park of Virginia, Inc. · Cville100 · Drive Electric RVA · EcoAction Arlington · Fauquier & Loudoun Garden Club · Friends of Accotink Creek · Friends of Buckingham · Friends of Dyke Marsh · Friends of James River Park · Friends of the Rivers of Virginia · Garden Club of the Middle Peninsula · Garden Club of Norfolk · Garden Club of the Northern Neck · Goose Creek Association · Groundwork RVA · Hands Across the Lake · Hunting Creek Garden Club · Leesburg Garden Club · Mattaponi & Pamunkey Rivers Association · Mill Mountain Garden Club · Nelson County Garden Club · New River Valley Bicycle Association · Old Dominion Smallmouth Club · Partnership for Smarter Growth · Rail Solution · Rappahannock League for Environmental Protection · Rappahannock Valley Garden Club · Rivanna Conservation Alliance · Rivanna Garden Club · Rockbridge Area Conservation Council · Rockfish Valley Foundation · RVA Rapid Transit · Shenandoah Green · Sierra Club – Blue Ridge Group · Sierra Club – Chesapeake Bay Group · Sierra Club – Great Falls Group · Sierra Club – Mount Vernon Group · Sierra Club – New River Valley Group · Sierra Club – Piedmont Group · Sierra Club – Potomac Region Outings Group · Sierra Club – Rappahannock Group · Sierra Club – Roanoke Group · Sierra Club – Shenandoah Group · Sierra Club – York River Group · Southside ReLeaf · Surfrider Foundation – Virginia Chapter · The Greater Good Foundation · Virginia Association for Biological Farming · Virginia Bicycling Federation · Virginia Chapter of the Wildlife Society · Virginia Community Rights Network · Virginia Composting Council · Virginia Council of Trout Unlimited · Virginia Green Travel Alliance · Virginia Society of Ornithology · Virginia Wilderness Committee · Washington Area Bicycle Association · Williamsburg Garden Club · Winchester-Clarke Garden Club









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