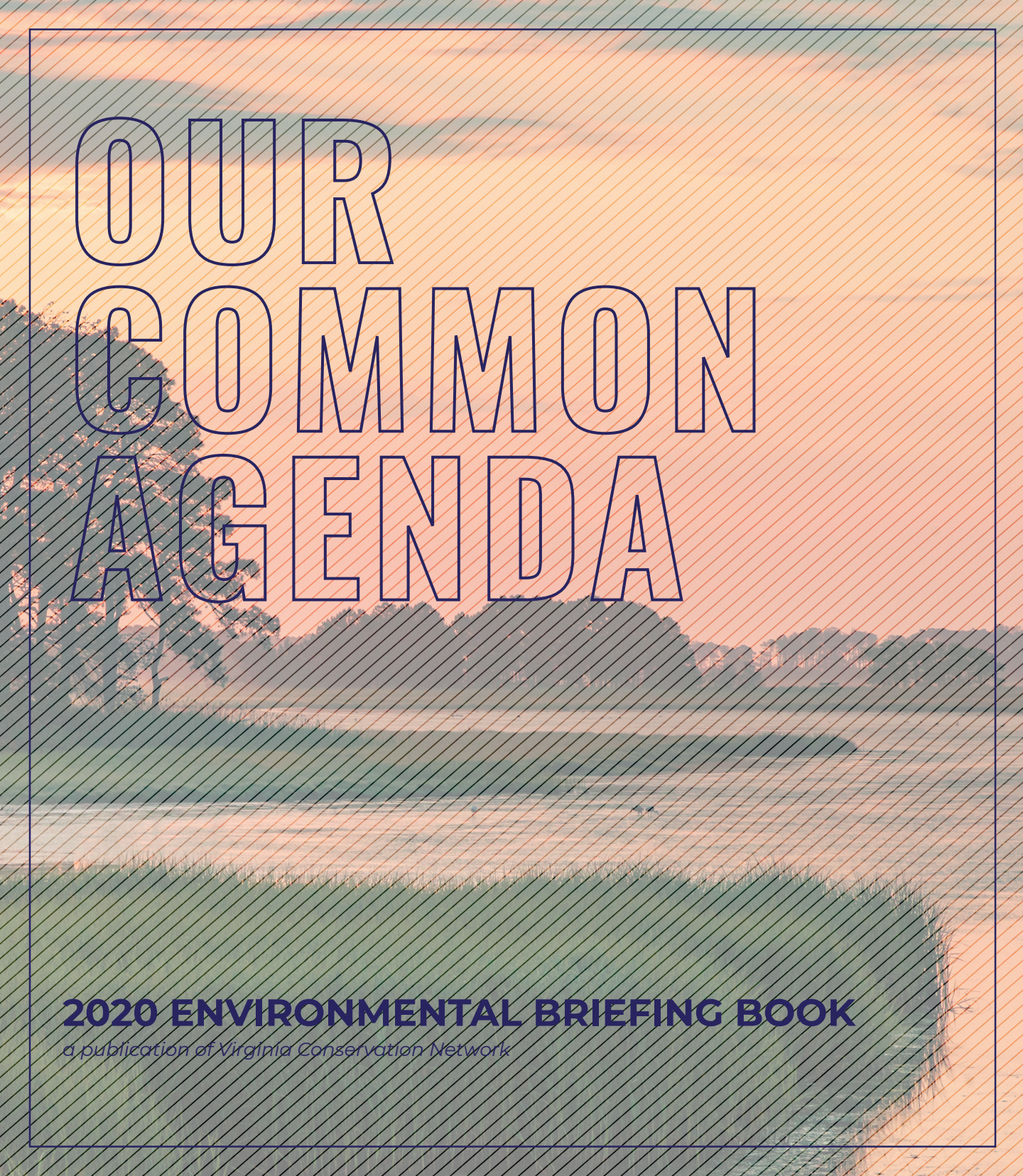

OUR COMMON AGENDA

2020 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 100 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, 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**.

ChooseCleanWater COALITION

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 — and as the Virginia state affiliate for the National Wildlife Federation.

VCN NETWORK PARTNERS

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 100 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'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 and more. Given the diverse work of our Partners, VCN organizes its programs into four main categories: Healthy Rivers, Clean Energy and Climate, Land Conservation, and Land Use and Transportation. To view our list of partners online, visit vcnva.org/our-partners.

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OUR COMMON AGENDA

A MESSAGE FROM THE EXECUTIVE DIRECTOR

Thank you for picking up a copy of *Our Common Agenda*.

An annual publication of Virginia Conservation Network (VCN), *Our Common Agenda – the 2020 Environmental Briefing Book*, is written by Virginia's top conservation advocates to showcase the environmental community's collective state-level policy priorities in the coming year.

This book is meant to serve as an education tool with in-depth analysis of the conservation issues currently facing the Commonwealth paired with practical, state-level policy solutions. It is unique in that it is written by our partners - experts in the conservation community here in Virginia. Our authors ground their research and findings in science and on-the-ground experience to present practical, non-partisan solutions. Contact information for each of our authors is provided – this is your conservation rolodex.

This year's book covers a range of important topics including:

- Restoring our rivers and streams to meet our Chesapeake Bay cleanup goals;
- A pathway to power Virginia with clean energy;
- Transforming our transportation through investments in transit and walkable/bikeable communities;
- Conserving Virginia's landscape and our outdoor economy from farmlands to hiking trails;
- And much more.

In addition to considering how policies can best restore our air, water, landscapes and wildlife, we know that the health of our environment also impacts the every-day lived experience of all Virginians. Each author considered how our policy recommendations may impact our most vulnerable communities – particularly, lower income communities and communities of color as, all too often, environmental burdens disproportionately impact these communities.

I hope you find the Environmental Briefing Book a helpful resource throughout the year. If you would like more information on any of these topics, please don't hesitate to reach out to myself or any of the advocates listed in this briefing book. I'm looking forward to working with you to make progress in these issues over the next year and beyond.

Thank you,

Mary Rafferty
Executive Director

RESTORING VIRGINIA'S WATERS

EXECUTIVE SUMMARIES AND CONTACT INFORMATION

VCN POINT OF CONTACT

Pat Calvert
Policy and Campaigns Manager, Water and Land Conservation
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GIVING FARMERS THE TOOLS THEY NEED TO PROTECT OUR RIVERS AND STREAMS

Historically, Virginia's funding for agricultural best management practices (BMPs) and associated technical assistance has fluctuated significantly from year to year but has always fallen far below the state's documented need. But, the 2019 General Assembly turned a page, providing almost $90 million for conservation practices and assistance. Strong, sustained funding at the level identified in the biennial Agricultural Needs Assessment will improve water quality and ensure the continued vitality of agricultural economies in communities across the Commonwealth, both in and beyond the Chesapeake Bay Watershed.

Anna Killius // James River Association // akillius@jrava.org
Danielle Simms // Virginia League of Conservation Voters // dsimms@valcv.org
Margaret L. (Peggy) Sanner // Chesapeake Bay Foundation // psanner@cbf.org

TACKLING POLLUTED STORMWATER RUNOFF AND RESTORING LOCAL WATER QUALITY

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 funding support and protecting our existing stormwater management regulations.

Kare Forget // Lynnhaven River NOW // karen@lrnow.org
Anna Killius // James River Association // akillius@jrava.org
Danielle Simms // Virginia League of Conservation Voters // dsimms@valcv.org

UPGRADING WASTEWATER TREATMENT IN VIRGINIA

In the last decade and a half, Virginia legislators have enacted a suite of programs, including a watershed general permit and a nutrient trading program, along with consistent funding through the Water Quality Improvement Fund, to help the wastewater sector reduce pollution to waterways. As positive results and new challenges begin to appear, Virginia must remain committed to this work by ensuring robust and sustained funding for continued modernization of its wastewater fleet.

Margaret L. (Peggy) Sanner // Chesapeake Bay Foundation // psanner@cbf.org

REDUCING LITTER POLLUTION IN VIRGINIA'S WATERWAYS

The state legislature must take a leadership role on litter and carefully consider plastic's significant prevalence in our local waterways. Virginia should encourage businesses as well as citizens to reduce waste generation. China's ban on US trash and recyclables is a clear indication that there should be an expanded emphasis on waste prevention.

Jen Cole // Clean Fairfax Council// jen@cleanfairfax.org
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PROTECTING VIRGINIA'S WATERS FROM RISKY AND UNNECESSARY PIPELINE CONSTRUCTION

The Virginia General Assembly should work to protect landowners, ratepayers and the environment from risky and unnecessary natural gas pipeline development. It is critical for state agencies to conduct thorough, transparent and independent analyses that investigate the need for the pipelines and impacts on Virginia's water resources, natural landscape and communities.

Jessica Sims // Sierra Club, Virginia Chapter // jessica.sims@sierraclub.org
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UNDERSTANDING THE ALBERMARLE WATERSHED AND PLANNING FOR THE FUTURE

A significant part of Virginia lies in the Albemarle-Pamlico watershed and we have a responsibility to restore and protect the natural resources as well as the quality of life of the residents in this watershed. We also have an obligation to work together with our partners in North Carolina to plan effectively for the future of this beautiful and bountiful estuary.

Karen Forget // Lynnhaven River NOW // karen@lrnow.org
Scott Van Der Hyde // Roanoke River Bason Association // scottvanderhyde@gmail.com

GIVING FARMERS THE TOOLS THEY NEED TO PROTECT OUR RIVERS AND STREAMS

Anna Killius // James River Association | Danielle Simms // Virginia League of Conservation Voters
Margaret L. (Peggy) Sanner // Chesapeake Bay Foundation

INTRODUCTION

Agriculture is Virginia's largest industry by many metrics — economic impact, jobs, and land area. However, with approximately 46,000 farms covering 8.2 million acres (32%) of the Commonwealth, agriculture is also the largest source of nutrient and sediment pollution reaching local streams and the Chesapeake Bay. While many well-operated farms employ sound conservation practices that protect water quality, a lack of funding and technical resources prevent many farmers from implementing similar practices. Consequently, excess nutrients, sediment, and bacteria flow into local waterways, including the Chesapeake Bay.

All of these pollutants negatively impact Virginia's local waterways in unique ways. Nutrient pollution causes large algal blooms that can block sunlight before sinking to the bottom of our waterways to rot. Rotting algae depletes oxygen from the water and can cause dead zones, which impact important commercial fisheries. Some species of algae may even produce toxic compounds harmful to humans. Sediment pollution buries important habitats at the bottom of our waterways, including gravel spawning beds for trout and oyster reefs. Suspended sediment also blocks sunlight from reaching important underwater grasses, which act as habitat for blue crabs and other important aquatic species. Bacterial pollution harms our ability to safely enjoy our rivers and streams and can lead to beach and shellfish harvesting closures, as well as human health risks.

For many of Virginia's waterways with poor water quality, nutrient, sediment, and bacteria pollution are to blame. The Chesapeake Bay is impaired for nutrients and sediment, and monitoring shows that nearly half of Virginia's rivers and streams also have bacterial impairments. Virginia's latest Chesapeake Bay Watershed Implementation Plan has identified the agricultural sector as a critical part of addressing these water quality problems. Farmers are being asked in the Phase III Watershed Implementation Plan to protect their local streams and the Chesapeake Bay by installing voluntary conservation practices on their lands by 2025. To do that, farmers should be supported with a fully-funded Virginia Agricultural Cost-Share Program (VACS).

BACKGROUND

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 work with farmers and landowners to identify the biggest problems facing local water quality, provide technical assistance in addressing those problems through conservation practices, and help cover the cost of installation. VACS has assisted thousands of farmers in implementing more than 50 different types of best management practices (BMPs) to keep pollution from reaching Virginia's waterways. These BMPs include stream exclusion systems, which keep livestock out of streams while providing alternative water sources; nutrient management plans, which help ensure farmers use a sustainable amount of fertilizer; riparian buffers; conservation tillage; cover crops; and, many other practices essential to protecting our streams, lakes, rivers, and bays.

> VACS HAS ASSISTED THOUSANDS OF FARMERS IN IMPLEMENTING MORE THAN 50 DIFFERENT TYPES OF BEST MANAGEMENT PRACTICES (BMPS) TO KEEP POLLUTION FROM REACHING VIRGINIA'S WATERWAYS

Investments in these agricultural BMPs not only help improve water quality, but they create jobs and deliver economic benefits. Livestock exclusion from streams can prevent calf losses and improve herd health. Increased efficiency of nutrient application helps reduce fertilizer loss while improving crop yield. Conservation tillage, cover crops, rotational grazing, and other practices further improve soil health and productivity. Implementation of these agricultural BMPs supports Virginia's agricultural economy while restoring the Chesapeake Bay and all of our rivers and streams.

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 across the Commonwealth. The most recent assessment shows that in order to maximize benefits to local and downstream waterways and Virginia communities, we need to fully fund VACS

at $100 million per year. On average, the Virginia General Assembly has historically provided roughly one third of the documented need, but during the 2019 Session, we came close, securing nearly $90 million for Virginia farmers. This needs to be a down payment on a sustained investment, one that is not without precedent in the Commonwealth. Since 2010, Virginia has invested nearly one billion dollars to upgrade wastewater treatment plants, substantially reducing pollution from this sector. Our waterways are already responding to the improvement. If our state provides a similar level of investment in agricultural BMPs — which are the most cost-effective means of reducing polluted runoff — we can significantly reduce pollution from the agricultural sector and achieve strong water quality benefits for all Virginians.

CONCLUSION

Historically, Virginia's funding for agricultural BMPs and associated technical assistance has fluctuated significantly from year to year but has always fallen far below the state's documented need. But, the 2019 General Assembly turned a page, providing almost $90 million for conservation practices and assistance. Strong, sustained funding at the level identified in the biennial Agricultural Needs Assessment will improve water quality and ensure the continued vitality of agricultural economies in communities across the Commonwealth, both in and beyond the Chesapeake Bay Watershed.

POLICY RECOMMENDATIONS

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

Uphold consistent and adequate annual funding to ensure certainty for Virginia farmers and those who help them.

A RIPARIAN BUFFER PLANTED BY JAMES RIVER ASSOCIATION. STREAM EXCLUSIONS SYSTEMS HELP KEEP LIVESTOCK OUT OF STREAMS WHILE ALSO PROVIDING ALTERNATIVE WATER SOURCES.
Image credit: James River Association

TACKLING POLLUTED STORMWATER RUNOFF AND RESTORING LOCAL WATER QUALITY

Karen Forget // Lynnhaven River NOW | Anna Killius // James River Association
Danielle Simms // Virginia League of Conservation Voters

INTRODUCTION

Virginians rely on local waterways for clean drinking water, vibrant communities, and strong economies. Three-out-of-four Virginians rely on healthy headwater streams for their drinking water. Our Commonwealth is the largest seafood producer on the East Coast, with over 50 commercially harvested species. Our outdoor recreation industry is booming, providing 197,000 direct jobs and $1.2 billion in tax revenue. The James River Park System alone generates over $33 million in income per year for the Richmond region. Chesapeake and Ohio Canal National Historic Park, stretching along the Potomac River, attracted 4.4 million visitors in 2018 and generated $122 million in economic output for local gateway communities.

Despite our reliance on healthy waterways, polluted runoff — the muddy stew of stormwater, dirt, bacteria, and toxins that runs off streets, roofs, 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. We need to step up and address this issue, or we risk failing at the Commonwealth's goal to restore our local streams and the Bay by 2025.

BACKGROUND

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. As Virginia continues to develop, we've created more impervious surfaces — parking lots, roofs, and roads — which carry more polluted stormwater runoff to our waterways. 2018 was the wettest year on record for cities and towns across the Commonwealth. With more intense rainfall events on the horizon, untreated stormwater may exacerbate flooding and the potential for loss of life and property damage. As Virginia's new Phase III Watershed Implementation Plan points out, it is critically important that we invest in better stormwater control, not only to protect clean water, but to protect our communities.

STORMWATER LOCAL ASSISTANCE FUND (SLAF)

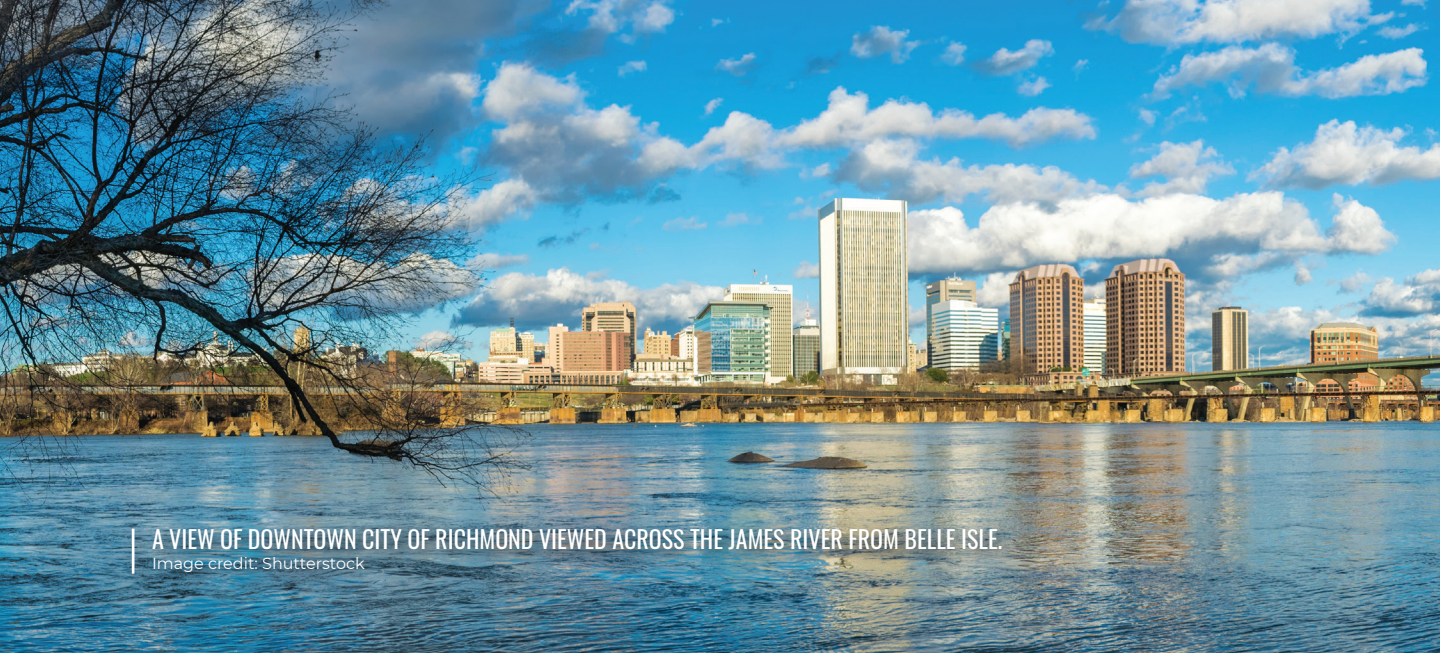
Much of our urban and suburban infrastructure was built before we fully understood how stormwater degrades local streams. Nevertheless, many larger localities are now required to reduce the nutrients and sediment that they contribute to Virginia's waterways. Implementing programs to achieve these reductions — like projects to retrofit older infrastructure — can be expensive. Fortunately, the Virginia General Assembly created the Stormwater Local Assistance Fund (SLAF), a state and local matching grant program that helps localities protect and improve the health of our waterways. Over its lifespan, SLAF has provided grants to over 50 localities for 217 projects across Virginia, and demand for this program continues to grow. In the most recent round, localities submitted proposals for nearly twice the amount of funding available. The 2019 General Assembly provided $10 million for SLAF but much more is needed to meet our Chesapeake Bay goals. We estimate that the state needs to invest $80 million each year through 2025, based on the cost and performance of past projects, and how much more we still have to do.

> AS VIRGINIA'S NEW PHASE III WATERSHED IMPLEMENTATION PLAN POINTS OUT, IT IS CRITICALLY IMPORTANT THAT WE INVEST IN BETTER STORMWATER CONTROL, NOT ONLY TO PROTECT CLEAN WATER, BUT TO PROTECT OUR COMMUNITIES.

LOCAL CASE STUDIES

Localities across Virginia have improved the health of their waterways using SLAF grants while achieving important co-benefits like increasing tourism, beautifying public parks, and reducing flooding. Here are just two examples:

- The City of Hopewell restored a wetland to filter the water that flows into the James River. Hopewell used the SLAF grant as a match for a federal National Fish and Wildlife grant, which enabled the city to achieve substantial nutrient reductions while providing a restored park as a city amenity; and,
- Similarly, the City of Waynesboro restored a wetland using a combination of SLAF and federal funds to achieve significant pollution reductions and meet its permit requirements. The city's project provides a healthier environment for its citizens while attracting tourists to its lively trout streams.



A VIEW OF DOWNTOWN CITY OF RICHMOND VIEWED ACROSS THE JAMES RIVER FROM BELLE ISLE.
Image credit: Shutterstock

VIRGINIA CONSERVATION ASSISTANCE PROGRAM (VCAP)

Addressing polluted stormwater runoff takes a team effort to treat both public and private property. The Virginia Conservation Assistance Program (VCAP) provides cost-share assistance for smaller-scale residential and commercial projects, such as rain gardens, conservation landscaping, and permeable driveways. VCAP provides financial incentives and technical and educational assistance to property owners to address problems like erosion, poor drainage, or lack of vegetation. Since the program began in 2012, Virginia's Soil and Water Conservation Districts and their partners have installed over 387 projects.

However, there are 45 projects -- worth $366,000 -- in a project application backlog currently awaiting funding. Property owners, businesses, schools, and localities have come to rely on VCAP as a cost-effective method of addressing erosion and polluted stormwater runoff in their communities while helping to engage and educate the public. Last year, the General Assembly included $1 million to support VCAP projects across the state. Consistent, stable funding is an important part of encouraging property owners to participate.

STORMWATER DEFENSE

Another 41 projects have been approved and are in the construction phase for a total of 428 stormwater best management practices (BMPs).

Virginia's stormwater technical rules that took effect in July 2014 are designed to minimize pollution from new construction. These rules help us slow the growth of polluted runoff from our urban and suburban areas.

However, our stormwater management program comes under attack every year. Virginia's legislators must remain strong in their commitment to maintain, enforce, and where possible, improve the program.

CONCLUSION

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 funding support and protecting our existing stormwater management regulations.

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 consistent and adequate 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.

Protect Virginia's Stormwater Management Program to promote smarter development and flood resilient communities.

UPGRADING WASTEWATER TREATMENT IN VIRGINIA

Margaret L. (Peggy) Sanner // Chesapeake Bay Foundation

INTRODUCTION

Virginia and regional partners have been steadily working to restore the Chesapeake Bay since 1983. The Phase II Watershed Implementation Plan boosted this effort, calling for significant pollution reductions from all major sectors—wastewater, agriculture, stormwater, septic—over a 15-year period. Significant progress has been achieved, but enhanced efforts are now needed in the face of new challenges, including population increases and climate change.

Virginia's wastewater facilities have played a major role in progress to date, but they – along with farms, localities and other major pollution-causing sectors—are being asked to accelerate their nutrient pollution reduction work in the Phase III Watershed Implementation Plan (WIP III). To support this effort, the Virginia General Assembly must appropriate funding —$55 million each year of the biennium—to provide matching grants for these needed upgrades.

BACKGROUND

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 they discharge to local rivers and the Bay. These upgrades have occurred across the Commonwealth, but the level of effort has been highest in the Potomac River watershed.

We are now seeing the beginnings of a remarkable, though still fragile, recovery -- 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 reduction capabilities.

The work is not complete, however. Water quality monitoring and advanced computer modeling analyzing current land uses, population growth, the effects of climate change, and a myriad of other factors show that 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 WIP III, which addresses the work needed by all sectors.

For wastewater, the WIP III prescribes an equitable plan that potentially will focus on bringing facilities – especially in the James and York River watersheds – to a level of effort similar to that achieved by Potomac River facilities.

> WE ARE NOW SEEING THE BEGINNINGS OF A REMARKABLE, THOUGH STILL FRAGILE, RECOVERY…THANKS TO THE COMMONWEALTH'S LONG-TERM FINANCIAL COMMITMENT TO THE PROGRAM, REFLECTED IN SUSTAINED FUNDING FOR MATCHING GRANTS TO UPGRADE NUTRIENT REDUCTION CAPABILITIES.

Based on Virginia's average cost to date for reducing nutrient pollutants from the wastewater sector, Virginia will need an additional $275 million over the next five years (an estimated $55 million per year) to meet the goal.

CONCLUSION

In the last decade and a half, Virginia legislators have enacted a suite of programs, including a watershed general permit and a nutrient trading program, along with consistent funding through the Water Quality Improvement Fund -- to help the wastewater sector reduce pollution to Virginia's waterways. As positive results and new challenges begin to appear, Virginia must remain committed to this work by ensuring robust and sustained funding for continued modernization of the Commonwealth's wastewater fleet.

POLICY RECOMMENDATIONS

Ensure that the biennial budget appropriates at least $55 million per year for upgrading the nutrient pollution reduction capabilities of significant wastewater facilities discharging to the Chesapeake Bay and tributaries. and those who help them.

CIRCULAR SETTERS OF AN INDUSTRIAL WASTEWATER TREATMENT PLANT.
Image credit: Shutterstock

REDUCING LITTER POLLUTION IN VIRGINIA'S WATERWAYS

Jen Cole // Clean Fairfax Council | Zach Huntington // Clean Fairfax Council | Steven Carter-Lovejoy // Sierra Club, Virginia Chapter | Bryan Hoffman // Friends of the Rappahannock | Karen Forget // Lynnhaven River NOW

INTRODUCTION

The health of Virginia's rivers and streams is vital to a strong economy. For example, a healthy Chesapeake Bay Watershed has an economic value of $129.7 billion to the region.[1] The Commonwealth has a storied history of responsible water conservation and boasts renowned natural aquatic wonders such as the Shenandoah and Clinch Rivers, the bountiful Chesapeake Bay, and our beautiful beaches. Nonetheless, litter pollution in our watershed remains a substantial unresolved issue. New research detailing the financial impacts and consequences of unchecked plastic pollution on waterways, wildlife, and human health has made this issue urgent.

BACKGROUND

The most common types of litter found in our waterways are cigarette butts, plastic bottles, plastic bags, food wrappers, balloons, and fast-food cutlery such as straws, cups, plates, forks, knives, and spoons. Plastic litter is particularly problematic – it can last indefinitely. After it breaks down, it persists as micro particles which can have harmful but largely unstudied effects on human health.

Deliberate littering and illegal dumping in streets and parks is a problem, but more often littering is unintentional. Discarded trash escaping from unsecured trash and recycling receptacles used by homes and businesses contributes to a substantial portion of litter debris. Currently, municipalities are given inadequate tools to control this kind of litter. Consequently, the litter makes its way into waterways through the local stormwater system. During a rain event, uncontrolled debris is swept from streets into drains that flow directly into out-of-sight streams. From there, the litter either ends up in local tributaries or is swept into larger bodies of water such as the Chesapeake Bay or Atlantic Ocean. According to the EPA, 80% of marine debris originates as land-based trash.[2]

Litter is not just an eyesore – it has wide ranging impacts on wildlife and water infrastructure. Ingestion or entanglement often proves fatal for wildlife. Turtles, birds, fish, mammals, and important filtering bivalves like oysters and mussels mistake plastic items for food.[3] This is particularly prevalent in the use of plastic balloons – one of the most harmful and deadly litter items to wildlife. Most latex balloons released into the atmosphere burst before returning to the ground. Burst balloons closely resemble jelly fish – a favorite food of sea turtles and other marine animals. Balloon ribbons also easily entangle birds and cause lasting damage[4]. However, many balloon releases are currently exempt from Virginia code as being considered litter.

Regarding water infrastructure, flooding from storm drain blockages due to litter is a common problem. In addition, litter has economic impacts on communities, reducing property values and tourism spending.

> LITTER IS NOT JUST AN EYESORE – IT HAS WIDE RANGING IMPACTS ON WILDLIFE AND WATER INFRASTRUCTURE. INGESTION OR ENTANGLEMENT OFTEN PROVES FATAL FOR WILDLIFE.

The direct cost of litter clean-up is substantial. Keep America Beautiful estimates that businesses pay about 80% of the costs of cleanup – over $9 billion per year. Cities, counties, and states pay much of the remaining cost, often putting an undue burden on the community. Much of this cost comes from unreported work by employees, often at the expense of other work requirements, and volunteers.[4] The Virginia Department of Transportation estimates that it spends $6 million a year picking up litter on roadways (not including its Adopt-A-Highway program, which contributes an estimated $1.35 million in pickup costs by volunteers).[5]

Waste collection costs around the country continue to rise, putting a premium on reducing the overall presence of plastic bags in circulation and reducing the complications that occur when they are mixed into the process. Plastic bags cause an estimated $9,500 per month in additional labor at a single recycling facility due to entanglement in, and subsequent maintenance on, sorting machinery[6]. Localities that have instituted plastic bag legislation have less litter overall and when plastic bags are not contaminating true recyclable materials, the process operates more efficiently[7].

Virginia is the first state on the east coast with a plan in place to reduce marine debris: The Virginia Marine Debris Reduction Plan.[8] While the plan outlines goals

and priorities for local governments and nonprofits working on this issue, legislators are in a unique position to contribute to water quality improvements. Neighboring lawmakers are steps ahead, making significant strides with commonsense policy – Washington DC and Maryland have both implemented a polystyrene ban. Washington D.C. has instituted a 5-cent fee on plastic bags to address the Anacostia River's pollution problem. City officials reported a 50-70% decrease in household plastic bag usage, and the Alice Ferguson Foundation reported similar decreases during recent cleanup inventories. Revenues from the bag fee (more than $2 million annually) are used to implement education, trash capture, and stream restoration projects throughout the Anacostia Watershed. Additionally, funds are used to distribute reusable bags to low-income and aging populations throughout the District.[9]

CONCLUSION

The state legislature must take a leadership role on this issue and carefully consider plastic's significant prevalence in our local waterways. Virginia should encourage businesses as well as citizens to reduce waste generation. China's ban on US trash and recyclables is a clear indication that there should be an expanded emphasis on waste prevention.

POLICY RECOMMENDATIONS

Adjust the Litter Tax (58.1-1707), an annual $10-25 fee (established in 1977) on retailers that sell commonly littered products to account for 42 years of inflation.

Allow local jurisdictions to establish fees or bans on commonly littered items such as single-use plastics. Localities should be given legislative latitude to choose different ways to address the problem and provide examples for others to follow. Any legislation with a possible fee-based structure should consider diverting said funds towards cleanup programs or education that helps reduce waste.

Remove the section in the Virginia code (29.1-101.1) exempting balloon releases from being considered litter in light of the devastating impacts of balloon litter on birds and marine animals. Impose the same fines for violation as are applicable to all other forms of litter in Virginia.

AN EGRET WADES THROUGH LITTER IN THE POTOMAC RIVER OUTSIDE OF REAGAN NATIONAL AIRPORT ON THE BORDER OF VIRGINIA AND WASHINGTON, D.C.

Image credit: Damien Ossi, DC Department of Energy and Environment

PROTECTING VIRGINIA'S WATERS FROM RISKY AND UNNECESSARY PIPELINE CONSTRUCTION

Jessica Sims // Sierra Club Virginia Chapter | Greg Buppert // Southern Environmental Law Center
Jonathon Gendzier // Southern Environmental Law Center

INTRODUCTION

Interstate natural gas pipelines are poised to have severe impacts on Virginia's natural landscape. Two pipelines that would bisect the Commonwealth—the Atlantic Coast Pipeline and the Mountain Valley Pipeline—pose risks to hundreds of crucial streams and rivers, rugged mountain slopes, productive family farmland, historic resources, sensitive karst geology and drinking water supplies. These controversial projects would also disrupt and endanger the people living and working in the path of these pipelines and more than double greenhouse gas emissions in the Commonwealth.

Local governments, community leaders, and citizens have raised broad and serious concerns about the public and private lands at risk, including national parks and forests, historic resources, streams, rivers, wetlands and conserved lands. Landowners, whose property is being forcibly taken by condemnation, raise important questions about fairness, safety and property values. Communities along the proposed routes raise serious concerns about the potential for explosions and spills, contamination of public and private water supplies, and impacts to tourism, agriculture and outdoor recreation-based economies.

BACKGROUND

The 600-mile Atlantic Coast Pipeline (ACP) is a $7.2 billion joint venture between Dominion Energy, Duke Energy, Piedmont Natural Gas and AGL Resources. Dominion customers in Virginia are expected to pay approximately $2 to $3 billion for the pipeline.

The 300-mile Mountain Valley Pipeline (MVP) is a $4.5 billion joint venture of EQT and NextEra US Gas Assets, LLC. Ratepayers and shareholders will cover the cost of development.

These pipelines will have long-lasting impact on the environment, water systems and communities. Some of the impacts include:

- At least 95 million tons per year of Greenhouse Gas emissions would be produced during the natural gas life cycle;
- The pipelines require a 75-foot permanently cleared easement. This will result in significant forest and habitat losses, impacts to endangered species, and long-term slope and soil instability;
- Access roads, construction staging areas and compressor stations will impact communities and the environment. For example, on the ACP, the lone compressor station in Virginia is slated for Union Hill in Buckingham County, in a historic African American community, raising questions of environmental injustice; and,
- Combined, these two pipelines will cross Virginia streams more than 1,000 times, including streams deemed "exceptional" by Virginia's Department of Environmental Quality.

Construction of the Mountain Valley Pipeline has already contaminated numerous streams and springs

with sediment since April 2018. Attorney General Mark Herring filed a lawsuit against MVP for over 300 erosion control violations last year. Citizens monitoring construction of the MVP have reported more than 550 incidents of erosion control violations to the Mountain Valley Watch.

Pipeline developers' justification for the Atlantic Coast and Mountain Valley Pipelines have consistently eroded since plans for the projects were announced in 2014. At the time, the major rationale for the pipelines was to supply fuel to planned gas-fired power plants in the southeast and Mid-Atlantic. However, demand forecasts are well below pipeline developers' forecasts, casting doubt on any public benefit from these pipelines.

> ON THE ACP, THE LONE COMPRESSOR STATION IN VIRGINIA IS SLATED FOR UNION HILL IN BUCKINGHAM COUNTY, IN A HISTORIC AFRICAN AMERICAN COMMUNITY, RAISING QUESTIONS OF ENVIRONMENTAL INJUSTICE.

Dominion Energy's refiled 2019 Integrated Resource Plan shows intent to scale back on fossil fuel reliance, proposing no new major gas plants and it was reported that Dominion was "done building combined-cycle natural gas-fired power plants." Existing Dominion gas plants are fully served by existing pipelines.

In addition to egregious violations and mounting evidence of a lack of need for new pipelines, federal courts have found serious inadequacies in pipeline permits. In May 2018, the United States Court of Appeals for the Fourth Circuit revoked the U.S. Fish and Wildlife Service's permit for the ACP after finding the permit did not meet the standards of the Endangered Species Act. In late 2018, the Fourth Circuit invalidated the U.S. Forest Service's permit for the ACP to cross two national forests and the Appalachian Trail. Additional ongoing lawsuits are challenging permits at the federal and state levels.

CONCLUSION

The Virginia General Assembly should work to protect landowners, ratepayers and the environment from risky and unnecessary natural gas pipeline development. It is critical for state agencies to conduct thorough, transparent and independent analyses that investigate the need for the pipelines and impacts on Virginia's water resources, natural landscape and communities.

POLICY RECOMMENDATIONS

Introduce legislation to modify VA Code § 62.1-44.15:21 to include stream crossing reviews for drainage areas less than 5 square miles, and other necessary changes.

Reform outdated Virginia administrative review process for large natural gas infrastructure projects. Virginia's review process does not give the State Corporation Commission authority to evaluate the actual need for gas pipelines.

Restrict the Department of Environmental Quality's practice of granting variances from regulatory requirements for pipeline projects.

Repeal or amend § 56-49.01. Natural gas companies; right of entry upon property.

Fully fund the Department of Environmental Quality (DEQ). The agency does not have adequate funding to effectively administer programs.

MOUNTAIN VALLEY PIPELINE CONSTRUCTION IN MONROE COUNTY, WEST VIRGINIA.
Image credit: Jason Shelton

UNDERSTANDING THE ALBERMARLE WATERSHED AND PLANNING FOR THE FUTURE

Karen Forget // Lynnhaven River NOW | Scott Van Der Hyde // Roanoke River Basin Association

INTRODUCTION

Virginia lies between the two largest estuaries in the United States: the Chesapeake Bay to the north and the Albemarle and Pamlico Sounds to the south. We have an obligation to protect and restore both of these estuaries. With 25% of Virginia's land area located within the Albemarle-Pamlico watershed and the increasing challenges to the health of this system, there is a critical need for baseline data which would ground effective planning in the Albemarle-Pamlico Watershed. Additionally, more data would allow for communication among the cities and counties in Virginia that make up this watershed as well as provide a mechanism for communication and planning with our partners in North Carolina.

BACKGROUND

The Virginia portion of the Albemarle-Pamlico watershed is made up of three river basins and three coastal systems: the Roanoke, Chowan, and Pasquotank; and, Back Bay, North Landing and Northwest Rivers, which form Currituck Sound. This watershed includes thirty-eight Virginia counties and cities and roughly 25% of the state's land (10,500 square miles). The waters in this watershed affect Virginians in many more ways than they likely realize. The area is rich in farmland and recreational opportunities as well as being the source of drinking water for approximately 2 million Virginians.

The Albemarle-Pamlico watershed contains many different ecosystems and their diverse and unique sets of flora and fauna. The watershed spans from the Atlantic Ocean well into the mountains, with habitats ranging from open estuary and coastal marsh to densely forested upland in the Piedmont. Some of these plant and animal species are not found anywhere else in Virginia and several are classified as threatened or species of concern.

Increasingly, the health of this watershed and the rivers and estuaries that it supports is being threatened. The Albemarle-Pamlico faces challenges from climate change and sea level rise; increased precipitation and larger and longer lasting storms; toxins and bio-waste stored in flood plains; potential uranium mining; increasing demands for ground water from a shrinking aquifer; and, the need for improved farming practices.

Sea level rise and flooding alone are a major source of concern for many residents in the eastern parts of this watershed. The northernmost opening in the Albemarle-Pamlico estuary to the Atlantic Ocean is Oregon Inlet, which is only three miles wide. This fact alone creates a very different hydrological system than the Chesapeake Bay with an eighteen-mile wide opening to the Atlantic Ocean. Water is wind-driven rather than lunar tide driven and flood waters can take many days or even weeks to recede. This combined with increased precipitation and bigger storms have both environmental and economic implications for this area of the watershed.

The western region of the watershed, made up of the Roanoke River Basin, echoes the concerns of the eastern part in regards to adaptation and climate change. Abundant clean water is a vital resource for this region providing safe drinking water and a key piece of the successful agricultural economy. In addition, the area's rivers and rural character provide an opportunity to develop another piece of the regional economy centered on outdoor recreation and tourism. Moving forward, balancing the use of the region's land and water resources with the need to protect its clean water, open spaces, and natural habitat will be vital to future economic success and improved quality of life in the region. This will require further investments from the Commonwealth of funding, time, and expertise to expand agriculture best management practices, provide local government assistance, and promote land conservation.

> BALANCING THE USE OF THE REGION'S LAND AND WATER RESOURCES WITH THE NEED TO PROTECT ITS CLEAN WATER, OPEN SPACES, AND NATURAL HABITAT WILL BE VITAL TO FUTURE ECONOMIC SUCCESS AND IMPROVED QUALITY OF LIFE IN THE REGION.

Currently, there is a dearth of baseline data on the Albemarle-Pamlico Watershed areas of Virginia. We need better and more complete information in order to plan effectively for the future. Among other data, we need:

- Land-use and demographic data;
- Toxin and bio-waste storage information;
- Rainfall data and future projections;

- Information on previous major storms including the paths they followed and impact on affected communities;
- Groundwater supply, quality and sustainability;
- Distribution and population data on key species of both flora and fauna, including endangered, threatened, and species of concern;
- Scientifically-grounded data on the role that conserved forests are playing in water management;
- Threats to drinking water supplies;
- Baseline data on stormwater and wastewater issues and treatment in rural areas and access to state programs designed to assist with stormwater and wastewater retrofits;
- Map/data of completed agriculture BMP projects; and,
- Map/data of conserved lands and existing riparian buffers vs. needs.

This information will become the basis for a much-needed strategic plan for Virginia's Albemarle-Pamlico watershed.

CONCLUSION

A significant part of Virginia lies in the Albemarle-Pamlico watershed and we have a responsibility to restore and protect the natural resources as well as the quality of life of the residents in this watershed. We also have an obligation to work together with our partners in North Carolina to plan effectively for the future of this beautiful and bountiful estuary.

POLICY RECOMMENDATIONS

Fund a study of the Albemarle-Pamlico Watershed. The study needs to be comprehensive and include at a minimum the items in the list above. This will form the basis for good planning to protect the citizens and the natural resources on which we depend in the Albemarle-Pamlico watershed of Virginia.

Initiate a roundtable planning process for the Albemarle-Pamlico Watershed in Virginia.

BOARDWALK TO THE PAMLICO SOUND, THE LARGEST EAST COAST SALTWATER LAGOON AND ESTUARY BORDERED BY MARSHLAND AND SEA GRASSES IN AUTUMN
Image credit: Shutterstock

ENDNOTES

REDUCING LITTER POLLUTION IN VIRGINIA'S WATERWAYS

[1] https://www.cbf.org/news-media/features-publications/reports/economic-benefits-of-cleaning-up-the- chesapeake-bay/
[2] https://www.epa.gov/trash-free-waters/toxicological-threats-plastic
[3] https://www.npr.org/sections/thesalt/2017/09/19/551261222/guess-whats-showing-up-in-our-shellfish- one-word-plastics
[4] https://www.kab.org/sites/default/files/LitterinAmerica_FactSheet_CostsofLittering_0.pdf
[5] Estimate from Northern Virginia VDOT communications manager
[6] https://www.chicagotribune.com/news/opinion/commentary/ct-plastic-bag-ban-recycling-0731-biz- 20150730-story.html
[7] https://www.fairfaxcounty.gov/planning-zoning/sites/planning- zoning/files/assets/documents/eqac/annual%20reports/2018/annual%20report/4%20%20waste%20mana gement.pdf
[8] http://www.longwood.edu/cleanva/images/VA-Marine-Debris-Reduction-Plan-Summary-and-Look- Ahead%20sm.pdf
[9] https://doee.dc.gov/bags
[10] http://www.longwood.edu/cleanva/images/VA-Marine-Debris-Reduction-Plan-Summary-and-Look-Ahead%20sm.pdf
[11] https://doee.dc.gov/bags

PROTECTING VIRGINIA FROM RISKY AND UNNECESSARY PIPELINES

[1] See EIA Retail Electricity Sales report at:
https://www.eia.gov/electricity/data/browser/#/topic/5?agg=0,1&geo=g&endsec=vg&linechart=ELEC.SALE S.US-ALL.A~~~~~~~~~~~~~~~~&columnchart=ELEC.SALES.US-ALL.A~ELEC.SALES.US- RES.A~ELEC.SALES.US-COM.A~ELEC.SALES.US-IND.A&map=ELEC.SALES.US-ALL.A&freq=A&start=2001&end=2017&ctype=linechart&ltype=pin&rtype=s
[2] Commonwealth of Virginia, House Document 14, October 2016, Report to the Governor and the General Assembly of Virginia, Joint Legislative Audit and Review Commission, State Spending: 2016 Update.
[3] Commonwealth of Virginia, October 10, 2017, Report to the Governor and the General Assembly of Virginia, State Spending: 2017 Update, Table 10: The 14 agencies with declines in general fund appropriations of 10% or more, FY08–FY17.

2

PROTECTING COMMUNITIES FROM TOXICS

EXECUTIVE SUMMARIES AND CONTACT INFORMATION

VCN POINT OF CONTACT

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PROTECTING VIRGINIANS FROM HAZARDOUS CHEMICAL SPILLS

Both the West Virginia law on chemical storage tanks and Virginia's existing law on oil storage tanks should serve as models for new legislation in the Commonwealth better protecting residents from potential chemical spills. The General Assembly should enact new legislation specifying siting, construction, and spill response measures for chemical storage tanks. It should also require DEQ to establish an inventory of all above-ground chemical storage tanks in the Commonwealth.

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ELIMINATING TOXICS TO IMPROVE HUMAN HEALTH

State leaders must take action on developing a safer Commonwealth free of toxic contamination. We cannot afford to be the next Flint, MI by allowing unjust environmental health hazards to impact communities for decades.

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PROTECTING VIRGINIANS FROM HAZARDOUS CHEMICAL SPILLS

Noah Sachs // Center for Progressive Reform | David Flores // Center for Progressive Reform
Jamie Brunkow // James River Association

INTRODUCTION

Throughout the Commonwealth, thousands of manufacturers and other businesses store potentially hazardous chemicals in above-ground storage tanks. The quantity, location, contents, age, and condition of chemical storage tanks are unknown because tank owners are not required to register their tanks with Virginia's Department of Environmental Quality (DEQ). Virginia does not have comprehensive safety regulations for these chemical storage tanks, even though strong regulations for certain petroleum storage tanks have been in effect since 1998. This difference in how we regulate tanks containing petroleum and tanks containing hazardous chemicals makes no sense. Spills from both types of tanks pose a substantial risk of harm to public health and natural resources, including sources of drinking water.

BACKGROUND

There are tens of thousands of above-ground chemical storage tanks in Virginia, and many of them are located within a few feet of water sources because of the concentration of industry along our rivers and inlets. The 2019 Toxic Floodwaters report, released by the Center for Progressive Reform, identified over 1,000 industrial facilities in the James River basin that are exposed to flooding risks from rivers, storm surge, or future sea level rise.[1] The analysis focused exclusively on facilities located in communities that are among the most socially-vulnerable to disaster nationwide. The analysis found that all of the 263 registered underground petroleum storage tanks face risks of flooding. By contrast, the report found major data gaps for unregulated above-ground chemical storage tanks that hindered a full picture of what was being stored at each of these facilities and the risk to the public if there were a spill. Unlike other states, Virginia has no comprehensive inventory of these tanks, and it does not regulate the construction or siting.

In 2015, the General Assembly was sufficiently concerned about these risks from chemical storage tanks that it passed SB 811, a law requiring DEQ to study the risks and the need for regulation. SB 811 passed the Senate 38-0 and the House 97-0. The DEQ study, released in the fall of 2016, found that:

- There is a general lack of siting requirements for chemical storage tanks in proximity to drinking water source areas;
- A first step in a program would be developing a framework for inventorying and registering a defined universe of chemical storage facilities in Virginia; and,
- A new program should consider information disclosure requirements, such as requiring facilities to provide information to public water systems about emergency response plans and chemical inventories for chemical storage tanks within the same watershed as the water system.

It is now time to implement the DEQ recommendations, moving beyond studying the problem to taking action. The threat to communities is not just from flooding of chemical storage tanks due to rain events or hurricanes. Tanks can corrode or fail for a variety of reasons. In 2017, for example, a small puncture in a container at an agricultural supplier in Botetourt County led to a chemical spill that caused fish kills and water advisories throughout a portion of the Roanoke region. In 2014, a chemical spill in Charleston, WV contaminated the water supply for that city and surrounding counties, leaving more than 300,000 residents in the region without access to municipal drinking water. The tanks had corroded and were located above the water supply intake. That spill caused devastating economic impacts, including closures of hotels and businesses in Charleston for over a week.

> THE THREAT TO COMMUNITIES IS NOT JUST FROM FLOODING OF CHEMICAL STORAGE TANKS DUE TO RAIN EVENTS OR HURRICANES. TANKS CAN CORRODE OR FAIL FOR A VARIETY OF REASONS.

Just months after that Charleston spill, West Virginia enacted a comprehensive chemical tank regulation law, including siting standards, construction standards, and special provisions for tanks near water supplies. Since then, West Virginia has compiled an inventory of over 42,000 above-ground chemical storage tanks, of which more than a quarter are over 30 years old and, in some cases, older than 75 years. Virginia's economy is about six times larger than West Virginia's, so the number of above-ground chemical storage tanks in the Commonwealth is likely to be much higher.

CONCLUSION

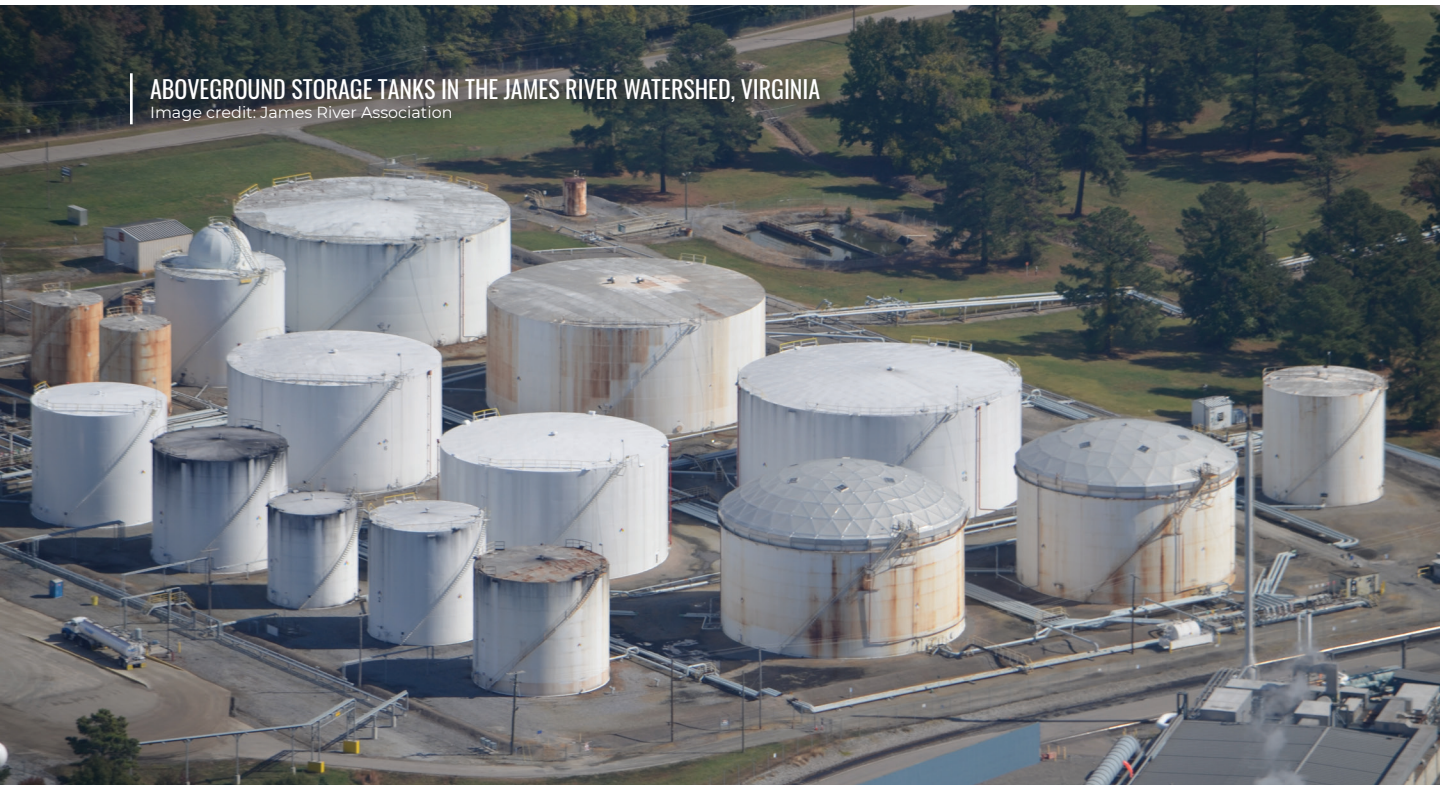
Both the West Virginia law on chemical storage tanks and Virginia's existing law on oil storage tanks should serve as models for new legislation in the Commonwealth aimed at better protecting residents from potential chemical spills. The General Assembly should enact new legislation specifying siting, construction, and spill response measures for chemical storage tanks. It should also require DEQ to establish an inventory of all above-ground chemical storage tanks in the Commonwealth.

POLICY RECOMMENDATIONS

Establish a program for registration and regulation of above-ground chemical storage tanks. The program should be modeled on the Commonwealth's existing regulatory program for petroleum storage tanks and include requirements for:

- Registration and reporting;
- Specifications for siting and construction of new tanks; and
- Planning and implementation of measures to prevent and mitigate chemical spills.

Ensure that the program is responsive to findings about the present-day and future flood risk of chemical storage facilities. This could include incorporating spill prevention planning requirements that are responsive to the flood risks specific to each permittee and implementing phased requirements for siting and design practices that reduce the risk of flood-induced spills.



ABOVEGROUND STORAGE TANKS IN THE JAMES RIVER WATERSHED, VIRGINIA
Image credit: James River Association

ELIMINATING TOXICS TO IMPROVE HUMAN HEALTH

Michael Bochynski // Clean Water Fund | Danielle Simms // Virginia League of Conservation Voters

INTRODUCTION

More than 80,000 chemicals are currently used in the United States, and most haven't been adequately tested for their effects on human health. Toxic chemicals find their way into human bodies in a variety of ways - through the air we breathe, through direct contact with our skin, and through the food we eat and the water we drink. Safeguarding drinking water has been one of the largest public environmental concerns since Rachel Carson's *Silent Spring* and the current Flint water crisis where over 100,000 residents were exposed to elevated lead levels.

There is currently a particular concern regarding the human health threats from toxic exposure to lead, a broad category of chemicals called PFAS found in everyday consumer items, and a plastics hardening compound called bisphenols.

BACKGROUND

LEAD

When inside the body, lead and calcium compete to be absorbed by sticking to red blood cells, then moving to soft tissue, then bones. Children display the strongest neurological effects to lead exposure, and it can change how the brain functions, how memory is stored, and can result in lower IQs, behavioral concerns, and learning disabilities. Lead exposure can lower a child's IQ, affect brain and nervous system development, slow growth, and cause hearing and speech problems. There currently is no treatment for low levels of lead in the blood.

While lead is a naturally-occurring element found in trace amounts nearly everywhere, the soil near heavily used streets and roads may contain lead as a result of past use of lead in gasoline. Lead can also be present in the soil adjacent to houses with lead-based paint and may contribute to the high levels of lead in household dust.

- **Paint.** Lead is found on the inside and outside of our homes. Some of the most common sources are from house paint, which commonly included lead up to 1977, when it was banned for indoor use paints; paints for outdoor use may still include lead. Lead paint may still remain inside older homes and may be particularly hazardous if in poor condition (chipped or peeling) or if disturbed by sanding or abrasion (creating lead dust).

> TOXIC CHEMICALS FIND THEIR WAY INTO HUMAN BODIES IN A VARIETY OF WAYS - THROUGH THE AIR WE BREATHE, THROUGH DIRECT CONTACT WITH OUR SKIN, AND THROUGH THE FOOD WE EAT AND THE WATER WE DRINK.

- **Drinking water.** Some water pipes in older homes were made of lead. Lead can get into tap water through home service piping, lead solder used in plumbing, and some brass fixtures. Even though the use of lead solder was banned in the U.S. in 1986, it might still be present in older homes. The corrosion of these lead-based materials can add lead to tap water, particularly if water sits for an extended time in pipes. Even drinking water in new homes can get lead from older water supply lines.

- **Lead from the workplace.** If parents work in industries that use or handle lead (such as car battery plants, radiator shops, or construction trades), work clothing may be contaminated with lead.

Since the Flint water crisis began, several states have worked to create more awareness around preventing lead poisoning. Many states, the Environmental Protection Agency (EPA), and the Center for Disease Control (CDC) are working to lower the actionable threshold for lead in drinking water. Toxicologists agree that there is no safe level of lead, and many think that the threshold should be lowered to 10 parts per billion.

PERFLUOROALKYL AND POLYFLUOROALKYL SUBSTANCES (PFAS)

PFAS are synthetic chemicals found in many products, such as clothing, carpets, fabrics for furniture, adhesives, paper packaging for food, and heat-resistant/non-stick cookware. PFAS are linked to kidney and testicular cancers, hormone disruption, thyroid disease, reproductive disorders, infertility, low birth weights and even resistance to vaccines. They are found in fish, wildlife and humans; and because they don't break down, PFAS accumulate in our bodies and the environment. This can be due to food that has been stored or cooked in materials containing PFAS, eating contaminated fish and shellfish, or by drinking contaminated water.

PFAS are also present in fire-fighting foams used by both civilian and military firefighters. People who live near PFAS production facilities or places where PFAS-containing firefighting foams were used are at higher risk of exposure from groundwater contamination. High levels of the contaminants from fire-fighting foam were discovered in 2017 in well water near a Naval landing field in Chesapeake, VA. A 2019 act to amend the code of Virginia relating to firefighting foam management didn't absolutely require the phase-out of PFAS-containing firefighting foam and made it seem as though firefighters and how they are using the foam are the problem – not the inherent toxicity of the PFAS chemicals within the foam.

Washington and Colorado have passed full bans on PFAS in firefighting foam with a few exceptions. Lawmakers need to work toward a health-based limit on PFAS chemicals in products and drinking water and promote policies that help communities clean up contamination and hold polluters accountable.

BISPHENOL A (BPA)

Over the past decade, there have been concerns regarding the health effects of bisphenol A (a hardening chemical compound) found in many plastic products. Studies have shown that BPA exposure is linked to accelerated puberty and an increased risk of diabetes, cancer, and heart disease.

The FDA has stated concern in regard to the effects BPA has on children's health and has acted to ban BPA in bottles and cups for children. Some states have established laws banning bottles and cups with BPA if designed for toddler and infant use or banning manufacture and sale of food containers that contain BPA.

BPA is often replaced with similarly dangerous chemicals which are often structurally related to BPA and have endocrine disrupting effects. BPA alternatives are not necessarily less estrogenic. In fact, three bisphenols (BPAF, BPB, and BPZ) are more estrogenic than BPA. Bisphenol F (BPF), Bisphenol S (BPS), and Bisphenol AF (BPAF) are among the main substitutes of BPA in polycarbonate plastics and epoxy resins. Numerous studies have suggested that BPS and BPF have potencies similar to that of BPA.

CONCLUSION

State leaders must take action on developing a safer Commonwealth free of toxic contamination. We cannot afford to be the next Flint, MI by allowing unjust environmental health hazards to impact communities for decades.

POLICY RECOMMENDATIONS

Ban outdoor lead paint.

Require inventory of Lead service lines available to the public and require a timeline for replacement of these lines.

Require lead pipe disclosures for homebuyers and renters.

Reduce the action level for lead contamination from 15 ppb to 10 ppb.

Require more frequent testing for lead contamination levels in drinking water.

Set Maximum Contaminant Levels for PFOA and PFOS in drinking water to 4 ppt (parts per thousand).

Restrict PFAS chemicals in firefighting foam and in food packaging and food service ware.

Prohibit the manufacture, sale or distribution of bottles, cups or containers made from bisphenols if they are designed to be filled with food or liquids.

OLD HOT WATER PIPES IN A STACK NEAR WALL COVERED WITH FOAM HEAT INSULATION

Image credit: Shutterstock

ENDNOTES

PROTECTING VIRGINIANS FROM HAZARDOUS CHEMICAL SPILLS

[1] Sach, N. and Flores, D. 2019. Toxic Floodwaters: The Threat of Climate-Driven Chemical Disaster in Virginia's James River Watershed. Center for Progressive Reform.

3 BUILDING SUSTAINABLE COMMUNITIES

EXECUTIVE SUMMARIES AND CONTACT INFORMATION

VCN POINT OF CONTACT

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TRANSFORMING TRANSPORTATION

We need to adopt policies and make investments to develop a cleaner, balanced, and more equitable multi-modal transportation system that does more to protect our communities and our natural, historic, and scenic resources while focusing on accessibility to daily needs that are central to our economy and quality of life.

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FUNDING TRANSIT FOR A COMPETITIVE, SUSTAINABLE FUTURE

The next generation workforce and companies are looking for communities with excellent transit. Transit is essential for improving access to jobs, health care, and services for all Virginians, and provides important benefits in reducing vehicle trips and the emissions of greenhouse gases and other air pollutants from transportation. In short, Virginia's economic competitiveness, roads, and environment depend on action in 2020 and beyond to significantly increase the state's investment in transit.

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CURBING VEHICLE POLLUTION

Transportation is Virginia's largest source of carbon dioxide pollution and a key source of other harmful pollutants. We can no longer ignore these impacts. Virginia needs to accelerate the transition to cleaner transportation by adopting policies and making investments to provide more alternatives to driving and to promote electric vehicles.

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DEFENDING SMART SCALE

SMART SCALE is serving the Commonwealth's best interests by ensuring that transportation funding decisions are supported by objective project evaluation and that limited transportation dollars are wisely spent. Efforts to weaken the criteria or circumvent scoring altogether must be rejected, and transparency in the funding process must be maintained.

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ADOPTING SMART GROWTH TO SAVE MONEY, PROTECT THE ENVIRONMENT, AND ENHANCE ECONOMIC COMPETITIVENESS

Many fiscal conservatives and conservationists agree that the way we have grown in recent decades is costly for taxpayers and results in more traffic and air and water pollution, loss of farms and habitat, and a lower quality of life. Reversing this trend and steering our communities back toward smart growth—efficient, compact, walkable communities with good public transit—is essential to meet the evolving needs of Virginia residents and businesses, and protect our communities and environment.

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ADDRESSING SEA LEVEL RISE AND A CHANGING CLIMATE

Virginia has acknowledged the impact of sea level rise and climate change on coastal communities. Numerous studies have made recommendations on actions for Virginia to address sea level rise and mitigate the impacts of a changing climate. The state needs a targeted and coordinated response for state programs and explicit guidance for action by Virginia's localities.

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TRANSFORMING TRANSPORTATION

Trip Pollard // Southern Environmental Law Center

INTRODUCTION

Virginia faces major transportation challenges. Transportation is central to our economy and quality of life—yet many roads and bridges need repair, congestion costs are high in many areas, transportation is the leading source of carbon pollution in the Commonwealth, many low income citizens lack adequate access to jobs and services, and there are too few alternatives to driving despite increasing demand from businesses for more transportation choices. Despite some significant recent progress, Virginia continues to focus heavily on highway construction and expansion—an approach that is costly to taxpayers, communities, and the environment while doing little to relieve congestion in the long run. We need a cleaner, balanced, more equitable transportation system.

BACKGROUND

A number of significant transportation reforms have been adopted in recent years, including development of the SMART SCALE prioritization process that provides a much more objective and transparent basis for selecting projects for funding (see *Defending SMART SCALE*, p. 38). In addition, funding for alternatives to driving has increased—such as the first-ever dedicated state capital funding for Metro (matched by Washington, D.C. and Maryland), additional passenger and commuter rail service, and funding for Richmond's first bus rapid transit line which opened in June 2018.

However, the Commonwealth still spends only a small percentage of its total transportation budget on alternatives to driving, and too many wasteful and damaging highway proposals are still moving forward with state and regional funding. Virginia's transportation spending remains asphalt-centered, with roughly 80% of the current $22.9 billion Six-Year Improvement Program dedicated to road projects. And the amount of driving in Virginia averages over 233 million miles every day.

Our current transportation system takes a heavy environmental toll, harming our air, water, and communities. Transportation is the leading source of carbon pollution in Virginia, generating 45% of emissions. And new roads often destroy natural resources such as forests and wetlands that absorb carbon and increase resiliency to sea level rise and flooding. Our heavy investment in asphalt continues despite the fact that new and wider highways often fail to provide long-term congestion relief since they cause development to spread out and generate significant new traffic. Moreover, as Amazon's decision to locate its second headquarters adjacent to two Metro stations in Northern Virginia made clear, the competitive benefits of investments in alternatives to driving are increasing (see *Funding Transit for a Competitive, Sustainable Future*, p. 34).

> VIRGINIA'S TRANSPORTATION SPENDING REMAINS ASPHALT-CENTERED, WITH ROUGHLY 80% OF THE CURRENT $22.9 BILLION SIX-YEAR IMPROVEMENT PROGRAM DEDICATED TO ROAD PROJECTS. AND THE AMOUNT OF DRIVING IN VIRGINIA AVERAGES OVER 233 MILLION MILES EVERY DAY.

The Commonwealth should shift significantly more of our total transportation budget to rail, transit, and bicycle and pedestrian facilities. In addition, steps should be taken to accelerate the transition to electric vehicles in the private sector, for public transportation, and for government vehicles (see *Curbing Vehicle Pollution*, p. 36). More funding should also be directed to address the multi-billion dollar backlog of maintenance needs on our roads and bridges, and increase maintenance payments to cities, to protect taxpayer investments in existing infrastructure and to make our infrastructure more resilient to the effects of climate change.

CONCLUSION

We need to adopt policies and make investments to develop a cleaner, balanced, and more equitable multi-modal transportation system that does more to protect our communities and our natural, historic, and scenic resources while focusing on accessibility to daily needs that are central to our economy and quality of life.

DEDICATED BIKE LANE.
Image credit: Shutterstock

POLICY RECOMMENDATIONS

Fund alternatives to driving.

- Increase funding for transit, rail, bicycle, and pedestrian projects, and ensure that a substantial percentage of any new state or regional transportation funding be devoted to such projects;
- Protect dedicated funding for passenger rail and secure additional federal, state, and local resources. In addition, the state should study the establishment of a Virginia Rail Authority to help ensure continuity of policies and investments and provide a mechanism for ownership of assets funded by taxpayers; and,
- Support freight rail as a preferred means of adding capacity in congested corridors with high truck density, such as I-81 and I-95, and ensure that opportunities to move cargo by rail are seriously considered during the review and study process for any highway expansion. Further, Virginia's Rail Enhancement Fund should be reviewed—and amended if needed—to advance more projects that will shift freight from roads to rail.

Fix-it-first. Allocate a greater share of highway funding to road and bridge maintenance and increase funding for transit operations and maintenance.

Improve performance standards and funding priorities:

- Require state plans to meet standards to reduce per capita vehicle miles traveled and increased mode share for transit, rail, walking, bicycling, and telecommuting;
- Oppose giving even greater weight to congestion mitigation and economic development as priorities for state or regional funding, as well as any effort to weaken or eliminate environmental quality and land use in project scoring; and,
- Oppose exempting any project from SMART SCALE.

Support transportation process reform, including steps to reduce the damage projects cause to natural, cultural, and historic resources, enhance public involvement in planning, and improve the Public Private Transportation Act.

Better link transportation, land use, and climate planning, including: target transportation spending to existing communities and congested areas; improve analysis of land use impacts of sprawl-inducing projects; provide greater authority to localities to promote mixed use, transit-oriented, walkable communities; increase efforts to ensure transportation systems and communities are resilient to climate change and to protect natural features contributing to resiliency to sea level rise and flooding.

FUNDING TRANSIT FOR A COMPETITIVE, SUSTAINABLE FUTURE

Stewart Schwartz // Coalition for Smarter Growth | Trip Pollard // Southern Environmental Law Center

INTRODUCTION

Robust transit systems increase economic competitiveness, meet the need for diverse travel options, alleviate congestion on roads, and reduce carbon pollution and other air pollutants. Unfortunately, Virginia currently spends far too small of a share of its transportation funds on transit. The Commonwealth should increase spending for expanded rail and bus transit, and through these investments support transit-oriented development in our cities, towns, and urbanizing parts of our suburbs.

BACKGROUND

A review of Virginia's draft Six-Year Financial Plan indicates that transit and intercity rail only receive about 15% of the Commonwealth's total transportation budget. Yet today, the vast majority of Virginians live in areas where transit can be a particularly efficient and convenient travel option. For instance, 65% of the population lives in the urban crescent encompassing Northern Virginia, Fredericksburg, Richmond, and Hampton Roads. Another 8-10% of the population also reside in our other significant cities, towns, and closest suburbs.

Access to good public transit has become critical for attracting new business. Following a nationwide search, Amazon selected a site in Northern Virginia adjacent to two Metro stations for its second headquarters. Nearly all of the new office development in Fairfax County is adjacent to the Metro. In Richmond and Henrico, the new Pulse Bus Rapid Transit line is contributing to a boom in development including the $74 million Stone Brewing East Coast brewery, thousands of apartments, and new corporate offices. The Tide light rail in Norfolk is generating over $1 billion in economic investment. Outside of the urban crescent, transit systems in Williamsburg, Blacksburg, and other places are also providing significant economic benefits, providing access for residents, visitors, and tourists to jobs, entertainment, and services. Furthermore, transit systems are vitally important to low-income Virginians who otherwise might not have access to, or the financial resources for, their own cars. In many cases, their ability to work, shop, and provide for their families depends upon reliable transit options.

In addition, the transportation sector is now the number one source of greenhouse gas emissions both in Virginia and nationwide and continues to be a major source of other air pollutants that threatens our health and environment (see *Transforming Transportation*, p. 32). Combining transit with walkable, bikeable, transit-oriented communities reduces the number of auto trips and miles driven, reducing emissions while also expanding Virginians' travel choices and improving traffic conditions.

> TRANSIT SYSTEMS ARE VITALLY IMPORTANT TO LOW-INCOME VIRGINIANS WHO OTHERWISE MIGHT NOT HAVE ACCESS TO, OR THE FINANCIAL RESOURCES FOR, THEIR OWN CARS. IN MANY CASES, THEIR ABILITY TO WORK, SHOP, AND PROVIDE FOR THEIR FAMILIES DEPENDS UPON RELIABLE TRANSIT OPTIONS.

Despite transit's critical importance, Virginia's transit systems have lost one of their major sources of funding—bonds that have paid for over $100 million per year in capital investment since 2008. While the 2018 General Assembly approved new dedicated funding to restore Metro, no new statewide investments have been approved for other transit capital and operating needs. The General Assembly also now requires transit providers to compete for funding not only for capital expansion projects (as in the case of SMART SCALE), but even day-to-day state of good repair and operations. Virginia must identify an adequate, sustainable funding source to enable transit providers to confidently plan for future operations and growth. Further, while the I-66 public-private toll projects have provided some funding for transit in Northern Virginia, much more needs to be directed to high-frequency service that supports and encourages transit-oriented development.

CONCLUSION

The next generation workforce and companies are looking for communities with excellent transit. Transit is essential for improving access to jobs, health care, and services for all Virginians, and provides important benefits in reducing vehicle trips and the emissions of greenhouse gases and other air pollutants from transportation. In short, Virginia's economic competitiveness, roads, and environment depend on action in 2020 and beyond to significantly increase the state's investment in transit.

POLICY RECOMMENDATIONS

Increase the share of transit and rail funding from 25% to 30% of the state transportation budget.

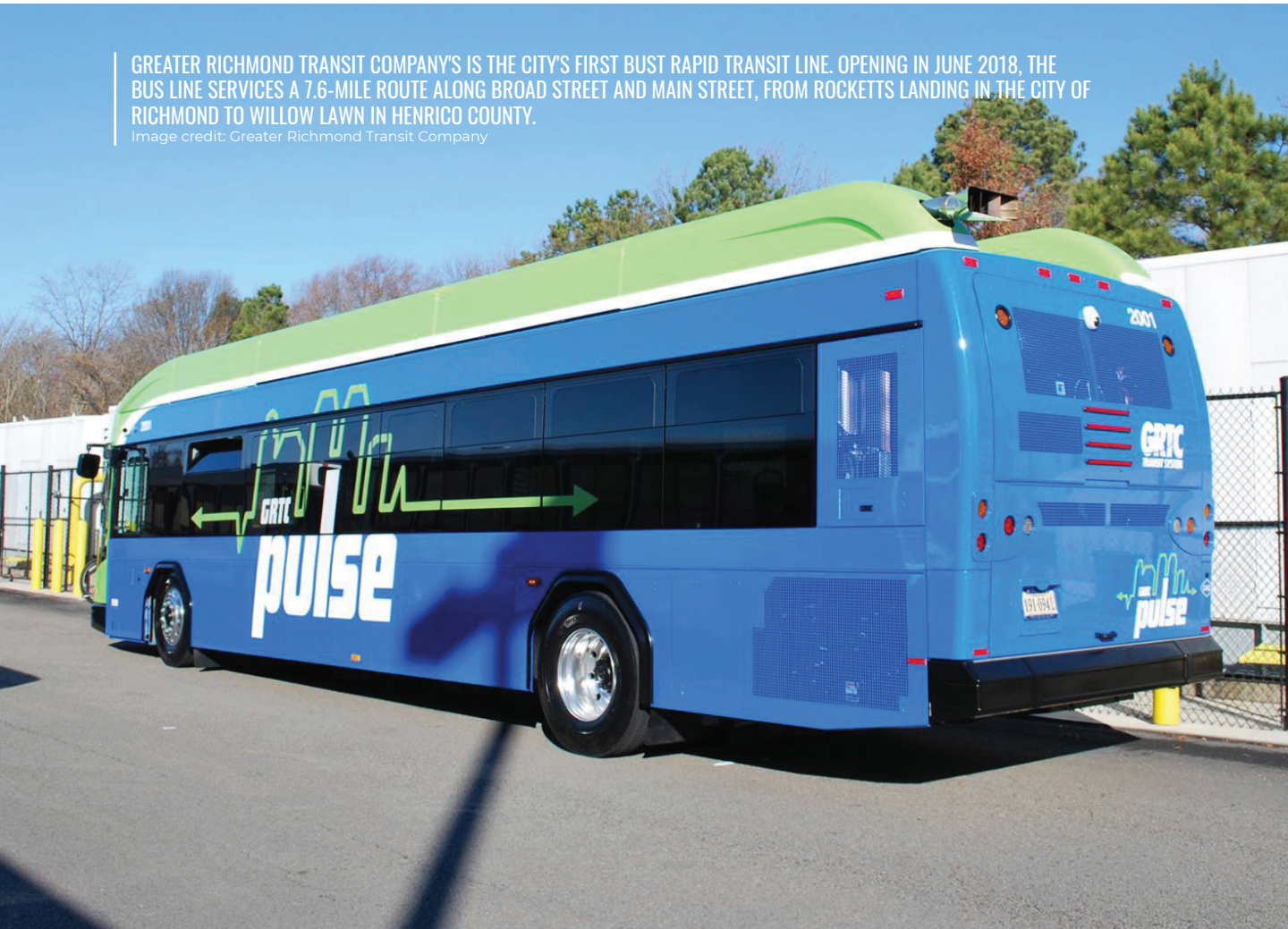
Allocate a substantial share of any new transportation funding, including an internet sales tax and new funding for interstate corridors approved by the General Assembly in 2020, to transit and rail.

Make transit and rail improvements tied to smarter land use a central component in all major corridor planning studies, including for I-81 and I-95.

Meet the market demand for transit-oriented communities by increasing funding for supportive transit, bicycle, and pedestrian projects.

Allow regional tax revenues in Hampton Roads to be used for transit, rail, and other multi-modal improvements, and not just roads.

Support a dedicated regional revenue source for transit in the Richmond region, which lags most mid-sized regions in the extent of its transit system.



GREATER RICHMOND TRANSIT COMPANY'S IS THE CITY'S FIRST BUST RAPID TRANSIT LINE. OPENING IN JUNE 2018, THE BUS LINE SERVICES A 7.6-MILE ROUTE ALONG BROAD STREET AND MAIN STREET, FROM ROCKETTS LANDING IN THE CITY OF RICHMOND TO WILLOW LAWN IN HENRICO COUNTY.
Image credit: Greater Richmond Transit Company

CURBING VEHICLE POLLUTION

Lena Lewis // The Nature Conservancy | Trip Pollard // Southern Environmental Law Center
Bill Penniman, Sierra Club, Virginia Chapter

INTRODUCTION

Air pollution from transportation threatens our health and our climate. Transportation is the largest source of Virginia's greenhouse gas emissions, emitting 45% of our carbon dioxide pollution[1]. Our vehicles also emit other pollutants that harm nearly every organ in our bodies and that represent particular dangers to children and elderly adults living near heavily trafficked roads. Fortunately, there are many opportunities to lower emissions from transportation while also strengthening our communities and improving public health. Virginia needs innovation and bold leadership to address these problems.

BACKGROUND

While Virginia has focused on cutting carbon dioxide from our power sector, we have done little to address transportation emissions. The internal combustion engine has tied vehicles to gasoline and diesel fuels since the beginning of the 20th century. The typical passenger car emits about 28 pounds of carbon dioxide per day, and three fourths of Virginian commuters drive to work alone[2]. Virginia needs a multi-prong program to reduce solo driving and fast-track adoption of zero-emission vehicles, including buses.

Solutions that lower total vehicle miles driven provide many benefits, of which lower greenhouse gas emissions is just one. Advancing smarter growth, enhancing intercity passenger rail, and improving public transit are just some of the strategies that can reduce driving while decreasing carbon and other air pollution.

In addition to reducing our dependency on cars, we must lower carbon pollution from vehicles. Virginia can and should increase fuel efficiency standards above the minimum federal levels for new vehicles, particularly if the federal administration proceeds with weakening fuel efficiency standards. Virginia can join 13 other states in implementing the Advanced Clean Car Program, which has stronger standards for criteria pollutants and greenhouse gases than proposed new federal standards. Virginia can also adopt the Zero Emissions Vehicle (ZEV) component of the Advanced Clean Cars Program, which requires manufacturers to sell an increasing number of electric and hybrid electric cars in participating states.

Electric vehicles (EVs) have the potential to dramatically lower carbon and other emissions from the transportation sector. In most parts of Virginia, carbon pollution from generating electricity used by EVs is equivalent to carbon from vehicles getting at least 50 miles per gallon (The typical passenger car gets 22 mpg.[3]). As the electricity sector shifts to using more lower-carbon and zero-carbon energy sources, the carbon emissions attributable to EVs will continue to decrease as well.

Because EVs have no tailpipe exhaust, they improve local air quality. Solutions that lower carbon pollution from cars will also lower asthma, heart attacks, strokes, early deaths, harm to pregnant mothers and babies, and other harms exacerbated by particulate matter and ground-level ozone.

> TODAY IN VIRGINIA, THE COST OF CHARGING AN EV IS LESS THAN HALF THE COST OF AN EQUIVALENT AMOUNT OF GASOLINE, AND ANNUAL MAINTENANCE IS MUCH LOWER, TOO. YET UP-FRONT COSTS AND SCARCITY OF CHARGING STATIONS IMPEDE LARGE-SCALE ADOPTION.

Policies supporting our transition to electric vehicles are essential. Today in Virginia, the cost of charging an EV is less than half the cost of an equivalent amount of gasoline, and annual maintenance is much lower, too[4]. Yet up-front costs and scarcity of charging stations impede large-scale adoption. In 2018, Virginia initiated a program to install a network of public charging stations that would put 95% of Virginians within 30 miles of a DC fast charger, but more is needed. Virginia should implement incentives for more public chargers and building code requirements to install chargers or at least 240 volt outlets in garages and parking areas for single and multifamily dwellings. Given public health and climate benefits, policymakers should also consider tax or other financial incentives to encourage EV purchases.

As a participant in the Transportation Climate Initiative (TCI), Virginia is currently working with other states to design and fund policies to reduce greenhouse gas emissions from transportation. By adopting the policies that come out of the TCI process, Virginia

would increase low-carbon transportation options. In addition, Virginia should support electrifying municipal and state fleets, including buses. Substituting electricity for diesel in school and public buses will cut pollution affecting children and people living in urban and other high-traffic areas.

As electric vehicles become more common in Virginia, they will change the demands placed on the electric grid. Thoughtful planning that includes diverse stakeholders can ensure that EVs enhance grid reliability and keep electricity costs low. Electricity rates can be structured to encourage EV charging during times of low electricity demand, avoiding the need for new power plants. EV batteries also have the potential to put electricity back on the grid during peak demand periods, improving system reliability at lower costs.

CONCLUSION

Transportation is Virginia's largest source of carbon dioxide pollution and a key source of other harmful pollutants. We can no longer ignore these impacts. Virginia needs to accelerate the transition to cleaner transportation by adopting policies and making investments to provide more alternatives to driving and to promote electric vehicles.

POLICY RECOMMENDATIONS

Expand alternatives to driving (see *Transforming Transportation*, p. 32 and *Funding Transit for a Competitive, Sustainable Future*, p. 34)

Accelerate the transition to EVs:

- Implement Advanced Clean Car standards for new vehicles as 13 other states have done, and join states adopting the Zero Emissions Vehicle (ZEV) Program which would require manufacturers to sell an increasing number of electric and hybrid electric cars;
- Participate fully in the Transportation and Climate Initiative to explore regional programs to reduce GHG emissions;
- Adopt tax or other financial incentives to encourage EV purchases;
- Fund and provide incentives for public chargers;
- Adopt building code provisions requiring that level 2 chargers (or better) be installed in multifamily dwellings, and requiring that new houses with garages or driveways have outlets needed to charge EVs;
- Develop rate schedules that encourage EV charging in off-peak periods; and,
- Adopt requirements for electrifying state vehicle fleets and provide incentives for localities and regional transit agencies to purchase electric vehicles, including buses.

AN ELECTRIC VEHICLE CHARGES AT MAIN STREET STATION IN RICHMOND, VIRGINIA.
Image credit: Lisa McLaughlin,

DEFENDING SMART SCALE

Trip Pollard // Southern Environmental Law Center | Dan Holmes // Piedmont Environmental Council
Stewart Schwartz // Coalition for Smarter Growth

INTRODUCTION

SMART SCALE is Virginia's nationally recognized tool for scoring and ranking transportation proposals for funding. Prior to its adoption, funding decisions were largely made out of public view and without objective standards to measure and compare proposals. In 2014, the General Assembly unanimously adopted a new law requiring that each project undergo a cost-benefit analysis that assesses a broad array of important benefits, including congestion relief, improved job access, coordination with nearby land uses, and pollution impacts. The overall benefit score for each project is divided by the funds requested, and proposals are ranked and recommended for funding based on their benefit per dollar. The Commonwealth Transportation Board (CTB) then reviews the rankings in deciding which projects to include in the Six-Year Plan.

By adding much-needed transparency and objective measurement to the funding process, SMART SCALE helps ensure that we choose the most cost-effective projects and consider the transportation, economic, land use, and environmental impacts each proposal would have.

BACKGROUND

Recently, some state and local officials have made proposals that would significantly undermine SMART SCALE, including calls to eliminate all consideration of project cost, eliminate the land use factor, significantly increase the weight given to the congestion mitigation criterion, and fund some projects outside of the SMART SCALE process.

THE IMPORTANCE OF CONSIDERING COST

Removing "cost" from a cost-benefit analysis erodes the value of SMART SCALE as a tool. Responsible transportation decision-making and wise stewardship of taxpayer dollars requires that we consider the cost of a project or strategy. By dividing projects' benefits by their cost, SMART SCALE ensures taxpayers are getting the largest value per dollar spent. It also provides an incentive for local governments and regional agencies to work with the Virginia Department of Transportation (VDOT) to consider design changes and other ways to reconfigure projects in a way that would provide similar benefits but at a lower cost, or to solve the problem with a more creative approach.

PRESERVING THE LAND-USE FACTOR

Land use patterns and transportation are interdependent. By creating walkable, transit-oriented centers and corridors, we reduce the number of miles residents need to drive and make other travel modes more viable, taking thousands of trips off roadways and reducing vehicular emissions. Linking transportation projects to more efficient forms of land use is also the best way to protect our existing transportation investments and maximize efficiency of the network. SMART SCALE must continue to prioritize projects that promote more transportation-efficient development patterns.

> BY ADDING MUCH-NEEDED TRANSPARENCY AND OBJECTIVE MEASUREMENT TO THE FUNDING PROCESS, SMART SCALE HELPS ENSURE THAT WE CHOOSE THE MOST COST-EFFECTIVE PROJECTS AND CONSIDER THE TRANSPORTATION, ECONOMIC, LAND USE, AND ENVIRONMENTAL IMPACTS EACH PROPOSAL WOULD HAVE.

PROPERLY WEIGHTING CONGESTION REDUCTION

Evaluating the impacts of proposals on traffic congestion problems is important. However, using congestion reduction as the sole metric—or significantly increasing the weight this criterion already receives—would unduly bias projects toward expansion of road capacity, which is frequently an ineffective long-term solution. Extensive research shows that newly widened roads in metropolitan areas fill up again in as little as five years (known as "induced demand" or "generated traffic"). It would also fail to adequately recognize other important Commonwealth goals in SMART SCALE, including public safety, better accessibility to jobs and services, more efficient land use patterns, competitive economic development, and a healthier environment. Excessive focus on the congestion reduction factor also could limit transit investments tied to Transit Oriented Development (TOD), because that factor does not always capture the number of vehicle trips transit projects remove from the road in walkable, transit-trip generating places.

AVOIDING CIRCUMVENTION OF SMART SCALE

Almost every session, bills and budget provisions are introduced that would direct funding to a specific project and avoid SMART SCALE. This strategy completely undermines the purpose and value of using a system like SMART SCALE that requires each proposal to be compared against others and objectively ranked. Notably, the CTB is not required to strictly adhere to the project ranking and funding recommendations that come out of SMART SCALE; it may fund any proposal if it finds that the benefits the project would generate are worth its cost and impacts. However, those decisions to elevate a particular project despite its SMART SCALE score and ranking should remain the province of the state's transportation policy body to avoid highly political decisions about which projects to fund—the very thing SMART SCALE was designed to avoid.

CONCLUSION

SMART SCALE is serving the Commonwealth's best interests by ensuring that transportation funding decisions are supported by objective project evaluation and that limited transportation dollars are wisely spent. Efforts to weaken the criteria or circumvent scoring altogether must be rejected, and transparency in the funding process must be maintained.

POLICY RECOMMENDATIONS

Oppose any attempt to remove consideration of cost from SMART SCALE.

Oppose any attempt to eliminate consideration, or reduce the weighting, of the land use factor from consideration in those areas where it applies.

Oppose any measure giving even greater weight to congestion mitigation as a priority for state or regional funding, as well as any effort to weaken or eliminate environmental quality measures in project scoring.

Oppose any effort to exempt a particular project from the funding prioritization process.

Support extending the land use measure to other metropolitan planning areas.

HIGHWAY ROAD IN VIRGINIA WITH CONSTRUCTION TRUCK. SMART SCALE ENSURES THAT TRANSPORTATION PROJECTS ARE TRANSPARENT AND COST-EFFECTIVE.
Image credit: Shutterstock

ADOPTING SMART GROWTH TO SAVE MONEY, PROTECT THE ENVIRONMENT, AND ENHANCE ECONOMIC COMPETITIVENESS

Stewart Schwartz // Coalition for Smarter Growth | Trip Pollard // Southern Environmental Law Center
Dan Holmes // Piedmont Environmental Council

INTRODUCTION

Virginia continues to grapple with the impacts of sprawling development. This type of growth is costly to taxpayers by making the provision of public services less efficient. It also encourages greater reliance on automobiles, longer commutes, and unnecessary road construction – with resulting impacts on air and water quality, as well as the loss of historic, cultural, and scenic resources. In contrast, smart growth offers opportunities to meet changing market demand and to align growth, quality of life, environmental protection, and infrastructure savings, while boosting economic competitiveness. Further action is needed to advance smarter growth in Virginia, including strengthening state and local partnerships to study infrastructure costs and target tax dollars to more compact, walkable, transit-accessible growth areas.

BACKGROUND

In recent decades, suburban sprawl has taken an enormous toll on Virginia's taxpayers, communities, and environment. For example, the impact on family budgets from long, costly commutes has been significant and contributed to the 2008 real estate collapse in the outer suburbs[1]. These challenges, combined with limited federal, state, and local funding for public infrastructure and services, make smart growth — with its focus on more compact and efficient development — a public policy imperative.

Virginia has taken some steps in recent years to better link land use and transportation, including the incorporation of land use as a key factor in prioritizing transportation projects under SMART SCALE (see *Defending SMART SCALE*, p. 38). However, much more needs to be done to focus transportation and other infrastructure investments in cities, towns, and locally-designated growth areas to encourage efficient, walkable, and mixed-use communities. This smarter approach to development offers opportunities to meet changing market demand and to link growth, quality of life, and infrastructure savings. It also can boost economic competitiveness.

Recent studies and experiences of localities across the country make clear that today's market wants alternatives to sprawl. As demographics and preferences among young professionals, empty nesters, retirees, and more and more families change, desire increases for vibrant and walkable communities built more like the traditional towns and neighborhoods that were the norm prior to the emergence of scattered suburban development.

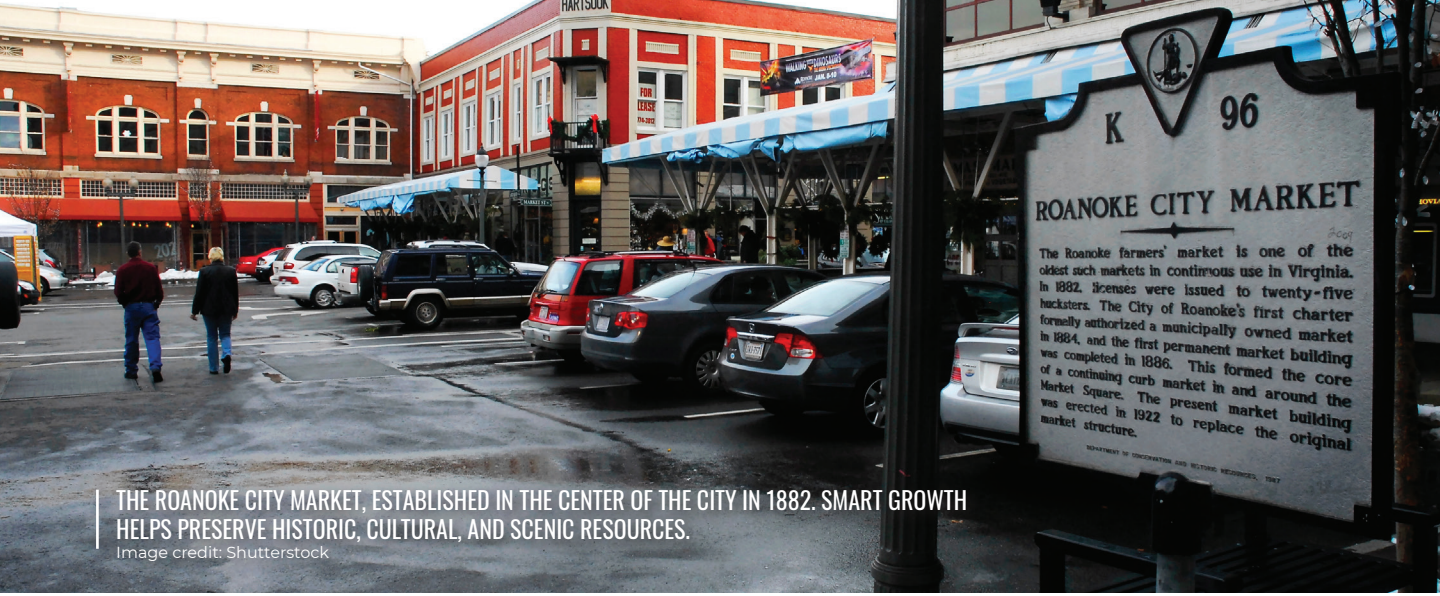
The high quality of life of these communities, combined with greater protection of our natural resources and scenic landscapes, enhances economic competitiveness by helping to attract and retain businesses and workers. Further, a 40-year summary of fiscal impact studies showed that smart growth typically consumes less land and costs much less for roads, utilities, and housing than does sprawling development[2].

> AS DEMOGRAPHICS AND PREFERENCES AMONG YOUNG PROFESSIONALS, EMPTY NESTERS, RETIREES, AND MORE AND MORE FAMILIES CHANGE, DESIRE INCREASES FOR VIBRANT AND WALKABLE COMMUNITIES BUILT MORE LIKE THE TRADITIONAL TOWNS AND NEIGHBORHOODS THAT WERE THE NORM PRIOR TO THE EMERGENCE OF SCATTERED SUBURBAN DEVELOPMENT.

Therefore, the state should strengthen its partnership with local governments to plan for the future and guide growth. The state should support the revitalization of cities, towns, and older suburban communities, prioritizing state infrastructure funds to existing communities and designated growth areas.

Good data is essential. State and local governments should estimate and report:

- Projected population and employment growth and the buildout potential for residential units and commercial square footage under their existing comprehensive plans and zoning;
- Residential and commercial capacity of vacant and underutilized land within existing growth areas (not greenfields) if developed or redeveloped as compact, mixed-use, walkable development, and estimate infrastructure costs under both a business-as-usual and a re-development scenario; and,
- Total maintenance and replacement costs for existing bridges, roads, water and sewer, schools, libraries and other public facilities to help ensure



THE ROANOKE CITY MARKET, ESTABLISHED IN THE CENTER OF THE CITY IN 1882. SMART GROWTH HELPS PRESERVE HISTORIC, CULTURAL, AND SCENIC RESOURCES.
Image credit: Shutterstock

adequate funding is provided for upkeep and replacement of existing facilities and services before communities consider any expansions.

When reviewing infrastructure projects, the state should respect local planning efforts and require comprehensive environmental reviews; studies of need, alternatives, and locations; consultation with local governments and residents; and, context sensitive design. There must also be a fair balance between what the public taxpayer and private developers pay toward the cost of infrastructure. Costs necessitated by new development should not solely be borne by existing residents.

CONCLUSION

Many fiscal conservatives and conservationists agree that the way we have grown in recent decades is costly for taxpayers and results in more traffic, air and water pollution, loss of farms and habitat, and a lower quality of life. Reversing this trend and steering our communities back toward smart growth—efficient, compact, walkable communities with good public transit—is essential to meet the evolving needs of Virginia residents and businesses, and protect our communities and environment.

POLICY RECOMMENDATIONS

Target scarce state infrastructure dollars to compact, walkable, transit-oriented places.

Enable local governments to ensure new development pays its fair share through proffers, impact fees, or other contributions, and enable them to provide incentives to encourage development within compact growth areas.

Reject proposals to weaken local land use authority for comprehensive plans, zoning, and reviews of utility infrastructure.

Ensure Go Virginia economic development and federal Opportunity Zones are tied to smart growth (mixed-use, walkable, and transit-oriented locations) and link industrial sites to freight rail.

Strengthen the use of designated growth areas and service districts, with an emphasis on cooperation between nearby counties, towns, and cities.

Strengthen land conservation tools including Transferable Development Rights, Purchase of Development Rights, and conservation easements.

Improve data collection on land development and infrastructure costs.

ADDRESSING SEA LEVEL RISE AND A CHANGING CLIMATE

Karen Forget // Lynnhaven River NOW | Shereen Hughes // Wetlands Watch | Skip Stiles // Wetlands Watch
Ben Watson // James River Association | Steven Carter-Lovejoy // Sierra Club, Virginia Chapter
Danielle Simms // Virginia League of Conservation Voters

INTRODUCTION

Climate change presents Virginia with a number of pressing challenges that require immediate action, including sea level rise, recurrent flooding, increased air and water temperatures, and increased frequency and intensity of storms and heavy rainfall. The potential effects on our environment, economy, citizens, and communities were initially documented by the 2008 Governor's Commission on Climate Change. Since that time, little progress has been made towards implementing the recommendations of the Commission. Significant work is needed in Virginia to ensure that our natural systems, infrastructure, economy and citizenry remain healthy and resilient in the face of change.

BACKGROUND

Virginia is experiencing a changing climate: carbon dioxide levels have increased by more than 45% since the late 1700s due to the burning of fossil fuels and human industrial activity. These greenhouse gases have warmed the surface and lower atmosphere by approximately 1.8°F during the last 50 years; in 2008, Governor Kaine's Climate Change Commission estimated a 3.6- degree increase by 2100. As the atmosphere warms, large volumes of melting glacial water and warmer ocean temperatures contribute to accelerating sea level rise - but in Virginia, that's only part of the problem. The southeast corner of the Commonwealth is sinking, increasing the relative rate of rising seas.

A warmer atmosphere also increases rain intensity. The Southeast has experienced a 27% increase in the frequency of its heaviest precipitation events, and some scenarios in the 2018 National Climate Assessment suggest additional increases of more than 40% in decades to come. Studies in Virginia Beach confirm the rise of high-intensity rainfall events in the 10-year storm precipitation rates. These studies recommend a 20% increase in the design criteria for stormwater practices to accommodate these precipitation increases.

The state conducted a comprehensive review of these impacts through the 2008 Governors Climate Change Commission and again through the 2014 Climate Change and Resiliency Update Commission. In addition, many other studies have been conducted that project sea level rise and increased rainfall intensity impacts coming to coastal Virginia. Until last year, nothing was done at the state level to respond to these projections, leaving local governments in Virginia to find their own way. As a result, there are a variety of uncoordinated approaches to increased resilience needs in the state.

> AS THE ATMOSPHERE WARMS, LARGE VOLUMES OF MELTING GLACIAL WATER AND WARMER OCEAN TEMPERATURES CONTRIBUTE TO ACCELERATING SEA LEVEL RISE - BUT IN VIRGINIA, THAT'S ONLY PART OF THE PROBLEM. THE SOUTHEAST CORNER OF THE COMMONWEALTH IS SINKING, INCREASING THE RELATIVE RATE OF RISING SEAS.

In November 2018, Executive Order 24 began a long overdue state effort to address sea level rise. The Executive order mandates some agency reviews and appoints a special assistant to the Governor for Coastal Adaptation and Protection. There is no state guidance being provided to localities on the future impacts for which they should be planning. While the Virginia Shoreline Resiliency Fund was created to fund adaptation efforts, no state funding has been provided to begin adaptation actions. The federal government's initiatives on sea level rise and climate change were reversed, ironically, ten days before Hurricane Harvey made landfall in Texas and unleashed record-setting destruction. Without state action, Virginia communities are increasingly vulnerable to the economic, physical, and environmental consequences of climate change.

CONCLUSION

Virginia has acknowledged the impact of sea level rise and climate change on coastal communities. Numerous studies have made recommendations on actions for Virginia to address sea level rise and mitigate the impacts of a changing climate. The state needs a targeted and coordinated response for state programs and explicit guidance for action by Virginia's localities.

POLICY RECOMMENDATIONS

Reduce Greenhouse Gas Emissions through mitigation (see *Investing in Virginia's Energy Efficiency*, p. 52; see *Offshore Wind: Made in Virginia*, p. 60; see *Regional Action on Climate with Local Benefits*, p. 54; and, see *Curbing Vehicle Pollution*, p. 36).

Refine Virginia-specific projections for temperature change, sea level rise, storm intensity, and changes in rainfall intensity.

Provide consistent guidance, updated regularly, on climate change benchmarks for which localities should plan.

Evaluate and consider climate impacts when making decisions on agency operations, programs, funding allocations, planning documents, and regulations. Existing studies should be considered during this process.

Establish a state requirement that all state agencies, regional planning authorities, and localities include climate impacts in all long- range planning processes (e.g. comprehensive, transportation, water-supply, hazard mitigation) and land use decisions.

Fund adaptation efforts through existing funding mechanisms beginning with $50 million annually to the Virginia Shoreline Resiliency Fund.

Develop new or refocus existing programs to facilitate utilization of natural and nature based strategies in sea level rise resiliency efforts including programs that support re-naturalization of lands to support their most sustainable use.

Revise design-storm criteria in Virginia's water quality regulations to ensure that they reflect current precipitation data.

Establish a fund to subsidize flood insurance for low-income residents.

In real estate transactions, all potential buyers and renters should receive information regarding the flood history of the property in consideration.

CHESAPEAKE BEACH, IN VIRGINIA BEACH, VIRGINIA AFTER THE NOR-EASTER FROM HURRICANE JOAQUIN PASSED BY.

Image credit: Shutterstock

ENDNOTES

CURBING VEHICLE POLLUTION

[1] EIA, State Carbon Dioxide Emissions Data
[2] EPA, Greenhouse Gas Emissions from a Typical Vehicle; US Census Bureau, American Fact Finder
[3] Union of Concerned Scientists; EPA, Greenhouse Gas Emissions from a Typical Vehicle
[4] Department of Energy, eGallon

ADOPTING SMART GROWTH TO SAVE MONEY, PROTECT THE ENVIRONMENT, AND ENHANCE ECONOMIC COMPETITVENESS

[1] See, for example, Joe Cortright, CEOs for Cities, "Driven to the Brink." http://www.ceosforcities.org/work/driven_to_the_brink
[2] See Transportation Cooperative Research Report 39, "Costs of Sprawl," http://www.trb.org/Publications/Blurbs/Costs_of_Sprawl_ 2000_160966.aspx and TCRP Report 74, Costs of Sprawl—Revisited, http://pubsindex.trb.org/view.aspx?id=540975

POWERING VIRGINIA WITH CLEAN ENERGY

4

EXECUTIVE SUMMARIES AND CONTACT INFORMATION

LEGISLATIVE POINTS OF CONTACT

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INVESTING IN VIRGINIA'S ENERGY EFFICIENCY

Virginia should enact robust, new policies that increase energy efficiency in the Commonwealth and empower local governments to impose stronger measures within their jurisdictions. Failing to improve energy efficiency will burden our citizens, health, environment and economy for decades.

William Penniman // Sierra Club, Virginia Chapter // bill.penniman@gmail.com

REGIONAL ACTION ON CLIMATE WITH LOCAL BENEFITS

Joining RGGI will reduce carbon emissions from power plants at the fastest rate in the South. This market-based approach will allow the Commonwealth to address both the causes and impacts of climate change while making critical investments in programs that can benefit all Virginians.

Harrison Wallace // Chesapeake Climate Action Network // harrison@chesapeakeclimate.org

BREAKING DOWN BARRIERS TO SOLAR IN OUR COMMUNITIES

Building solar in Virginia's communities makes sense for the Commonwealth. A combination of new incentives, removing barriers, and protecting customers' rights to access renewable energy will create a robust market for local, clean energy. Increasing the amount of distributed generation in Virginia will contribute to building a more resilient grid and support a larger transition to renewable energy.

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IMPLEMENTING EFFECTIVE GRID TRANSFORMATION

The SB 966 provides utilities with the opportunity to overhaul the Commonwealth's energy infrastructure, but we need to be vigilant to make sure that these electric distribution grid transformation projects are implemented effectively in order to reduce carbon output, empower customers, and prepare Virginia for the future.

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OFFSHORE WIND: MADE IN VIRGINIA

Full development of both the CVOW pilot project and the commercial lease area are critical for the Commonwealth. Offshore wind not only addresses the threat of climate change,it also acts as a major economic driver. Virginia's policymakers should embrace the opportunity to be a national leader on renewable energy and job creation.

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DRILLING OFF VIRGINIA'S COAST: NOT WORTH THE RISK

Drilling off Virginia's coast is incompatible with vibrant, clean beaches and healthy coastal habitat and resources as well as the communities and economies that depend on them. Virginia should seek to protect our coast through both administrative and legislative actions.

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TRANSITIONING TO VIRGINIA'S CLEAN ENERGY FUTURE

Climate change is one of the most pressing problems facing the Commonwealth. Virginia must reduce its carbon output by reducing energy use, increasing clean generation, and closing existing fossil fuel facilities. Fortunately, we can achieve 100% clean energy while ensuring reliability, growing the economy, and protecting low-income families.

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EXPANDING THE CLEAN ENERGY INDUSTRY

Virginia should invest more in the clean energy economy in order to meet Virginia's energy demands completely with clean energy and spur job growth in the Commonwealth. As more businesses relocate to Virginia with pledges to power their companies by clean energy – such as Amazon's pledge to use 100% renewables - we must be equipped with the clean energy workforce in the Commonwealth

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INVESTING IN VIRGINIA'S ENERGY EFFICIENCY

William Penniman // Sierra Club, Virginia Chapter

INTRODUCTION

Despite recent legislation requiring Virginia's two largest electric utilities to spend more on energy efficiency over the next ten years, Virginia's energy efficiency efforts and achievements will remain far behind most other states. As a result, Virginians will pay larger energy bills, suffer pollution-driven health and climate harms, and lose economic opportunities.

Energy efficiency—achieving the same output with less energy—is the least expensive way to meet consumers' energy needs. Efficiency is estimated to cost utilities 2.5¢-3.1¢ per kilowatt hour saved[1] – far less than Virginia's average retail rates.

Unfortunately, misaligned incentives, up-front costs, and poor policies impede efficiency improvements. Virginia ranks near the bottom among states for efficiency investments and results.

BACKGROUND

VIRGINIA'S ENERGY EFFICIENCY PROBLEM

Unnecessary energy use and pollution harms Virginians across the board – in their wallets, health, and environment. Avoidable energy usage hurts everyone, but it disproportionately impacts low-income individuals who are already struggling to make ends meet. Investing in saving energy would create jobs, free-up money to spend elsewhere in Virginia, and improve residents' health[2]. A 2013 study found that Virginia could gain about $3.50 for each $1.00 invested in energy efficiency[3], which would greatly benefit Virginia's families, businesses and economy.

Unfortunately, Virginia faces barriers to full deployment of energy efficiency, and current policies fail to incentivize or require efficiency investments. For example:

- Utilities' profit incentives favor building new facilities and paying affiliates for fuel and pipeline services, not reducing customers' energy use, and none of Virginia's electric and gas utilities are required to achieve any efficiency targets;
- Weak building codes permit inefficient construction leaving buyers and renters to bear higher energy costs;
- Virginia's "Dillon Rule" prevents local governments from requiring greater energy efficiency in buildings or appliances or requiring benchmarking within their own jurisdictions; and,
- Government entities often avoid near-term costs of efficiency improvements at the expense of greater future costs to taxpayers.

> AVOIDABLE ENERGY USAGE HURTS EVERYONE, BUT IT DISPROPORTIONATELY IMPACTS LOW-INCOME INDIVIDUALS WHO ARE ALREADY STRUGGLING TO MAKE ENDS MEET.

While Virginia has talked of improving energy efficiency programs, results have been limited. For example:

- Studies estimate that Virginia has the economic potential to cut electricity use by 18.7% by 2035, but has captured only 2% of this potential, ranking 48th among 50 states and the District of Columbia;[4]
- By 2018, Dominion was deemed likely to achieve only one-third of the legislature's voluntary 2022 efficiency goal.[5] Dominion Energy, ranks near the bottom of large utilities for energy efficiency savings and program performance;[6]
- Legislation passed in 2018, the "Grid Transformation and Security Act," requires more utility spending on energy efficiency; but, unlike many other states, Virginia still does not have an Energy Efficiency Resource Standard (EERS) that requires any specific, demand-reduction results; and,
- Even with its latest Demand Side Management (DSM) program, Dominion expects to achieve less than one-fifth of annual energy savings achieved by other utilities and only 5% -10% of the annual energy savings achieved by leading utilities.[7]

OUR STATEWIDE POLICY FAILS TO PUT CUSTOMERS' FIRST

The point of energy efficiency is to reduce total statewide consumption of energy. The less energy that is consumed, the less needs to be generated. This reduction in generation translates to reduced costs and carbon pollution. This creates an obvious conflict of interest when the utilities who generate and sell electricity bear the main responsibility for running programs that reduce electricity sales. Other states have addressed this conflict of interest with mandatory

energy efficiency goals (EERS) or by shifting energy efficiency program responsibilities to an independent, non-profit entity funded by electric and gas rates.

Virginia law currently allows the utilities to recover "lost revenues," i.e., the money the utility would have made if it had sold the energy that the efficiency program avoided in the first place. Unfortunately, Virginia law is unclear whether utilities can claim "lost revenues" when the utilities are already collecting – and often exceeding – their lawful revenue requirements. The code should be updated to clarify that utilities may only seek recovery of lost revenues in general rate cases and only if they prove that they were unable to meet their SCC-approved revenue requirements as a result of their energy efficiency programs.

Moreover, utilities currently earn a profit on all efficiency program costs, regardless of how well a program performs. To properly align incentives, utilities should earn no return on their efficiency expenditures if they fail to meet mandatory energy efficiency improvement goals.

CONCLUSION

Virginia should enact robust, new policies that increase energy efficiency in the Commonwealth and empower local governments to impose stronger measures within their jurisdictions. Failing to improve energy efficiency will burden our citizens, health, environment and economy for decades.

POLICY RECOMMENDATIONS

Adopt Energy Efficiency Resource Standards that:

- Require electric and gas utilities to achieve industry-leading efficiency-driven load-reduction goals, and
- Require utilities and regulators to prioritize energy efficiency and DSM solutions over building new facilities and burning more fuel.

Clarify that utilities may only recover lost revenues when and if a utility fails to meet its annual base rate revenue requirement.

Provide utility profit incentives tied to program performance rather than program spending.

Implement a robust state revolving fund to finance efficiency measures by local governments, schools and possibly others.

Require that building codes meet or exceed the latest national and international standards and empower local governments to require greater energy efficiency within their jurisdictions.

Require - or allow local governments to require - building landlords and sellers to publicize average energy costs.

Incentivize zero-net energy and zero-net carbon construction.

Require timely conversion to LED lights in indoor and outdoor fixtures serving state or local entities, while allowing affected entities flexibility to choose lighting characteristics.

AN LED LIGHT BULB SWINGS NEXT TO TRADITIONAL LIGHT BULBS.
Image credit: Shutterstock

REGIONAL ACTION ON CLIMATE WITH LOCAL BENEFITS

Harrison Wallace // Chesapeake Climate Action Network

INTRODUCTION

Throughout the Commonwealth, climate change is impacting families and communities. Stronger storms, extreme temperatures, and rising seas create regular challenges. With these occurrences only expected to increase in intensity and frequency, Virginia must address these symptoms of climate change. However, Virginia's leaders must also address the root cause of these problems – carbon pollution.

Fortunately, the Commonwealth has the opportunity to reduce emissions while advancing programs to offset the impacts of climate change. Significant investments in energy efficiency can reduce energy use and lower electricity bills. Funding strategic coastal resilience will bolster Virginia's coast. Protecting frontline communities will acknowledge that some Virginians bear disproportionate burdens – both from the legacy of fossil fuel use and the impacts of climate change. All of these achievements are possible if Virginia joins the Regional Greenhouse Gas Initiative (RGGI).

BACKGROUND

The Regional Greenhouse Gas Initiative (RGGI) is a joint effort of nine northeast and mid- Atlantic states that sets a limit on carbon pollution and requires power plants to purchase carbon allowances at auction. The auction proceeds are distributed to RGGI member states, who can invest these dollars in energy efficiency programs, rebates for low-income residents, and incentives for renewable energy.

Virginia's relationship with RGGI began in 2017, when Governor McAuliffe signed Executive Directive 11 (ED 11). This order would have allowed the Commonwealth to link with RGGI and cut carbon pollution by 30% by 2030. However, despite overwhelming public support and approval by the Air Pollution Control Board, restrictive budget language prevents Virginia's Department of Environmental Quality from moving forward with the linking process.

Virginia's leaders can still take action. By passing legislation to fully join the RGGI program, the General Assembly can ensure that revenues are spent to benefit the people of the Commonwealth. Independent research projected that Virginia could receive up to $100 million annually from the RGGI program[1], opening up those funds for investments in energy efficiency and coastal resilience, among others.

Joining RGGI also has the potential to address two problems that have long plagued Virginia's low income and frontline communities. The first is a matter of economic justice: individuals across the Commonwealth, especially in low-income areas, struggle with an above-average energy burden. Energy burden is defined as the percentage of the gross household income spent on electricity costs. The national average for a household's electricity burden is 2.7%, while the average in Virginia is 3.1%. The discrepancy is even more evident in low-income communities. In some parts of Southside and Southwest Virginia, the energy burden ranges from 6 to 9.5%.

> BETWEEN 2009 AND 2014, THE NINE RGGI STATES IMPROVED AIR QUALITY THROUGHOUT THE REGION AND EXPERIENCED SIGNIFICANT PUBLIC HEALTH BENEFITS. THE BENEFITS WERE SIGNIFICANT — HUNDREDS OF PREMATURE DEATHS WERE AVOIDED, ALONG WITH REDUCTIONS IN HEART AND ASTHMA ATTACKS, BRONCHITIS, EMERGENCY ROOM VISITS, AND HOSPITAL ADMISSIONS.

Lack of energy efficiency measures is one contributor to Virginia ratepayers paying an outsized portion of their income for their electric bills. Joining RGGI would generate millions of dollars in revenue that could provide an annual boost to the Commonwealth's energy efficiency programs. Directing a meaningful amount of this funding specifically to low-income areas would also provide the greatest impact to ratepayer electric bills (see *Investing in Virginia's Energy Efficiency*, p. 52).

Another potential boon in joining RGGI is the ability to invest in coastal resilience. Coastal flooding is a threat to progress and economic longevity in Hampton Roads, an area that is home to nearly 1.6 million people and the largest naval base in the world. Coastal Virginia has seen a 325% increase in nuisance flooding since 1960, which is defined as flooding that leads to public inconveniences, such as road closures and business disruption. Joining RGGI could provide the first ever consistent funding source for flooding resilience. By diverting a portion of revenues to the Shoreline

AERIAL VIEW OF CHESTERFIELD POWER STATION ON THE JAMES RIVER IN CHESTER, VIRGINIA. MEMBERSHIP IN RGGI SETS LIMITS ON CARBON POLLUTION AND REQUIRES THE PURCHASE OF CARBON ALLOWANCES AT AUCTION
Image credit: Southwings

Resiliency Fund, localities could receive funding for flooding adaptation projects (see *Addressing Sea Level Rise and a Changing Climate*, p. 42).

RGGI has also contributed to healthier communities across the northeast. Between 2009 and 2014, the nine RGGI states improved air quality throughout the region and experienced significant public health benefits. The benefits were significant — hundreds of premature deaths were avoided, along with reductions in heart and asthma attacks, bronchitis, emergency room visits, and hospital admissions. Improved health outcomes allowed taxpayers to work more, and employers didn't have to slow economic production due to sick days related to air pollution. In total, this saved employers about $5.7 billion dollars- money that was put to work in the local economy.

The RGGI market itself will also prove to be an enormous economic boost for Virginia. Over the last three years (2015-2017), research has shown that the RGGI program has led to 14,500 added job years across the region (the equivalent of one full-time job for the duration of one year)[2] and $1.4 billion of net positive economic activity.[3]

CONCLUSION

Joining RGGI will reduce carbon emissions from power plants at the fastest rate in the South. This market-based approach will allow the Commonwealth to address both the causes and impacts of climate change while making critical investments in programs that can benefit all Virginians.

POLICY RECOMMENDATIONS

Enact legislation to formally join the Regional Greenhouse Gas Initiative.

Devote no less than 50% of RGGI revenue to energy efficiency programs with a meaningful portion of that dedicated to low-income Virginians.

Invest in coastal resilience through devoting some RGGI revenue to the Shoreline Resilience Fund.

BREAKING DOWN BARRIERS TO SOLAR IN OUR COMMUNITIES

Ivy Main // Sierra Club, Virginia Chapter | William Cleveland // Southern Environmental Law Center
Dan Holmes // Piedmont Environmental Council

INTRODUCTION

Local governments, residents and businesses want the ability to access solar energy in their communities. Rooftops, parking lots, closed landfills, former mine lands, and other spaces have the potential to produce nearly one third of Virginia's electric needs with clean, local energy. Building this "distributed" solar saves taxpayer dollars, creates jobs, and stimulates the economy, all while lowering Virginia's carbon footprint. Additionally, distributed generation makes the Commonwealth more resilient in the face of climate change and threats to the grid.

Virginia law supports a growing market for large-scale solar projects, but it has not kept up with the demands for small-scale, customer-sited, "distributed" solar. Worse, policy barriers hold communities back from investing in the clean energy source that customers most want today.

BACKGROUND

Currently, most distributed generation in Virginia happens through net metering, which allows customers to consume the energy their solar panels produce. If the panels produce more than the customer needs, excess energy rolls over as credit against energy used when the sun isn't shining. Customers only pay the utility for energy if their monthly consumption exceeds the total amount of energy the solar panels produced. Customers also pay a monthly fee for transmission and distribution.

The traditional utility business model relies on large power stations pumping electricity onto a one-way grid. Distributed generation disrupts this by producing electricity where it's used, reducing the need for long-distance transmission and saving customers money. Distributed generation, particularly solar, provides numerous other benefits, such as reducing the need for the utility to build expensive new generation; helping to reduce carbon emissions; and increasing grid resilience and emergency preparedness in communities.

Net metering has been critical to the growth of Virginia's distributed solar industry. Once grid transformation is complete in Virginia, other options may emerge to replace net metering as a tool for expanding distributed solar. Policymakers should ensure that any new approach delivers economic advantages to customers that are equal to or better than to those offered by the net metering model.

Additionally, Virginia can encourage the deployment of renewable energy by addressing the barriers and disincentives that exist under current law. Right now, Virginia offers none of the financial incentives offered by states that have the most distributed solar. Without tax credits, rebates, or a mandatory renewable portfolio standard to support a market for solar renewable energy certificates (SRECS), many customers can't afford the upfront costs of solar.

> VIRGINIA OFFERS NONE OF THE FINANCIAL INCENTIVES OFFERED BY STATES THAT HAVE THE MOST DISTRIBUTED SOLAR.

Virginia law also imposes a thicket of limitations, conditions and penalties on the solar industry and customers. Together these barriers add up to millions of dollars of lost revenue growth for Virginia. These impediments vary from one utility to another, but include:

- Barriers for the solar industry include a limit on the total amount of net metered solar allowed in Virginia;
- Barriers to local government solar include a prohibition on using the electricity produced at one site to serve buildings on a different site, and limits on the use of third-party financing;
- Barriers to residential solar include added fees known as standby charges that act like a tax on large residential solar facilities, barriers to using a single solar facility to serve an apartment or multi-family housing complex, and a requirement for customers in investor-owned utility territories, such as Dominion and Appalachian Power, that a solar array can't be larger than would have been needed to meet the previous year's demand, regardless of current needs; and,
- Barriers to solar for businesses include a project size cap for net-metered solar facilities, barriers to using a single solar facility to serve two or more meters, and a barrier preventing a building owner from selling the output of a solar array to tenants.

In recent years the General Assembly has taken action to support investments in utility-scale solar facilities. Now, policymakers should embrace the opportunity to address carbon pollution and grow the economy by supporting small-scale solar in the Commonwealth.

CONCLUSION

Building solar in Virginia's communities makes sense for the Commonwealth. A combination of new incentives, removing barriers, and protecting customers' rights to access renewable energy will create a robust market for local, clean energy. Increasing the amount of distributed generation in Virginia will contribute to building a more resilient grid and support a larger transition to renewable energy.

POLICY RECOMMENDATIONS

Support distributed solar through incentives such as tax credits, rebates, or low-interest loans.

Remove barriers that limit customers' access to distributed solar, including lifting the 1% cap on net metering for customers in investor-owned utility territories, affirming the legality of third-party power purchase agreements for all customers, and allowing local governments to use electricity from a solar project on one property to serve buildings on nearby properties.

Implement specific programs to expand access to distributed energy for low- and moderate-income customers.

Reject any changes to the net metering compensation structure, unless those changes, at a minimum:

- Grandfather all existing net-metering customers;
- Mandate that any changes to net-metering do not take effect for at least five years; and,
- Ensure the economic incentives are as good as or better for customers than the current net metering system.

SOLAR PANELS ATTACHED TO THE ROOF OF THE PIEDMONT ENVIRONMENTAL COUNCIL OFFICE IN WARRENTON, VIRGINIA.
Image credit: David Oglethorpe

IMPLEMENTING EFFECTIVE GRID TRANSFORMATION

William Cleveland // Southern Environmental Law Center | Hannah Coman // Southern Environmental Law Center
Walton Shepherd // Natural Resources Defense Council

INTRODUCTION

Virginia has an antiquated electric grid. The current power grid was originally designed to support large fossil fuel power plants, with "one-way" power flow from plants to customers. To significantly cut greenhouse gas emissions and realize climate goals, Virginia will need to build a modern, responsive and integrated power grid.

Transforming the grid to make it "smarter" and more resilient through the use of cutting-edge technologies that communicate and work together to deliver electricity more reliably and efficiently can reduce peak demand and pollution, increase integration of renewable generation, and lower operational costs. In addition, the adoption of advanced technology will yield more data on ratepayers' energy use, which could provide ratepayers with an opportunity to better manage their own energy consumption and costs.

BACKGROUND

In 2018, the General Assembly passed SB 966, the Grid Transformation and Security Act, which allows utilities to invest in modernizing Virginia's power grid. However, this legislation defines "electric distribution grid transformation projects" very broadly, which could result in missed opportunities, wasteful projects, or even costly abuse.

In July of 2018, Dominion requested approval from the State Corporation Commission (SCC) for Phase I, the first three years of a ten-year grid modification plan. The entire plan would cost customers approximately $6.0 billion and Phase I, as proposed, would have cost customers approximately $1.5 billion including financing costs.

Of the proposed program areas, the SCC ultimately approved only one – the cyber and physical security and telecommunications proposals. For everything else, the SCC found the proposal was not cost effective or reasonable and prudent and would result in an economic loss for all customers.

The SCC's oversight in this matter was essential to prevent wasteful spending by the utility on a plan that was not well-developed or comprehensive. In its ruling, the SCC stated that full deployment of smart meters and other grid enhancements is only reasonable and prudent if it "is accompanied by a sound and well-crafted plan to fulfill the promise that smart meter technology and other grid enhancements offer." The Commonwealth's policymakers should promote electric distribution grid transformation projects that are part of a cost-effective and robust plan to reduce Virginia's carbon output, lower energy costs, and produce a flexible, adaptable grid. These projects should include the integration of the following, in rough order of implementation and immediate opportunity:

- **Advanced Metering Infrastructure ("AMI")**. AMI is an integrated system of smart meters, communication networks and data management systems that enable two-way communications between utilities and customers. AMI and related technologies are beneficial and cost-effective only to the extent that they are used to maximize the potential gains of rate optionality, energy efficiency, demand response, and distributed energy resources. Utilities will also likely need to upgrade their software capacities to fully exploit the new data produced by AMI; and,
- **Data Access.** The implementation of AMI will develop data on every customer's energy usage. This data is very valuable to utilities, customers, and the energy industry. The data provided by AMI should be properly integrated with a Green Button Connect My Data (CMD) and Green Button Download my Data (DMD), which provides customers with access to their own personal data, the ability to download it, and the authority to release that data to third party energy product providers, so customers can better manage their energy consumption and costs.

> TO SIGNIFICANTLY CUT GREENHOUSE GAS EMISSIONS AND REALIZE CLIMATE GOALS, VIRGINIA WILL NEED TO BUILD A MODERN, RESPONSIVE AND INTEGRATED POWER GRID.

- **Demand response programs.**
  - Distributed Energy Resources (DER) – In order to best integrate and expand DER, utilities should develop hosting capacity maps and make these maps publicly available. Hosting capacity maps are interactive maps that indicate how much generation can be added in a particular area before the current infrastructure reaches capacity or other limitations;
  - Non-Wires Alternatives (NWAs) – NWAs include the deployment and utilization of local DERs (including distributed solar, microgrids, and battery storage), and other non-traditional means of regulating voltage, managing the grid, reducing peak loads, improving resiliency or replacing or deferring traditional transmission and distribution investments (such as energy efficiency and demand response); and,
  - Electric Vehicle (EV) infrastructure – EVs with smart charging systems can help balance energy loads by charging vehicles during periods of cheap and abundant renewable energy. Additionally, with the implementation of vehicle-to-grid communication technology, EVs can act as a quasi-battery – storing surplus electricity generated from renewable energy sources and feeding power back to the grid when needed.

CONCLUSION

The SB 966 provides utilities with the opportunity to overhaul the Commonwealth's energy infrastructure, but we need to be vigilant to make sure that these electric distribution grid transformation projects are implemented effectively in order to reduce carbon output, empower customers, and prepare Virginia for the future.

POLICY RECOMMENDATIONS

Enact legislation to make account-level comprehensive data easily accessible to the ratepayer.

Enact legislation to protect ratepayers' private information, but allow ratepayers to access their own data and disclose it to third party energy efficiency providers.

Amend Virginia code section 56-585.1 to prohibit utilities from using the customer credit offset for costs associated with grid hardening activities included as "electric distribution grid transformation projects." Grid hardening activities include, but are not limited to: implementing new loading standards; implementing new vegetation management programs; upgrading substation transformers; replacing breakers, switches, and re-closures; removing obsolete network equipment; and replacing failing equipment.

NEST THERMOSTAT. ADVANCES IN CONSUMER TECHNOLOGY PROVIDE END-USERS MORE OPPORTUNITY TO ACCESS THEIR OWN ENERGY USAGE DATA.
Image credit: Shutterstock

OFFSHORE WIND: MADE IN VIRGINIA

Eileen Woll // Sierra Club, Virginia Chapter | David Carr // Southern Environmental Law Center

INTRODUCTION

Offshore wind holds enormous potential for communities across the nation. According to a 2018 Department of Energy[1] report, there are enough planned offshore wind projects to power about 8 million homes. These projects are being developed in 13 states, and most will be online by 2030. The first few projects will be erected with largely European parts and labor. But with over 24,000 megawatts in the queue, there is ample opportunity for those parts and labor to be American made. The question now is how much of this exciting industry calls Virginia home.

To make Virginia attractive to the wind industry and attract manufacturing firms to Hampton Roads, Virginia must create policy certainty and demonstrate confidence in its own offshore wind projects.

BACKGROUND

In September 2013, the federal Bureau of Ocean Energy Management (BOEM) leased to Dominion Energy a 112,799-acre commercial lease area located about 27 miles off the coast of Virginia Beach. When fully developed, the lease area will be capable of producing 2,000MW of wind energy - enough to power 500,000 homes.

In addition to the commercial lease area, Dominion is also the project lead with Ørsted on an adjacent 2,135-acre research area leased in 2014 to the Department of Mines, Minerals and Energy (DMME) called the Coastal Virginia Offshore Wind project (CVOW). The project involves erecting two six-megawatt wind turbines.

CVOW will be operational in late 2020, offering a number of "firsts" that would benefit both Virginia and the nation. CVOW will be the first offshore wind developed in federal waters, and the first project owned by an electric utility company. Furthermore, CVOW will provide valuable data on weather and wind, construction challenges and scheduling, and overall logistics that will inform the ultimate construction and operation of a much larger project in the commercial lease area.

In November 2018, the SCC gave Dominion the go ahead for the CVOW project consistent with the legislature's finding that the project is in the public interest. Onshore work is proceeding this summer, and construction in the research lease area is slated for the summer of 2020.

Lessons learned from this pilot project could improve the entire U.S. offshore wind industry. As more projects come online, turbine parts will become increasingly American-made, driving down the costs and creating thousands of jobs. Several Virginia-based studies indicate that full development of the Commonwealth's offshore wind could create between 10,000 and 14,000 jobs.[2] Both the installation of turbines and the creation of a regional supply chain will provide not only high-paying, career-length jobs but could also prompt essential job programs in low-income communities throughout Hampton Roads.

> VIRGINIA HAS THE LARGEST EAST COAST POOL OF EXPERIENCED MARITIME WORKERS, WITH MORE THAN 24,000 FULL-TIME JOBS IN SHIPBUILDING AND SHIP REPAIR ALONE – MORE THAN NEW YORK AND ALL NEW ENGLAND STATES COMBINED.

One of the greatest advantages for Hampton Roads is the capacity to handle very large pieces of steel. There are over 8,000 large and small parts that go into one wind turbine. Steel makes up most of the large parts including turbine blades, towers, foundations, and offshore substations. Two port sites in Hampton Roads could be upgraded, and within two years stand ready for investment by steel fabricators keen on selling key components parts to the first wave of offshore wind projects.

Virginia has the largest East Coast pool of experienced maritime workers, with more than 24,000 full-time jobs in shipbuilding and ship repair alone – more than New York and all New England states combined. Maritime workers have the right skills for the offshore wind industry; both industries require steel-working talent, mechanical and electrical technicians and welders. To ready maritime workers and other Virginians for these high-paying jobs, the Commonwealth must work with labor unions, industry partners, community colleges, and state universities to develop and implement a comprehensive workforce development plan. Finally, as offshore wind developers consider the Atlantic Coast for their operations, there is need for

OFFSHORE WIND TURBINES IN A WIND FARM UNDER CONSTRUCTION OFF THE COAST OF ENGLAND AT SUNSET.

Image credit: Shutterstock

assurances that projects will move forward. In Virginia, Dominion must provide that certainty by publicly committing to building its 2,000MW commercial lease area within the next 10 years. The utility included the 12MW pilot project (CVOW) in its 2018 Integrated Resource Plan (IRP). However, its IRP – a plan encompassing the period from 2018 to 2032 - does not include the 2,000MW commercial lease area. Dominion could also release a timeline for build out as recommended in the Governor's 2018 Energy Plan. This commitment will provide the market certainty developers need to invest in Virginia.

CONCLUSION

Full development of both the CVOW pilot project and the commercial lease area are critical for the Commonwealth. Offshore wind not only addresses the threat of climate change, it also acts as a major economic driver. Virginia's policymakers should embrace the opportunity to be a national leader on renewable energy and job creation.

POLICY RECOMMENDATIONS

Prompt Dominion to expedite the development of the larger commercial lease area and the launch of an offshore wind industry in Virginia. Potential legislation includes a mandatory Renewable Portfolio Standard (RPS) with an offshore wind carve-out.

Support a budget that includes $1 million dedicated to advancing the offshore wind industry, including $250,000 to create a Virginia Office for Offshore Wind within DMME. This office would promote and expedite the CVOW project and the larger commercial project, promote Virginia's unique port and workforce advantages in attracting offshore wind supply chain businesses, and support activities of the Virginia Offshore Wind Development Authority, which receives no funding.

DRILLING OFF VIRGINIA'S COAST: NOT WORTH THE RISK

Deborah M. Murray // Southern Environmental Law Center | Karen Forget // Lynnhaven River NOW
Terra Pascarosa // Oceana | Jim Deppe // Surfrider Foundation, Virginia Chapter

INTRODUCTION

The Trump administration is proposing to open nearly all U.S. waters to offshore oil and gas drilling and seismic airgun blasting—including off Virginia's coast.

This is a major shift in national policy. To date, no producing oil or gas wells have ever been drilled off of our coast. At the same time, the federal administration is rolling back safety regulations put in place after the BP Deepwater Horizon oil spill disaster. Offshore drilling is not worth the risk to Virginia's coastal communities, military preparedness, local and state economies, and marine environment.

BACKGROUND

THE THREAT TO VIRGINIA'S COMMUNITIES

Roughly 230 communities up and down the Atlantic coast have passed anti-drilling resolutions, including major coastal cities like Miami, Savannah, Charleston, Annapolis, and Wilmington. In Virginia dozens of localities along the coast have opposed seismic testing and/or offshore drilling. This includes, among others, the cities of Hampton, Norfolk, Suffolk, Portsmouth, and Virginia Beach; the counties of James City, Isle of Wight, Accomack and Northampton; and the Hampton Roads Planning District Commission which is comprised of elected officials representing each of the 17 localities in Hampton Roads.

In a worst-case scenario, a single oil spill could devastate Virginia's coastal waters and communities. Routine spills and accidents also pose ongoing environmental and health-related risks, as do onshore infrastructure and activities that accompany the offshore oil and gas industry, such as oil refineries, storage facilities, pipelines, and increased traffic. Increased industrialization and pollution of the coast would forever alter the quality of life for Virginia's coastal communities.

The projected increase in the number and intensity of storms – both tropical and nor'easters – is also a significant concern, as severe weather would affect the safe operation of oil field support vessels and aircraft, and hamper any clean-up operations in the event of a spill.

THE THREAT TO OUR NATION'S MILITARY

The Department of Defense (DoD) expressed concerns that drilling off Virginia's coast would interfere with military preparedness. The Hampton Roads Navy bases constitute the largest naval facility in the world and account for 40% of the region's economy. The Virginia Capes Operating Area off the coast provides critical unimpeded access for air, surface, and subsurface training and operations. Likewise, the Air Force utilizes the airspace and conducts air-to-surface training and testing operations off the coast of Virginia. For safety reasons, live weapons testing and training require expansive areas. A DoD report found that nearly three-quarters of the area off Virginia's coast should be off limits to oil and gas exploration because of interference with military operations.

> DRILLING OFF VIRGINIA'S COAST IS INCOMPATIBLE WITH VIBRANT, CLEAN BEACHES AND HEALTHY COASTAL HABITAT AND RESOURCES AS WELL AS THE COMMUNITIES AND ECONOMIES THAT DEPEND ON THEM.

NASA has also expressed concern that drilling structures and increased ship and air traffic would have a significant detrimental effect on launching and testing operations at the aerospace Wallops Flight Facility.

THE THREAT TO LOCAL ECONOMIES AND COASTAL RESOURCES

Tourism, fishing and recreation are booming industries in Virginia. In 2017, tourism revenue reached nearly $25 billion and supported 232,000 jobs. In Virginia's coastal region in 2017, tourism generated $5.2 billion in revenue and $419.9 million in state and local taxes. Additionally, over 48,000 jobs and nearly $1.1 billion in salaries depend on tourism along Virginia's coast.

Because of this, leading tourism associations like the Virginia Beach Restaurant Association; the Virginia Beach Hotel Association; the statewide Virginia Restaurant, Lodging and Travel Association; and others have joined hundreds of local businesses along the Atlantic coast to oppose offshore drilling.

Virginia is the largest seafood producer on the East Coast and the third largest in the United States. Working watermen landed over 363 million pounds of seafood in 2016 with sales over $1.4 billion. Virginia's 50

commercial fishery species — including scallops, crabs, clams, flounder, and striped bass — and 11,000 jobs would be at risk from oil spills and ongoing pollution impacts from drilling.

The negative economic impacts of the 2010 BP Deepwater Horizon oil spill disaster are severe and ongoing, with far reaching consequences that are still being discovered, including devastating economic losses, human health impacts, and harmful effects on marine ecosystems. Impacts to fisheries could total $8.7 billion by 2020. Roughly 10 million user-days of beach, surfing, fishing, and boating activity have been lost, with a projected loss of more than 22,000 jobs in fisheries-related sectors.

CONCLUSION

Drilling off Virginia's coast is incompatible with vibrant, clean beaches and healthy coastal habitat and resources as well as the communities and economies that depend on them. Virginia should seek to protect our coast through both administrative and legislative actions.

POLICY RECOMMENDATIONS

Repeal Virginia Code section §67-300 A and B, which currently expresses support for drilling 50 miles off the Virginia coast.

Protect Virginia's coast by prohibiting seismic exploration, offshore drilling, and drilling infrastructure in Virginia's three nautical-miles of territorial waters.

OIL WASHED ASHORE COVERS THE BOOTS OF AN EMERGENCY RESPONSE WORKER. OIL SPILLS AND ACCIDENTS POSE MANY ENVIRONMENTAL AND HEALTH-RELATED RISKS.
Image credit: Southern Environmental Law Center

TRANSITIONING TO VIRGINIA'S CLEAN ENERGY FUTURE

Ivy Main // Sierra Club, Virginia Chapter | William Cleveland // Southern Environmental Law Center
Hannah Coman // Southern Environmental Law Center | Harrison Wallace // Chesapeake Climate Action Network

INTRODUCTION

A 2018 report from the Intergovernmental Panel on Climate Change (IPCC) clearly states that in order to avoid the most serious impacts of climate change, the world must make rapid, fundamental, and significant changes to the ways we produce and consume energy.

Virginia, has already taken steps to lower our carbon emissions, but the challenge of the climate crisis requires us to do much more, and more quickly. Fortunately, advances in technology make the transition to clean energy not just achievable but affordable, while making our economy stronger and our communities more resilient.

BACKGROUND

Today, about three-quarters of Virginia's electricity supply comes from carbon-emitting fossil fuels, primarily natural gas and coal. The rest is provided by nuclear, biomass, and other fuels, including small amounts of renewable energy. By the 2030's, the Commonwealth must change that equation dramatically to ensure that clean energy[1] provides most of the electricity, and that the Commonwealth is on a pathway to provide 100% of the overall energy supply from clean energy sources by 2050.

Simultaneously, Virginia must also address the costs of this transition and protect customers and the economy from price shocks, paying special attention to low income Virginians and the disproportionate energy burden they bear. Policies must also ensure the continued reliability of the electricity supply, including through distributed generation, demand-response, electricity storage, and advanced grid technologies.

An increasing number of states, including New Mexico, Washington, and Nevada, have committed to transition to clean energy. Those states have concluded that pursuing 100% clean energy is not merely achievable, but it will provide an array of benefits to residents and businesses, from green job creation to reduced health consequences from burning fossil fuels, to greater energy security and resilience in the face of storms and flooding.

Transitioning to 100% clean energy requires: (1) reducing overall electricity consumption through increased deployment of demand-side management and energy efficiency measures, (2) construction of diverse clean energy assets like solar, wind, offshore wind, and large-scale energy storage, and (3) permanently closing the existing carbon-emitting generation fleet.

REDUCING CONSUMPTION OF ELECTRICITY

Since the Great Recession, the relationship between economic growth and electric load growth has diverged. We can now grow Virginia's economy and simultaneously lower customers' bills by increasing customer access to energy savings appliances, lighting, and building insulation. The less energy customers consume, the less they pay (see *Investing in Virginia's Energy Efficiency*, p. 52).

> LOW-INCOME RESIDENTS SPEND A GREATER PERCENTAGE OF THEIR INCOME ON UTILITY BILLS, AND WILL BE DISPROPORTIONATELY AFFECTED IF VIRGINIA'S ENERGY TRANSITION RESULTS IN NEAR-TERM BILL IMPACTS.

New technologies also enable smarter electric rate design. Options like time-of-use rates, where the price paid for electricity varies with when it's used, paired with programmable appliances, thermostats, and machinery, allow customers to choose when they use electricity. These types of innovations allow customers to save money and also flatten out the overall system peaks – which saves customers and utilities money across the entire system.

The Grid Transformation and Security Act of 2018 (GTSA) provided for utilities to make these investments, but the utilities have lagged in how they deploy them. Legislation to better align utility and customer interests could speed up this process. (see *Implementing Effective Grid Transformation*, p. 58).

INVESTING IN VIRGINIA-BASED CLEAN ENERGY

Even with massive expansion of energy efficiency, Virginia will still need power generation. Fortunately, technological improvements have dramatically lowered the costs of clean energy. In fact, solar is the cheapest form of energy, even cheaper than natural gas.

Large facilities will likely provide most new clean energy, and we need policies to ensure these resources are zoned and built in a way that causes the least environmental damage (see *Maximizing Benefits and Minimizing Impacts of Utility-Scale Solar*, p. 88).

The General Assembly should prioritize customer-sited, distributed generation like solar on rooftops, parking lots and closed landfills, using mechanisms such as net metering, set-asides, tax incentives and community solar (see B*reaking Down Barriers to Solar in our Communities*, p. 56). The National Renewable Energy Laboratory estimates that Virginia could provide about 30% of our power through rooftop solar alone, an important consideration given the amount of land required for utility-scale facilities.

CLOSE CARBON-EMITTING POWER PLANTS

In the long run, the energy transition will save money for consumers both in utility bills, as wind and solar continue to get cheaper, and in spending on health care and environmental remediation (such as cleaning up coal ash ponds). In the near term, however, utilities and customers will face costs associated with the closure of fossil fuel facilities and investments in new clean energy sources. Unfortunately, the current regulatory structure is designed to benefit utility shareholders at customer expense. The GTSA stripped the State Corporation Commission of much of its ratepayer protection authority. Legislation should restore, and actually expand, that authority to include tools like securitization, which states like Colorado and New Mexico have adopted to lower the cost of closing outdated coal and gas plants and provide transition funding for communities facing the loss of jobs associated with these closures.

PROTECT LOW-INCOME VIRGINIANS

Low-income residents spend a greater percentage of their income on utility bills and will be disproportionately affected if Virginia's energy transition results in near-term bill impacts.

The General Assembly should help low-income residents achieve total energy cost savings by providing funding and financing tools to spur solar and energy efficiency retrofits in low-income and minority communities, and ensure that members of these communities have access to job training in solar installation and weatherization retrofits.

In addition, legislation should support solar and storage investments for buildings that serve as resiliency hubs for low-income neighborhoods, and for microgrids serving emergency shelters and critical services.

CONCLUSION

Climate change is one of the most pressing problems facing the Commonwealth. Virginia must reduce its carbon output by reducing energy use, increasing clean generation, and closing existing fossil fuel facilities. Fortunately, we can achieve 100% clean energy while ensuring reliability, growing the economy, and protecting low-income families.

POLICY RECOMMENDATIONS

Prioritize energy savings, with a focus on mandatory energy savings targets, peak-shifting and peak-shaving rate designs and programs, stronger building and appliance codes, clarity on when and how utilities may collect lost revenues, and performance incentives for successful savings programs.

Require utility investments in clean energy, including an enforceable near-term percentage target, such as a 50% clean energy standard by 2030.

Direct the Department of Mines, Minerals and Energy, the Department of Environmental Quality, and the State Corporation Commission to begin planning for 100% clean energy.

Prioritize energy storage, offshore wind, and distributed solar, including on homes and apartments of low-income Virginians, and solar-plus-storage on buildings serving as resiliency hubs and emergency shelters.

Restore – and even expand – the SCC's ratepayer protection powers to minimize the customer cost of coal and gas plant retirements through financial tools such as amortization and securitization.

EXPANDING THE CLEAN ENERGY INDUSTRY

Danielle Simms // Virginia League of Conservation Voters

INTRODUCTION

The clean energy industry is booming in the United States. Renewable energy is becoming cheaper to produce and is now more cost-effective than its fossil fuel counterparts. Several states, the District of Columbia, and Puerto Rico have committed to transitioning their energy portfolio to 100% renewable energy sources by 2050. This shift has spurred clean energy workforce development in these states and jump started conversations on how to equitably transition the workforce of the fossil fuel industry to clean energy jobs.

Virginia is also approaching an energy crossroads. With the proper incentives, the Commonwealth can ensure that as we shift from fossil fuels to renewable energy all Virginians have the opportunity to participate in this growing sector.

BACKGROUND

The renewable energy sector employs over three million people in the United States. This is three times more than the roughly one million people who work in the fossil fuel economy. Clean energy job growth grew 3.6% in 2018, netting over 100,00 new jobs and is expected to grow an additional 6% in 2019. Additionally, renewable energy is the fastest growing source of energy generation in the United States. The U.S. Bureau of Labor Statistics projects that the two fastest growing jobs until 2026 will be solar installers and wind technicians.

Currently, Virginia is #10 in the number of clean energy jobs, with more than 78,000 Virginians working in the industry. Of that figure, 5,000 are clean vehicles jobs, over 4,000 are solar jobs, and more than 600 are wind jobs. Already, demand for wind turbine technicians will grow by 96% by 2026, while demand for solar photovoltaic installers will grow by 105% in the same time.

With a port, offshore wind potential, communities yearning for economic development, and a strong veteran workforce, Virginia is primed to be a leader in the clean energy economy. To ensure that the Commonwealth's workforce can fully benefit from the new energy economy, Virginians need the training and experience to be competitive in the marketplace.

> RENEWABLE ENERGY IS THE FASTEST GROWING SOURCE OF ENERGY GENERATION IN THE UNITED STATES. THE U.S. BUREAU OF LABOR STATISTICS PROJECT THAT THE TWO FASTEST GROWING JOBS UNTIL 2026 WILL BE SOLAR INSTALLERS AND WIND TECHNICIANS.

Investing in the clean energy economy, can be achieved several ways including training & education programs, apprenticeships, and tax incentives for companies.

TRAINING & EDUCATION

Community colleges across Virginia offer courses on renewable energy, with some offering boot camps or certifications to prepare students to install renewable systems. As Virginia expands these renewable energy programs and trainings, processes and procedures should be implemented to prioritize minority-serving institutions and areas impacted by fossil fuel extraction and power generation.

APPRENTICESHIP PROGRAMS

According to the American Jobs Project, apprenticeship programs can produce more than $27 in tax returns for every $1 invested by the state over the career of an apprentice. For example, South Carolina established an apprenticeship program offering companies $1,000 in state tax credits per apprentice (employed for at least 7 months) per year for up to 4 years. The system has trained over 30,000 apprentices, and has seen measured growth of over 100 new apprentices per month. The program was recognized by the US Department of Labor as a national model for state agency workforce development partnership.

TAX INCENTIVES

Virginia provides a green job creation tax credit. While this tax incentives is valuable, other options exist to further spur recruitment of new businesses to the Commonwealth, including establishing an Anchor Institution Tax Credit. With this tax credit, if a renewable energy manufacturer is responsible for bringing a company from the renewable supply chain to the state, then the referring company would receive a tax credit if the other entity established operations in Virginia. You can view more tax incentives at the Database of State Incentives for Renewables & Efficiency (DSIRE).

For each of these investments, it is critical Virginia look to diversifying the renewable energy workforce. A recent report found that white males account for 80% of solar executives, 73% of the workforce is male, and 74% of the workforce is white. Additionally, most solar energy jobs are concentrated in the eastern parts of the state. Residents of Virginia's south and southwest working to transition away from the fossil fuel economy are not benefiting from the growth of the solar workforce. With the industry continuing to grow, Virginia should ensure that the workforce and its leadership is representative of the geographic, socioeconomic, and racial diversity of the Commonwealth.

CONCLUSION

Virginia should invest more in the clean energy economy in order to meet Virginia's energy demands completely with clean energy and spur job growth in the Commonwealth. As more businesses relocate to Virginia with pledges to power their companies by clean energy – such as Amazon's pledge to use 100% renewables - we must be equipped with the clean energy workforce in the Commonwealth

POLICY RECOMMENDATIONS

Establish a statewide framework that provides clean energy jobs education and training with an emphasis in communities left behind in the fossil fuel industry, low-income communities, and communities of color:

- Develop a clean energy jobs curriculum at community colleges focused on critical growth areas such as buildings, energy, engineering, environment, and transportation;
- Expand Military2Manufacturing to train veterans for advanced manufacturing careers; and,
- Establish a Foundation Liaison role within the Governor's Administration to leverage grant makers to spur recruiting new businesses, job creation and workforce development

Use Virginia's tax code to incentivize investments in job creation in the clean energy economy:

- Protect Virginia's Green Job Tax Credit program;
- Create an apprenticeship tax credit program predominantly in fossil fuel communities, low income communities, and communities of color to train and educate the communities most affected by fossil fuels, energy burden, and environmental health concerns; and,
- Entice more companies (and thus clean energy jobs) to come to Virginia by creating an Anchor Institution Tax Credit to bolster the solar and offshore wind industry.

WORKERS INSTALLING A SOLAR CELL ON A ROOF..
Image credit: Shutterstock

ENDNOTES

INVESTING IN VIRGINIA'S ENERGY EFFICIENCY

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OFFSHORE WIND: MADE IN VIRGINIA

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[2] http://wind.jmu.edu/offshore/

TRANSITIONING TO VIRGINIA'S CLEAN ENERGY FUTURE

[1] "Clean energy" resources are zero-carbon, non-nuclear sources like solar, wind, and battery storage.

EXPANDING THE CLEAN ENERGY INDUSTRY

For more information:
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CONSERVING VIRGINIA'S NATURAL LANDSCAPES

5

EXECUTIVE SUMMARIES AND CONTACT INFORMATION

LEGISLATIVE POINTS OF CONTACT

Pat Calvert
Policy and Campaigns Manager, Water and Land Conservation
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ACHIEVING TWO PERCENT FOR NATURAL RESOURCES

Virginia's natural resource agencies have and continue to do great work. By increasing the percentage of the general fund spent on natural resources to 2%, we will be able to strengthen and continue the progress we have made toward cleaner air and water, healthier soils, improved habitats for fish and wildlife, and more lands for the citizens of the Commonwealth to enjoy.

Zachary Sheldon // The Nature Conservancy // zachary.sheldon@tnc.org
Anna Killius // James River Association // akillius@jrava.org
Danielle Simms // Virginia League of Conservation Voters // dsimms@valcv.org

EXPLORING DEDICATED FUNDING FOR CONSERVATION

While Virginia's existing programs have achieved many successes, insufficient and inconsistent funding levels impede our efforts and threaten the progress we have made. States across the country have implemented a variety of funding mechanisms, as well as different ways to direct the additional revenues. It is time that Virginia begins to take a serious look at what options are viable within the Commonwealth and where the revenues would be best spent.

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

PROTECTING VIRGINIA'S LANDSCAPES

Virginia needs to step up its investments in land conservation. Otherwise, Virginia will continue to lose the lands that support the backbone of Virginia's economy: agriculture, forestry and tourism. Without providing additional funding, Virginia will miss out on the opportunity to grow the 197,000 jobs that depend on our existing outdoor recreation industry.

Dan Holmes // Piedmont Environmental Council // dholmes@pecva.org
Nikki Rovner // The Nature Conservancy // nrovner@tnc.org
Kate Wofford // Alliance for the Shennandoah Valley // kwofford@shenandoahalliance.org

PROTECTING HISTORIC AND CULTURAL RESOURCES

Virginia hosts a rich array of historic, archaeological, and cultural resources, arguably more than any other state. From Chief Powhatan's capital at Werowocomoco and the Jamestown colony, to the battlefields of the Revolutionary War, War of 1812, and Civil War, to under-recognized historic African American schools and cemeteries and sites related to the struggle for Civil Rights, these places tell the story of our Commonwealth and our nation. Protecting these resources is essential to what makes Virginia a great place to live, work, and visit, and supports the Commonwealth's two largest industries, agriculture and tourism.

John D. Hutchinson // Shenandoah Valley Battlefields Foundation // jhutch@svbf.net
Adam Gillenwater // American Battlefield Trust // agillenwater@battlefields.org
Elizabeth Kostelny // Preservation Virginia // ekostelny@preservationvirginia.org

ENSURING RIGHTFUL PROPERTY OWNERSHIP THROUGH THE UNIFORM PARTITION OF HEIRS PROPERTY ACT

It is recommended that the UPHP be adopted as a separate, parallel statute that applies only when the property to be partitioned meets the definition of "heirs property" contained in the UPHPA. The old law would continue to apply to all other partition actions.

Ebonie Alexander // Black Family Land Trust // ebonie@bflt.org
Parker Agelasto // Capital Regional Land Conservancy // parker@capitalregionland.org

INCREASING ACCESS TO TRAILS AND OUTDOOR RECREATION

Every dollar spent building and maintaining trails, making bike lanes safer, and making parks of any kind more accessible to the public is an investment with significant return. Coordinating the vast outdoor recreation assets of the Commonwealth, marketing them effectively and ensuring access for all takes resources. The Department of Conservation and Recreation must be provided with these resources to effectively empower and support local communities.

Andrew Downs // Virginia Trails Alliance // adowns@appalachiantrail.org
Champe Burnley // Virginia Bicycling Federation // champe_burnley@hotmail.com

MAXIMIZING BENEFITS AND MINIMIZING IMPACTS OF UTILITY-SCALE SOLAR

Now that Virginia has set the wheels in motion for increased use of utility-scale solar, it is important that policymakers have the foundation for best practices to maximize the benefits and minimize the impacts.

Dan Holmes // Piedmont Environmental Council // dholmes@pecva.org
Hannah Coman // Southern Environmental Law Center // hcoman@selcva.org

ACHIEVING TWO PERCENT FOR NATURAL RESOURCES

Zachary Sheldon // The Nature Conservancy | Anna Killius // James River Association
Danielle Simms // Virginia League of Conservation Voters

INTRODUCTION

From the rugged Appalachian Mountains and the fertile Piedmont to the tidal rivers over the Coastal Plain and the Chesapeake Bay, Virginia is one of the most ecologically diverse landscapes on the east coast. And it is also one of the most pressured.

Over the last 50 years Virginia's population has doubled to more than 8 million citizens. With this growing population, the demands on the Commonwealth's land and water have never been greater. In the spring of 2018, Governor Northam made a bold commitment to address this growing pressure, pledging to increase Virginia's investment in its natural resources to 2% of the general fund. The crafting of the 2020-2022 budget is the perfect opportunity to achieve this ambitious but much-needed goal. Specific funding requests for land conservation programs, water quality restoration, environmental justice efforts, public transit, and outdoor recreation can be found throughout *Our Common Agenda*. In addition to these requests, we urge Virginia's policymakers to ensure our natural resources agencies receive full funding.

BACKGROUND

On April 4, 2018, the Governor issued Executive Order 6, requiring Virginia's Department of Environmental Quality (DEQ) to conduct a comprehensive review of all permitting, monitoring, and enforcement activities for gaps in resources or authority to better protect clean air and water and to promote the health and well-being of the Commonwealth. This report, while specific to DEQ, is indicative of the unmet needs that restrict the capacity of all of Virginia's natural resource agencies.

Funding recommendations for specific land conservation, water quality, environmental justice, outdoor recreation, and sustainable development programs can be found throughout *Our Common Agenda*. In addition to these recommendations, the administration should bolster funding for its natural resource agencies, whose budgets have not recovered since the Great Recession. Increased funding to state agencies will allow for the expansion of wildlife recovery efforts, enforcement of environmental regulations that safeguard people and nature, better maintenance trails, and improved access to our public lands.

Allocating a larger portion of existing revenues to natural resource programs is one way to reach the goal of 2%. Another avenue the administration and General Assembly should begin to explore is the creation of dedicated revenue streams for natural resources (see *Exploring Dedicated Funding for Conservation*, p. 76).

APPLICATION PROCESSING

From leases to permits and grant awards, Virginia's state agencies process thousands of applications each year. Understaffing, however, hurts agency capacity and slows down the process, placing undue burdens and costs onto applicants as they await necessary approvals. For example, Virginia's Soil and Water Conservation Districts currently have a backlog of 45 Conservation Assistance projects worth $366,000 and in past years, the backlog has ballooned to $700,000. Additional funding would help Districts and other agencies increase their capacity and better facilitate project approvals, helping meet the needs of the Commonwealth.

> BUDGET CUTS AND STAFF REDUCTIONS HAVE UNDERMINED AGENCIES' ABILITY TO PROTECT THE COMMONWEALTH AND ITS UNDERSERVED COMMUNITIES FROM PRACTICES THAT MAY HARM OUR ENVIRONMENT AND OUR PUBLIC HEALTH.

MONITORING/COMPLIANCE

Budget cuts and staff reductions have undermined agencies' ability to protect the Commonwealth and its underserved communities from practices that may harm our environment and our public health. All Virginians deserve clean air, clean water, and strong communities where they can enjoy and appreciate our natural resources. Restored and sustained funding for monitoring and compliance activities can mean more air and water quality monitoring, better education and outreach programs, and improved data analysis to support environmental health across the Commonwealth.

ENFORCEMENT

State natural resources agencies are relied upon to enforce environmental protections and find bad actors that place the future of our natural resources at risk. To that end, it's imperative that these agencies have the funding resources they need to protect the health and well-being of all communities by holding violators

accountable for threatening our clean air, clean water, native habitats, and economically and ecologically critical wildlife.

MAINTAINING LANDS

After land protections are in place, there is the need for ongoing active management of the resource to maintain and enhance the natural and recreational values of the land. The work required ranges from invasive species management, prescribed burns, facility and trail maintenance, and much more. Unfortunately, agencies currently lack the capacity to meet the increased demands placed on the land. Additional resources are needed to combat shortages in manpower and operating funds and ensure that necessary field work is completed.

CONCLUSION

Virginia's natural resource agencies have and continue to do great work. By increasing the percentage of the general fund spent on natural resources to 2%, we will be able to strengthen and continue the progress we have made toward cleaner air and water, healthier soils, improved habitats for fish and wildlife, and more lands for the citizens of the Commonwealth to enjoy.

POLICY RECOMMENDATIONS

Uphold Governor Northam's pledge to invest 2% of general funds in Virginia's natural resources by fully funding land conservation, water quality, environmental justice, outdoor recreation and sustainable development programs as recommended throughout *Our Common Agenda*, as well as providing increased funding to Virginia's natural resource agencies in the 2020-2022 budget.

RHODODENDRONS BLOOMING ON TOP OF THE BLUE RIDGE PARKWAY IN SOUTHWEST VIRGINIA.
Image credit: Shutterstock

EXPLORING DEDICATED FUNDING FOR CONSERVATION

Zachary Sheldon // The Nature Conservancy

INTRODUCTION

Virginia's Constitution charges it "to protect its atmosphere, lands, and waters from pollution, impairment, or destruction, for the benefit, enjoyment and general welfare of the people of the Commonwealth". Despite this, Virginia's investment into its natural resources has been inconsistent and significantly lower than its peers, averaging less than 1% of its total budget towards natural resources.

This insufficient and unreliable funding makes it difficult to properly manage and protect our natural wonders. Other states have established a variety of revenue sources dedicated to natural resources to aid their conservation efforts. With a stated goal of increasing the percentage of the general fund spent on natural resources to 2% (see *Achieving Two Percent for Natural Resources*, p. 74), it is time for Virginia to begin considering dedicated natural resource revenue streams of its own.

BACKGROUND

SALES TAX

By either dedicating a portion of the existing sales tax or by increasing the tax, typically 1/8th of 1%, and dedicating the additional revenue to natural resources, some states have found consistent revenue streams to bolster their conservation efforts.

New Jersey. In 1998, New Jersey citizens approved a constitutional amendment which dedicated $98 million of the existing state sales tax revenue annually to the Garden State Preservation Trust.[1] The Trust is tasked with acquiring and preserving open space, farmland, and historic sites around the state. Through 2018 the Trust has protected over 440,000 acres.[2]

Missouri. In 1976, Missourians passed a constitutional amendment that dedicated 1/8th of 1% of the existing sales tax to the state's Department of Conservation. In 2015, this provided $110 million in revenue.[3] In 1984, Missourians again passed a constitutional amendment, this time dedicating 1/10th of 1% of the existing sales tax to fund state parks and soil and water conservation efforts. This tax must be reauthorized by voters every 10 years. It generates ~$90 million a year and has been reauthorized 4 times.[4]

Minnesota. In 2008, voters approved a constitutional amendment increasing the sales tax by 3/8th of 1% until 2034 and dedicate the revenue to the Minnesota Legacy Fund. The Fund puts the revenue into four funds: 33% to the Clean Water Fund; 33% the Outdoor Heritage Fund; 19.75% the Arts and Cultural Heritage Fund; and 14.25% to the Parks and Trails Fund.[5]

Arkansas. Voters approved a constitutional Amendment in 1996, dedicated a portion of the existing sales tax for land conservation. Revenue is split between the state Game & Fish Department and the State Parks Department. This provides $40 to $60 million annually.

OUTDOOR GOOD SALES TAX

Rather than dedicating a portion of all sales tax to fund conservation efforts, some states have instead dedicated only portions of the sales tax collected on outdoor goods, such as backpacks and other hiking gear. At this time no state has increased the sales tax on outdoor goods specifically to fund conservation efforts.

> VIRGINIA'S CONSTITUTION CHARGES IT "TO PROTECT ITS ATMOSPHERE, LANDS, AND WATERS FROM POLLUTION, IMPAIRMENT, OR DESTRUCTION, FOR THE BENEFIT, ENJOYMENT AND GENERAL WELFARE OF THE PEOPLE OF THE COMMONWEALTH"

Texas. In 1993 Texans dedicated a portion of the sales tax on outdoor goods to fund their state park system, with the majority of revenue going towards park operations and maintenance. The tax generates over $100 million per year.[6]

Georgia. In 2018, Georgia voters established the Georgia Outdoor Stewardship Fund and dedicated up to 80% of the existing sales tax on outdoor recreation equipment towards the conservation of priority lands, stewardship of state parks and wildlife management areas, and the support of local parks and preserves.[7] It is estimated to generate around $20 million a year.[8]

WILD PONIES AT GRAYSON HIGHLANDS STATE PARK IN JEFFERSON NATIONAL FOREST, VIRGINIA.
Image credit: Shutterstock

LOTTERY PROCEEDS

Other states have looked towards lottery proceeds as a way to bolster funding for conservation, dedicating a portion of the lottery funds to natural resource programs.

Oregon. In 1998, voters passed a constitutional amendment dedicating 15% of lottery proceeds to the Parks and Natural Resources Fund, split evenly to support state parks and watershed enhancement/ salmon restoration. In 2010, voters reaffirmed this commitment in perpetuity. Proceeds are expected to generate over $1.74 billion in the next twenty years.

Colorado. In 1992, Colorado voters approved a constitutional amendment dedicating a portion of lottery proceeds to the Great Outdoors Colorado Trust Fund for the preservation, protection, enhancement, and management of the state's wildlife, park, river, trail, and open space heritage. In FY 2018 the Fund received over $66 million.[9]

TRANSFER TAX

One of the most common funding sources for conservation is a real estate transfer tax, where the state levies a tax on transfers of real property.

Maryland. In 1969 Maryland established a .5% property transfer tax to fund Program Open Space, which acquires and develops state and local parks and preserves unique natural areas, farmlands, and local resource lands through easements.[10] This has protected over 390,000 acres of land and awarded more than 6,000 grants to local governments.[11]

Delaware. In 1990, Delaware began providing a portion of its real estate transfer tax to its Open Space Program, with the mission to protect and conserve all forms of natural and cultural resources, protect plant and wildlife habitat, connect existing open spaces, expand existing parks, provide outdoor recreation, and allow for water conservation. From 1990 to 2016, nearly $123 million was provided from the tax, preserving nearly 60,000 acres across the state.[12]

CONCLUSION

While Virginia's existing programs have achieved many successes, insufficient and inconsistent funding levels impede our efforts and threaten the progress we have made. States across the country have implemented a variety of funding mechanisms, as well as different ways to direct the additional revenues. It is time that Virginia begins to take a serious look at what options are viable within the Commonwealth and where the revenues would be best spent.

POLICY RECOMMENDATIONS

Begin examining different dedicated funding mechanisms for natural resource conservation, considering not only the economic and conservation costs and benefits, but also each mechanisms' impacts on the communities and people who would most likely bear the majority of the expense for each mechanism.

PROTECTING VIRGINIA'S LANDSCAPES

Dan Holmes // Piedmont Environmental Council | Nikki Rovner // The Nature Conservancy
Kate Wofford // Alliance for the Shenandoah Valley

INTRODUCTION

Successful land conservation requires action at all levels to protect the Commonwealth's working farms and forests, scenic landscapes, natural areas, wildlife habitat, historic resources, and parks and recreational areas. As our population continues to grow, we must continue to grow the number of opportunities Virginians and visitors alike have to access these assets.

Land conservation is critical in achieving measurable goals on protecting water quality, water supply, climate resiliency, and the Chesapeake Bay.

While Virginia offers a variety of programs, there are untapped opportunities available through federal funding, local government programs, and private philanthropic efforts that can bolster our current approaches and aid in delivering lasting results across the Commonwealth.

BACKGROUND

This year marked the 20th anniversary of the passage of the Land Preservation Tax Credit (LPTC) and the Virginia Land Conservation Foundation (VLCF). Both have been incredibly effective land conservation tools. We should be proud of these tools and work to protect and fully fund them. We know Virginians support land conservation. They have said in surveys, polls, and at the ballot box that they want the Commonwealth to invest in the protection of open space. Yet according to the U.S. Census Bureau, Virginia's natural resource investments significantly trail other southeastern and mid-Atlantic states.

The LPTC encourages private 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. Landowners with lower incomes who are unable to use all of their tax credits may transfer unused but allowable credits to other taxpayers. Support for this program was evident during the 2017 Virginia General Assembly session, where legislation that would have significantly scaled back the program was soundly defeated after strong citizen opposition.

Not all projects can be accomplished through the LPTC. The General Assembly addressed this need by requiring the Governor to appropriate funds for three existing conservation programs. Unfortunately, we have yet to see funding levels match what is required by state code.

CONSERVATION GRANT PROGRAMS

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. This program leverages local and federal investment by paying no more than 50% of the cost of projects (other than state agency projects).

> LAND CONSERVATION IS CRITICAL IN ACHIEVING MEASURABLE GOALS ON PROTECTING WATER QUALITY, WATER SUPPLY, CLIMATE RESILIENCY, AND THE CHESAPEAKE BAY.

Projects are weighted on criteria such as a priority in the Virginia Outdoors Plan or local comprehensive plan; water quality value; and public access. Projects receive more points if they provide riparian buffers. At least 50% of funding must be used for projects with public access. Unfunded projects represent a lost opportunity for the Commonwealth to capture an estimated $60 million in federal, local, and private matching dollars for land conservation.

NEW OPPORTUNITIES FOR FEDERAL FUNDING

The recent passage of the Farm Bill and the permanent reauthorization of the Land and Water Conservation Fund offer new funding opportunities. Virginia should fund fully VLCF and the Virginia Farmland Preservation Fund in order to access these federal funds.

The Farm Bill provides $450 million a year to the Agriculture Conservation Easement Program (ACEP). These funds are available to assist with the purchase of easements that protect the agricultural use and conservation of eligible farmlands, as well as wetland easements. Matching funds are required to apply, and Virginia has not made funding available at a level to be competitive with other states. Over the past five years, Virginia ranks 46th in ACEP funding received.
The Virginia Farmland Preservation fund requires counties to match dollar for dollar the amount that is

granted to them by the Commonwealth. In FY 2019, this grant program will receive only 12.5% ($250,000) of the funding called for in state code.

During the 2019 General Assembly Session, VLCF funding was significantly reduced because of a misunderstanding of the purpose and effect of recent mitigation agreements. Mitigation funds are designed to offset unavoidable, adverse impacts of particular projects on specific natural and historic resources, and they do not replace the need to provide appropriations for the programs' statewide commitments.

With battlefields scattered across the Commonwealth, preservation of these sites remains a challenge. Continued support for the Virginia Battlefield Preservation Fund is the best way to meet this challenge. Funding in FY 2019 is 50% ($1M) of what is called for in state code.

STEWARDSHIP OF PROTECTED LANDS

Virginia's conservation agencies and land trusts are tasked with acquiring, holding, maintaining, and stewarding conservation easements for the Commonwealth. Lawmakers decided stewardship was an important part of its land investment when a 2% transfer fee from the LPTC was directed to stewardship and management. But, a portion of this funding has regularly been diverted to the General Fund. Money that is being diverted to the General Fund could make a significant difference in the stewardship work agencies, local government, and land trusts do.

The Northam administration has announced a strategy for land conservation, aiming to preserve the next 10% of the Commonwealth's land resources with significant conservation value over a 10-year period. To help direct efforts to achieve that goal, the administration created 'ConserveVirginia', a map that seeks to highlight lands with the highest conservation value. The conservation community believes that for ConserveVirginia or any land conservation strategy, to be effective, increased funding must be a critical objective.

CONCLUSION

Virginia needs to step up its investments in land conservation. Otherwise, Virginia will continue to lose the lands that support the backbone of Virginia's economy: agriculture, forestry and tourism. Without providing additional funding, Virginia will miss out on the opportunity to grow the 197,000 jobs that depend on our existing outdoor recreation industry.

POLICY RECOMMENDATIONS

Land Preservation Tax Credit

- No changes should be made to the Land Preservation Tax Credit (LPTC), a proven and effective land conservation tool; and,
- The entire 2% of the transfer fee should go to managing the LPTC and stewardship of protected land; no amount should be diverted to the general fund.

Virginia's Land Conservation Grant Programs

- $16 million for the Virginia Land Conservation Foundation;
- $2 million for Virginia Farmland Preservation Fund; and
- $2 million for the Virginia Battlefield Preservation Fund

State Park and Natural Areas

- In 2017, the General Assembly for the first time included restrictions in the state budget that limit where the Department of Conservation and Recreation (DCR) can acquire land. This unnecessarily ties the hands of DCR and could prohibit the acceptance of important lands. These restrictions should be removed in the 2020 budget.

FOGGY AUTUMN VIEW OF A FARM ALONG THE BLUE RIDGE PARKWAY IN VIRGINIA.
Image credit: Shutterstock

FOGGY AUTUMN VIEW OF A FARM ALONG THE BLUE RIDGE PARKWAY IN VIRGINIA.
Image credit: Shutterstock

PROTECTING HISTORIC AND CULTURAL RESOURCES

John D. Hutchinson // Shenandoah Valley Battlefields Foundation | Adam Gillenwater // American Battlefield Trust
Elizabeth Kostelny // Preservation Virginia

INTRODUCTION

Virginia hosts a rich array of historic, archaeological, and cultural resources, arguably more than any other state. From Chief Powhatan's capital at Werowocomoco and the Jamestown colony, to the battlefields of the Revolutionary War, War of 1812, and Civil War, to under-recognized historic African American schools and cemeteries and sites related to the struggle for Civil Rights, these places tell the story of our Commonwealth and our nation. Protecting these resources is essential to what makes Virginia a great place to live, work, and visit, and supports the Commonwealth's two largest industries, agriculture and tourism.

BACKGROUND

Virginia has a number of tools that serve to protect our historic, archaeological, and cultural resources. Broadly speaking, these include:

- Land conservation through the Virginia Battlefield Preservation Fund (VBPF), Virginia Land Conservation Foundation (VLCF), and Land Preservation Tax Credits (LPTC);
- Virginia Historic Rehabilitation Tax Credit Program (HRTC); and
- Section 106 of the National Historic Preservation Act of 1966, which is administered by Virginia Department of Historic Resources (DHR).

While these programs are targeted toward the protection of historic resources, they also play a key role in protecting the environment. In the Chesapeake Bay watershed for example, conservationists have worked to save tens of thousands of acres of battlefield land, helping to support agriculture, improve water and air quality, reduce erosion, and provide habitat for native plants and wildlife. These programs also help to make our cities and towns more livable and economically vibrant through the protection of open space and encouragement of heritage tourism.

LAND CONSERVATION

Conservation of historic land and buildings is supported by two competitive grant programs (VBPF and VLCF) and the Land Preservation Tax Credit (LPTC). The VBPF is targeted to land fought over during the Revolutionary War, War of 1812, and Civil War. Virginia is home to 122 nationally significant Civil War battlefields as identified by the federal government – more than any other state – as well as nine Revolutionary War and four War of 1812 battlefields. Historically, Virginia's battlefields encompassed one million acres, but when the National Park Service last surveyed them in 2009, only 576,000 acres of these landscapes remained, and only 13 percent of that remaining acreage was permanently protected by government and private nonprofit organizations.

Since VBPF's creation in 2006, $17.5 million in grants awarded by the state have helped to preserve 8,542 acres of battlefield land worth more than $90 million, representing a greater than 5-to-1 return on the state's investment. That includes recent grants to save critical acreage at Yorktown that figured in the October 1781 siege that secured American independence, and at the New Market Heights battlefield where 14 United States Colored Troops earned the Congressional Medal of Honor, the greatest number awarded to African-American soldiers for any battle of the Civil War.

> VIRGINIA IS HOME TO 122 NATIONALLY SIGNIFICANT CIVIL WAR BATTLEFIELDS AS IDENTIFIED BY THE FEDERAL GOVERNMENT – MORE THAN ANY OTHER STATE – AS WELL AS NINE REVOLUTIONARY WAR AND FOUR WAR OF 1812 BATTLEFIELDS.

As development continues at a breakneck pace, increasing VLCF and VBPF funding is of critical importance to help protect hallowed ground from the Revolutionary War, War of 1812, and Civil War that is being lost at an alarming rate, and in doing so ensure that Virginia does not miss out on millions of dollars in federal matching grants for battlefield preservation administered by the National Park Service's American Battlefield Protection Program (see *Exploring Dedicated Funding for Conservation*, p. 76.).

A further, specific opportunity to protect and promote Virginia's historic and cultural resources for current and future generations exists in Culpeper County, Virginia. At Brandy Station and Cedar Mountain battlefields, dedicated conservationists, utilizing programs including VBPF and VLCF, have preserved approximately 1,400 acres of hallowed ground that, if added to the Virginia State Parks system, would

help to increase opportunities for public access and interpretation, while also filling in a gap in a region that at present is not directly served by the state park system.

VIRGINIA HISTORIC REHABILITATION TAX CREDIT (HRTC)

The HRTC provides a dollar-for-dollar reduction in state income tax liability for the rehabilitation of historic buildings. Since its inception, the HRTC has been a catalytic community redevelopment and economic development tool for urban and rural communities across the Commonwealth – it ensures that a building's historic architectural features and spaces are preserved, while modernizing the structure's use and spurring potential investment in the surrounding neighborhood. The program provides an income tax credit of up to 25 percent of qualified rehabilitation expenditures, according to a new report from Preservation Virginia.

Virginia's HRTC can be matched by federal rehabilitation tax credits. According to the National Park Service, Virginia consistently ranks in the top five nationally for utilization of federal historic tax credits. From 2002 to 2016, Virginia leveraged more than $630 million in federal historic tax credits from 1,286 projects. These projects had total development costs of more than $3.79 billion. Despite the success of the HRTC, a number of bills in recent General Assembly sessions have sought to trim, sunset or eliminate this critical preservation tool. Although most of these bills have been defeated, in light of the success of the HRTC, advocates need to be prepared to respond to suggestions of further caps or cuts to the program by sharing the economic return on the Commonwealth's investment.

SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT

DHR is responsible for administering Section 106 of the National Historic Preservation Act (NHPA), which requires federal agencies to take into account the effects of their undertakings—including any funding or permit—on historic resources. DHR is extremely challenged, given current staffing limits, in adequately administering this important law. For instance, only one staff position is dedicated to review of all federally funded transportation projects. Threats posed by utility corridors such as the Mountain Valley Pipeline, the Atlantic Coast Pipeline, and the transmission line across the James River also have stretched DHR's capacity. Additionally, the VCRIS (Virginia Cultural Resource Information System) serves as the Department's online cultural resource inventory.

AFRICAN AMERICAN RESOURCES

For too long, African American schools, cemeteries, and other historic resources have received inadequate protection. In recent years, the General Assembly passed several bills that help identity and fund the preservation of African American cemeteries. The Historical African American Graves and Cemeteries Fund was expanded during the 2018 and 2019 sessions to include additional cemeteries that qualify for this funding. Another bill was passed that establishes an effort to identify and document sites statewide. Additionally, federal funding through the Underrepresented Communities Grant Program is administered by DHR to help support projects related to surveying and nominating African American and Native American sites for inclusion in the National Register of Historic Places.

250TH ANNIVERSARY OF THE AMERICAN REVOLUTION

With the Semiquincentennial of the American Revolution fast approaching, and with Virginia home to many of the historic sites that defined that conflict, including battlefields such as Yorktown, it is only fitting that the Commonwealth take a lead role in what is sure to be a significant national celebration. RevolutionaryVA250, a coalition of nonprofit history organizations in Virginia working under the coordination of the Virginia Museum of History and Culture, has begun planning for the Commonwealth's commemoration of our nation's founding. This important anniversary provides an opportunity to showcase diverse stories from across the Commonwealth, as was done so successfully for the sesquicentennial of the American Civil War, when more than 3.4 million people attended local 150th anniversary events across the state.

POLICY RECOMMENDATIONS

Secure funding for VLCF and VBPF at $16 million and $2 million, respectively; establish new state park at Brandy Station and Cedar Mountain battlefields.

Remove the cap of $5 million per project for HRTC projects, and oppose any further efforts to cap or weaken the HRTC program.

Provide increased funding for DHR's administration of Section 106 of the National Historic Preservation Act; require that project proponents fully fund DHR's cost, including the funds to ensure the accuracy and completeness of data in the VCRIS system.

Provide increased funding for the identification and protection of African American historic resources; and

Explore state commemorative commission opportunities for the 250th anniversary of the American Revolution.

ENSURING RIGHTFUL PROPERTY OWNERSHIP THROUGH THE UNIFORM PARTITION OF HEIRS PROPERTY ACT

Ebonie Alexander // Black Family Land Trust | Parker Agelasto // Capital Regional Land Conservancy

INTRODUCTION

Heir property refers to land that has been passed down informally from generation-to-generation. In most cases, it involves landowners who died without a will and the land is owned "in common" by all of the heirs, regardless of whether they live on the land, pay the taxes, or have ever set foot on the land.

More than 900,000 black-owned farms comprised 14 percent of all farms in the US in 1920 yet the number of black-owned farms dropped 95 percent to under 46,000 in 1974. Researchers at Auburn and Tuskegee Universities estimate that there are between 150,000 to 175,000 acres of heirs' property owned by people of any race or ethnicity in the 36 Black Belt counties in Virginia and that this property conservatively is valued at $650 million.

The rate of intestacy among African-Americans is more than double the rate of intestacy among white Americans and only about twenty percent of African-Americans have wills. Heir property therefore continues to be the leading cause of Black involuntary land loss.

BACKGROUND

The Uniform Partition of Heirs Property Act (UPHPA), a project that the American Bar Association's Section of Real Property, Trust and Estate Law helped convince the Uniform Law Commission to undertake in 2007, seeks to address partition action abuses that have led many Americans to lose their tenancy-in-common property involuntarily in various legal proceedings. The UPHPA preserves the right of a co-tenant to sell his/her interest in inherited real estate, while ensuring that the other co-tenants will have the necessary due process, including notice, appraisal, and right of first refusal, to prevent a forced sale. If the other co-tenants do not exercise their right to purchase property from the seller, the court must order a partition in kind if feasible, and if not, a commercially reasonable sale for fair market value. Heirs property disproportionately impacts middle and low income families and communities that do not have access to affordable legal services.

This UPHPA has passed in 13 other states - including Alabama, Arkansas, Connecticut, Georgia, Hawaii, Iowa, Illinois, Missouri, Montana, Nevada, New Mexico, Texas and South Carolina. Legislation is pending action in the District of Columbia and New York where support seems strong. States that have adopted the UPHP Act have reported no fiscal impact. One of the reasons why this matters now is that in the 2018 Farm Bill, there is language that allows USDA dollars to be used to resolve heir's property if the property is in one of the states that has adopted the UPHP Act; allowing landowners the ability to fully participate in federal and state programs.

> HEIRS PROPERTY DISPROPORTIONATELY IMPACTS MIDDLE AND LOW INCOME FAMILIES AND COMMUNITIES THAT DO NOT HAVE ACCESS TO AFFORDABLE LEGAL SERVICES.

Adoption of the UPHPA would require the court to determine at the outset of a partition action whether the property involved meets the act's definition of heirs property. If so, the following special procedures are triggered:

- The court must obtain an independent appraisal of the property with the value based on the full, undivided parcel;
- Any one or more co-tenants, except the co-tenant who filed for partition, has a right of first refusal to purchase the share of the property owned by the filer for a proportional share of the court-determined value;
- If no co-tenant exercises the right of first refusal, the court must order partition-in-kind unless the court determines that partition-in-kind will result in great prejudice to the co- tenants as a group;
- In making its determination under #4, the court must consider a set of statutory factors that includes a co-tenant's sentimental attachment to the property because of ancestral or other special value; and,
- If the court determines partition-by-sale is appropriate, the property must be offered for sale on the open market at the court-determined value for a reasonable period of time. If the property does not sell at the offered price, the court retains discretion to accept a lower offer or to order a sale by auction or sealed bids.

UPHPA is designed to protect heirs who may be unaware of their property rights and their vulnerability as co-tenants to partition. But nothing in UPHPA prevents co-tenants from reaching agreement

voluntarily to sell their shares, or from executing a partition agreement.

CONCLUSION

It is recommended that the UPHPA be adopted as a separate, parallel statute that applies only when the property to be partitioned meets the definition of "heirs property" contained in the UPHPA. The old law would continue to apply to all other partition actions.

POLICY RECOMMENDATIONS

Virginia Should pass the Uniform Partition of Heirs Property Act.

Work to resolve Heir Property issues.

BARN, TREE, AND VIEW OF THE APPALACHIANS IN THE SHENANDOAH VALLEY, VIRGINIA.
Image credit: Shutterstock

INCREASING ACCESS TO TRAILS AND OUTDOOR RECREATION

Andrew Downs // Virginia Trails Alliance | Champe Burnley // Virginia Bicycling Federation

INTRODUCTION

Virginia's outdoor recreation economy generates $21.9 billion annually and employs between 197,000 and 230,000 residents.[1] Virginia's trail systems and outdoor recreation opportunities are critical to our sustainable growth, livability, public health, and to the identity of the Commonwealth. Whether it's hiking, hunting, urban-based outdoor recreation or bicycling, Virginia's outdoor recreation infrastructure must be safe, well maintained, and diverse enough to meet demand from the growing numbers of visitors and businesses who rely on these assets.

BACKGROUND

With 22 National Park Units, 38 State Parks, and the only Silver-level "Ride Center" as identified by the International Mountain Biking Association on the East Coast (Roanoke), Virginia's identity is rooted in the outdoors. In fact, 57% of residents participate in some form of outdoor recreation each year; contributing to an industry that generates 1.2 billion dollars in tax revenue annually for the Commonwealth.[2]

The 2017 Virginia Outdoors Plan reports that 82% of survey respondents said the protection of natural areas was "very important" – a statistic that cuts across all demographics.[2] Access to these Natural Areas is influenced by numerous State entities including the State Trails Advisory Committee (STAC), formed through legislation in 2014 to advise DCR on trails and recreation economies. Representing multiple recreation types and the geographic breadth of the State, STAC supports DCR in developing the State's Outdoors Plan, the Statewide Trails Plan, and advises on critical areas of focus. The legislation to establish the STAC must be renewed in 2021.

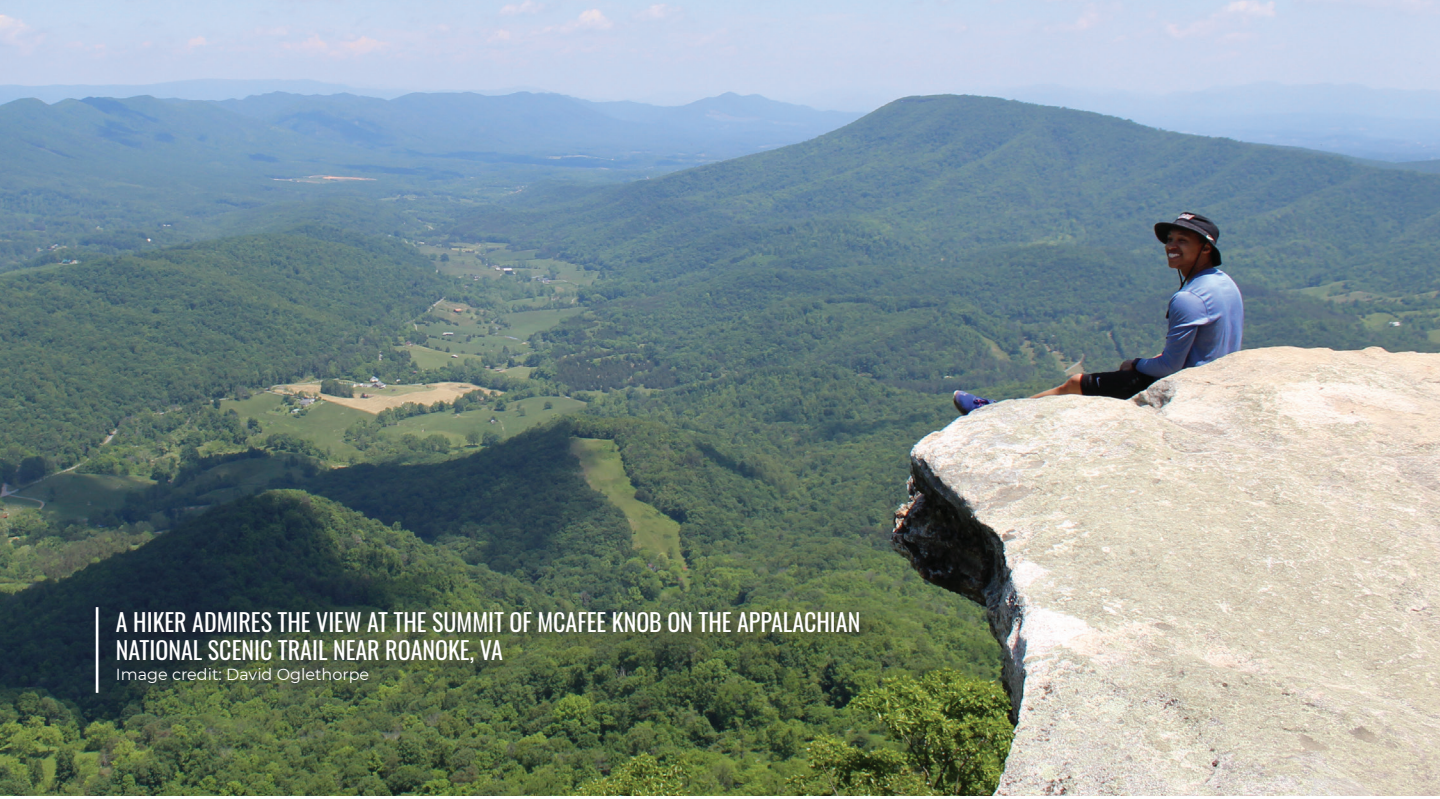
The rate of return when investing in trails and open space is significant. The Virginia Outdoors Plan reports that: "With more than 1.4 million visits in 2016 alone, the James River Park System is by far the most visited park system in the Richmond region. Based on the 2017 budget, every James River Park System budget dollar is related to $60.26 in visitor spending. In interviews with local businesses, owners estimated a 32.7 percent loss in revenue if the James River Park System did not exist. For every quarter-mile closer to the James River Park System a single-family property is located, the property's assessed value increased by a total of $8,963.10".[2] Urban recreation opportunities are also key in providing equity of access to the outdoors for all Virginians.

Virginia has a continuing responsibility to facilitate and support access to, and enjoyment of, the outdoors among historically underserved communities and communities of color. Numerous organizations in the Commonwealth such as Groundwork RVA, promote environmental justice by cultivating and training the next generation of stewards and leaders within the outdoor industry. This diversity of leadership makes the outdoor industry, and the benefits of outdoor recreation and access, stronger within the Commonwealth.

> VIRGINIA HAS A CONTINUING RESPONSIBILITY TO FACILITATE AND SUPPORT ACCESS TO, AND ENJOYMENT OF THE OUTDOORS AMONG HISTORICALLY UNDERSERVED COMMUNITIES AND COMMUNITIES OF COLOR.

Of course, benefits of Outdoor Recreation are not limited to urban areas. Similar successes are underway in Southwest Virginia where Outdoor Recreation is transforming towns like St. Paul and Dungannon where the Clinch River State Park is expected to contribute an additional $2.53 million dollars to local economies.[3]

Public lands are also increasingly important as part of a robust public health support system and provide benefits to a wide variety of income levels and physical abilities. The National Recreation and Parks Association reported in a 2010 summary of the scientifically proven benefits of recreation and public land: "Government park and recreation services provide close-to-home, no or low-cost, readily available areas, facilities, programs, and instruction, which provide pleasurable physical activity opportunities. These services are used by the vast majority of the public and would be used to an even greater extent if additional investments were made in them."[4]



A HIKER ADMIRES THE VIEW AT THE SUMMIT OF MCAFEE KNOB ON THE APPALACHIAN NATIONAL SCENIC TRAIL NEAR ROANOKE, VA
Image credit: David Oglethorpe

CONCLUSION

Every dollar spent building and maintaining trails, making bike lanes safer, and making parks of any kind more accessible to the public is an investment with significant return. Coordinating the vast outdoor recreation assets of the Commonwealth, marketing them effectively and ensuring access for all takes resources. The Department of Conservation and Recreation must be provided with these resources to effectively empower and support local communities.

POLICY RECOMMENDATIONS

Improve funding for DCR to support, empower, and coordinate conservation efforts and outdoor recreation.

Reauthorize the State Trails Advisory Committee which is set to expire January 1, 2021.

Convene an advisory group of environmental justice organizations that can compile information on existing state funding sources, disseminate that information, and identify funding gaps in the State's support of outdoor recreation and access in coordination with the Governor's Environmental Justice Council.

Support legislation that makes it illegal to use a handheld electronic device while operating a motor vehicle in Virginia.

Support legislation requiring that vehicles stop for pedestrians in a crosswalk rather than merely yielding to them as required by existing Virginia law

MAXIMIZING BENEFITS AND MINIMIZING IMPACTS OF UTILITY-SCALE SOLAR

Dan Holmes // Piedmont Environmental Council | Hannah Coman // Southern Environmental Law Center

INTRODUCTION

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 achieve an optimal outcome and minimize 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 should be the primary means used to meet the Commonwealth's energy demand, Virginia's executive branch, General Assembly and regulators should strive to minimize the environmental impacts while maximizing the benefits of solar.

BACKGROUND

A utility-scale solar facility is one that generates solar 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. Many attribute this increase to the demands of incoming data centers for renewable energy and the decreasing cost of solar panels. In fact, in the spring of 2019, the Spotsylvania Board of Supervisors approved the largest solar energy facility on the east coast, which has consumed over 3,500 acres of forested land in Virginia and will produce 500 megawatts (MW) of power. Solar developers are continuing to propose additional projects of 1,000 acres or greater across the Commonwealth with rumors of additional larger proposed facilities on the way. In contrast, distributed solar power generation has less negative environmental impact as they consist of small-scale installations (e.g. rooftop solar) primarily designed to meet the immediate demands of the property on which it is located.

Utility-scale solar will continue to develop in the future. The 2018 Grid Transformation and Security Act (SB966) declared 5,000 megawatts of utility-owned and operated solar and wind facilities to be in the public interest. It is expected that large, utility-scale solar facilities will produce the majority (some 4,000 MWs) of that new generation, and it will happen quickly. For example, Dominion has publicly committed to 3,000 MW of utility-scale solar "in operation or under deployment" by 2022. Given market conditions, we will likely see greater levels than what is provided for in SB 966.

It is clear that Virginia needs greater deployment of renewable energy projects. However, all projects should take into account site-specific conditions. With average solar projects currently requiring roughly seven to ten acres for each megawatt produced, decision makers must ensure proper site selection and best practices to manage development and associated impacts from these projects. This level of 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.

> WITH AVERAGE SOLAR PROJECTS CURRENTLY REQUIRING ROUGHLY SEVEN TO TEN ACRES FOR EACH MEGAWATT PRODUCED, DECISIONMAKERS MUST ENSURE PROPER SITE SELECTION AND BEST PRACTICES TO MANAGE DEVELOPMENT AND ASSOCIATED IMPACTS FROM THESE PROJECTS.

Virginia's policymakers should implement and promote best practices for utility-scale solar. Those practices would include measures related to:

- **Proper Site Selection**. Prioritize and incentivize post-mining land, landfills, brownfields, former industrial or commercial sites where future use is affected by real or perceived environmental contamination. Focusing the initial round of development on these sites can make use of otherwise fallow sites and avoid use of undeveloped parcels, such as forests and agricultural lands, whose highest and best use is to remain green, either for traditional uses or as a carbon sink for addressing climate change.
- **Local Authority**. Assist localities in developing siting criteria and recommendations for the public permitting process without eroding local authority.
- **Co-Locating Solar Facilities**. Maximize efficient use of the land by locating solar at a site that is already in use, e.g., rooftops, parking garages, pasture land, or other energy generation sites.
- **Reclamation/Decommissioning**. Ensure reclamation plans are in place. Solar panels have an estimated life span of at least 25 years

and can readily be replaced with new panels, possibly eliminating the need for site reclamation. When solar site decommissioning does occur, reclamation plans can help ensure that it is done appropriately. Most solar developers already include these plans in their operations and maintenance budgets, but local authorities should make sure this is the case. Opponents of solar sometimes seek to scare landowners and the public with claims that solar panels will leave land contaminated, many of these claims are without basis. However some, like in the case of GenX coatings, may require additional study and input from the U.S. Environmental Protection Agency.

- **Minimize Wildlife Habitat Disturbance and Protect Ecology**. Minimize the impacts on habitat disturbance, particularly during construction. Ensure that solar developers are communicating early and often with federal and state wildlife agencies.
- **Sustainable Grounds Keeping**. Maximize the benefit of the project by including agricultural best management practices. Examples include: planting native grasses and wildflowers in low maintenance areas for solar facilities. This can improve erosion control, pesticide avoidance, stormwater infiltration, wildlife habitat, and reduce long- term maintenance costs and emissions. These naturalized meadows, once established, are more drought-tolerant, require little to no fertilization, and only need to be mowed once or twice a year.

CONCLUSION

Now that Virginia has set the wheels in motion for increased use of utility-scale solar, it is important that policymakers have the foundation for best practices to maximize the benefits and minimize the impacts.

POLICY RECOMMENDATIONS

Incentivize solar developers to use previously developed or degraded land, such as post- mining land, by offering tax credits.

Break down barriers to distributed solar so that it can become a viable option in Virginia (see *Breaking Down Barriers to Solar in our Communities*, p. 56).

Develop a list of state-supported best practices and incentives and work with utilities to encourage them to choose sites that employ these practices.

Direct the Department of Environmental Quality, with input from other interested state agencies and parties such as the Department of Mines Minerals and Energy, localities, industry, and the public, to study the development of utility-scale solar on previously developed or degraded lands. These lands would include, but not be limited to, brownfields, landfills and abandoned and/or reclaimed mine lands. This effort should lead to the production of a report identifying barriers to solar development and including recommendations to incentivize solar development on these lands.

A SOLAR FARM ON THE LAND OF A VIRGINIA FARM OWNER.
Image credit: Shutterstock

ENDNOTES

EXPLORING DEDICATED FUNDING FOR CONSERVATION

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ENSURING RIGHTFUL PROPERTY OWNERSHIP THROUGH THE UNIFORM PARTITION OF HEIRS PROPERTY ACT

For more information:

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Virginia Lawyer, August 2018
[2] https://www.americanbar.org/groups/state_local_government/publications/state_local_law_news /2016-17/fall/restoring_hope_heirs_property_owners_uniform_partition_heirs_property_act/
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[4] https://www.fsa.usda.gov/Internet/FSA_File/whatyouneedtoknowheirproperty.pdf

INCREASING ACCESS TO TRAILS AND OUTDOOR RECREATION

[1] Outdoor Industry Association, Virginia Outdoor Recreation Economy Report, 2017; C. Forman, Coalfields counties, towns along the Clinch River embrace potential of recreation, tourism. Roanoke Times, 2019
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6

PRESERVING AND ENHANCING WILDLIFE HABITATS AND FISHERIES

EXECUTIVE SUMMARIES AND CONTACT INFORMATION

LEGISLATIVE POINTS OF CONTACT

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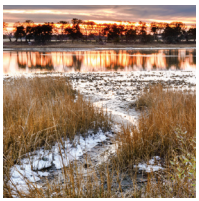

ASSESSING AND ENHANCING VIRGINIA'S OYSTER STOCK

The Commonwealth has made a significant investment in successful efforts to rebuild the Bay's oyster population. These efforts not only support Virginia's wild oyster harvest but also Virginia's oyster restoration goals under the Chesapeake Bay Watershed Agreement. These investments also provide multiple economic and ecological benefits including more robust oyster harvests, cleaner water, and increased habitat for economically important species such as blue crabs and striped bass.

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RESTORING STREAM HABITAT AND FISH PASSAGE

Revegetating riparian buffers and replacing failing road crossings is paramount for the conservation of eastern brook trout, migratory fish, and other at-risk aquatic species. Improving habitat for aquatic organisms will also give VDOT the opportunity to improve infrastructure resiliency in the face of climate change while simultaneously allowing the agency to contribute towards its MS4 goals. Including the consideration of fish-friendly stream crossing design alternatives provides another important avenue for interagency collaboration on projects that benefit fish and wildlife and are consistent with the Chesapeake Bay Agreement goals.

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ENSURING SAFE PASSAGE FOR VIRGINIA'S WILDLIFE

Protecting terrestrial and aquatic wildlife corridors is a continuously growing priority for lawmakers in the United States. New Mexico, New Hampshire, California, Oregon, and Wyoming have recently passed bills to map and protect wildlife corridors and construct wildlife crossings where these corridors intersect roadways. The Western Governor's Association, New England Governors, and the Eastern Canadian Premiers have started initiatives to research and address connectivity. Many state agencies and local organizations have also voluntarily begun conducting connectivity research and mapping potential wildlife corridors. It is time that Virginia joins this growing movement to identify and protect our valuable wildlife corridors.

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ASSESSING AND ENHANCING VIRGINIA'S OYSTER STOCK

Chris Moore // Chesapeake Bay Foundation | Zachary Sheldon // The Nature Conservancy

INTRODUCTION

The native oyster (*Crassostrea virginica*) 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 state's fishery and ecological restoration of the Commonwealth's oyster population. Both of these efforts support not only the maintenance of the states' commercial fishery but also a wide array of ecosystem services provided by healthy oyster habitats.

BACKGROUND

The Chesapeake (meaning "great shellfish Bay" in Algonquin) Bay had historical oyster reefs so expansive they posed navigation hazards to explorers and watermen. With the ability of each adult oyster to filter up to 50 gallons of water per day, they are a key ingredient to removing pollution and increasing water quality in the Bay and its tributaries. The oyster population in the Bay was once so vast that the entire Bay, 19 trillion gallons of water, could be filtered in less than a week. The current population requires a whole year to filter the Bay.

Oysters are a keystone species that build three-dimensional reefs which provide critical nursery habitat for many commercially important species such as blue crab and striped bass. Restoration is important to increasing the vitality of oyster populations by providing areas for reproduction which can spillover into nearby harvest bars and create disease resistant stocks. It is estimated that sanctuary oyster reefs provide 34 percent higher economic value over a 50-year period than traditionally harvested reefs because of their important ecosystem services.

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. In 2018, the Lafayette River was declared the first tributary in Virginia to meet the restoration metrics adopted by the Chesapeake Bay Program (CBP) after significant contributions by local partners, the state, and federal agencies. Restoration efforts will now be focused on other tributaries such as the Lynnhaven, Piankatank, Lower York, and Great Wicomico in order to meet the CBP goal of restoring 5 tributaries by 2025.

With investments in oyster restoration and replenishment increasing there in a need to gain additional insight into the distribution and size of the state's oyster population while also better gauging restoration success. In the end, this will lead to better management of the Commonwealth's increasingly valuable oyster resource.

> OYSTERS ARE A KEYSTONE SPECIES THAT BUILD THREE-DIMENSIONAL REEFS WHICH PROVIDE CRITICAL NURSERY HABITAT FOR MANY COMMERCIALLY IMPORTANT SPECIES SUCH AS BLUE CRAB AND STRIPED BASS.

Currently, the state only annually monitors harvest areas to provide information to help ensure the sustainability of the wild oyster fishery. Completing a more robust survey of the state's oyster population will help target restoration efforts, provide information for fishery managers, and help ensure limited restoration funds are spent as efficiently as possible.

CONCLUSION

The Commonwealth has made a significant investment in successful efforts to rebuild the Bay's oyster population. These efforts not only support Virginia's wild oyster harvest but also Virginia's oyster restoration goals under the Chesapeake Bay Watershed Agreement. These investments also provide multiple economic and ecological benefits including more robust oyster harvests, cleaner water, and increased habitat for economically important species such as blue crabs and striped bass.

POLICY RECOMMENDATIONS

To better gauge Virginia's restoration successes and ensure both restoration and fishery management decisions are made with the best available information, the State budget should include robust funding to design and implement a stock assessment of the Commonwealth's oyster population and continue to support its oyster restoration initiatives.

A NATURAL OYSTER BED AS SEEN AT SUNSET ON THE LYNHAVEN INLET OFF THE CHESAPEAKE BAY, LOCATED IN VIRGINIA BEACH, VA.
Image credit: Shutterstock

RESTORING STREAM HABITAT AND FISH PASSAGE

Celia Vuocolo // Piedmont Environmental Council | Bryan Hofmann // Friends of the Rappahannock
Tom Benzing // Virginia Council of Trout Unlimited

INTRODUCTION

The eastern brook trout (*Salvelinus fontinalis*) -- the official freshwater fish of Virginia -- is valued by conservationists and sportsmen alike for its beauty and as an indicator of high water quality. Once widespread, the native brook trout has been lost from 38% of its historic range and are now found primarily in headwater streams in and around Shenandoah National Park and the George Washington and Jefferson National Forests. Brook trout need clean, cold water (no higher than 68° F) to survive, and land use changes and habitat degradation over the course of the past century have significantly decreased their populations. Restoring riparian buffers and replacing failing road crossings on private and public property is a priority for the conservation of this species. It is also a way to increase climate and infrastructure resiliency, improve water quality, and restore habitat for numerous other aquatic species.

BACKGROUND

Virginia has the strongest native brook trout populations in the southern part of the species' historic range, which spans from Maine to Georgia. According to DGIF, there are 2,300 miles of wild brook trout waters in the state. It is an iconic species in the Appalachians, where descendants of mountain families can still recall seeing this beautiful fish in high numbers. The construction of roads and land clearing for development and farming over the centuries greatly reduced the availability of brook trout habitat. Undersized crossings constrict streams and make fish passage difficult if not impossible in some areas, effectively cutting off pockets of fish from larger populations and important spawning habitat. Poor fish passage creates isolated populations, causing low genetic diversity and the inability to move to healthier habitat. Lack of riparian buffers further downstream increases water temperatures and polluted runoff, creating unsuitable habitat for many aquatic species and impacting water quality.

In 2013, the Piedmont Environmental Council (PEC) surveyed barriers to aquatic organism movement in all Class 1 trout streams (as designated by DGIF) in Rappahannock, Madison, Greene and Albemarle counties. PEC found that out of the 133 crossings assessed, only 41% had full aquatic organism passage. Perched culverts that sit higher than 1 foot above the water surface create significant barriers for aquatic organisms attempting to migrate upstream. Undersized crossings restrict natural stream flow, particularly during floods. They cause problems such as scouring and erosion, high flow velocity, clogging and ponding. Improper crossings, coupled with inadequate vegetated buffers, negatively impact both fish and water quality. These passage and habitat issues also affect other species of anadromous fish and many sensitive species, such as American Shad, Atlantic River Herring, and imperiled freshwater mussels. Solutions discussed above could be replicated and would provide the same benefit for many aquatic species throughout the Commonwealth.

> RESTORING RIPARIAN BUFFERS AND REPLACING FAILING ROAD CROSSINGS ON PRIVATE AND PUBLIC PROPERTY IS A PRIORITY FOR THE CONSERVATION OF THIS SPECIES.

The Virginia Department of Transportation (VDOT) manages the majority of public road crossings in the Commonwealth. VDOT is regulated by Total Maximum Daily Load (TMDL) goals for pollution reduction, as issued by VDOT's own Municipal Separate Stormwater Sewer System (MS4) permit. By working to replace failing crossings and restore stream buffers, efforts could be applied towards VDOT's water quality goals as described in the Chesapeake Bay Watershed Agreement and MS4 permit. Additionally, by replacing failing crossings with more flood resilient designs, VDOT will benefit from substantial long-term cost-savings of infrastructure maintenance.

CONCLUSION

Revegetating riparian buffers and replacing failing road crossings is paramount for the conservation of eastern brook trout, migratory fish, and other at-risk aquatic species. Improving habitat for aquatic organisms will also give VDOT the opportunity to improve infrastructure resiliency in the face of climate change while simultaneously allowing the agency to contribute towards its MS4 goals. Including the consideration of fish-friendly stream crossing design alternatives provides another important avenue for interagency collaboration on projects that benefit fish and wildlife and are consistent with the Chesapeake Bay Agreement goals.

POLICY RECOMMENDATIONS

Revisit the 2001 Memorandum of Agreement (MOA) with the Virginia Department of Transportation (VDOT), and update it to include a requirement that VDOT consider fish-friendly stream crossing design alternatives whenever new stream crossings are proposed or existing crossings are being replaced. This MOA will initiate an alternative design consideration when projects coincide with DGIF-mapped trout habitat or are scheduled to take place in waterbodies throughout the Commonwealth that impede or are likely to impede the movement of migratory fish species.

TROUT UNLIMITED AND DEPARTMENT OF GAME AND INLAND FISHERIES MONITOR FISH POPULATIONS AT SPRUCEPINE BRANCH, RAPPAHANNOCK COUNTY.

Image credit: Celia Vuocolo

ENSURING SAFE PASSAGE FOR VIRGINIA'S WILDLIFE

Celia Vuocolo // Piedmont Environmental Council | Misty Boos // Wild Virginia
Zachary Sheldon // The Nature Conservancy

INTRODUCTION

Wildlife live in a shrinking world; wilderness is disappearing, and the natural landscape has become fragmented by roads, development, and land use changes. As Virginia's population continues to grow, it brings more people into conflict with wildlife. Virginia is consistently among the 10 states with the highest number of deer-vehicle collisions, with more than 61,000 recorded collisions in 2016 alone.[1]

By establishing corridors of safe passage for species, we can reduce dangerous collisions with wildlife and combat the impacts of habitat degradation and fragmentation. By identifying, enhancing and conserving natural corridors and hydrological connectivity we allow wildlife to move safely through connected habitats, increase Virginia's resilience to climate change, and improve ecosystem services.

BACKGROUND

Habitat fragmentation impacts wildlife populations in Virginia in a variety of ways. Migratory animals, including a variety of birds, fish, and salamander species, among others, need to move annually to complete certain life cycle functions or to employ survival tactics. Roads, urban development, and poorly designed stream crossings can prevent these species from safely completing their migrations. Additionally, fish species like the eastern brook trout, as well as some of Virginia's endemic salamander species, are at higher risk of becoming isolated in patches of less suitable habitat due to their innate inability to overcome certain types of barriers and sensitivity to impaired water quality

Wildlife corridors have been defined in many different ways. In general, there is agreement that a corridor is defined as any space, usually linear in shape, which improves the ability of organisms to move among patches of habitat[2]. Large, continuous patches of natural land tend to have a greater diversity of habitats, greater protection from natural and human disturbances, greater richness of species, and greater sizes of sensitive species populations than smaller natural land patches.

CORRIDORS FOR ROAD SAFETY

Vehicle collisions with deer are a threat to driver safety and are among the most common type of collision in many areas of the Commonwealth. Deer-vehicle collisions are the fourth costliest of the 14 major collision types in Virginia, averaging more than $533 million per year. States that have protected wildlife corridors and built wildlife underpasses and overpasses, have noticed a significant decrease in wildlife-vehicle collisions of greater than 80 percent.[1] These states have created safer roadways for both citizens and wildlife and reduced expensive costs associated with wildlife collisions.

> BY ESTABLISHING CORRIDORS OF SAFE PASSAGE FOR SPECIES, WE CAN REDUCE DANGEROUS COLLISIONS WITH WILDLIFE AND COMBAT THE IMPACTS OF HABITAT DEGRADATION AND FRAGMENTATION.

CORRIDORS PROTECT AQUATIC SPECIES

Virginia's deteriorating watersheds threaten aquatic species considered crucial natural resources for the state. Improving connectivity for aquatic species "is paramount for the conservation of eastern brook trout — our state fish — and other at-risk aquatic species."[2] Increased storm intensity and recurring flooding place an even more significant threat on habitats that previously supported a diverse array of wildlife (see *Restoring Stream Habitat and Fish Passage,* p. 98*)*. Wildlife populations weakened by habitat fragmentation, and degraded water quality will have great difficulty adapting to these ecosystem changes. Protecting riverine, aquatic corridors will support landscape and coastal resiliency.

CORRIDORS SUPPORT ECOSYSTEM SERVICES

Wildlife corridors provide ecosystem services like pollination, water purification, water recharge and supply, carbon sequestration, and disturbance prevention. In addition, these lands have aesthetic values and provide recreational opportunities for citizens of the commonwealth. By preserving habitat connectivity, Virginia will capitalize on these services, promote ecosystem resiliency, and save on costs.

WILDLIFE CORRIDORS PROVIDE SOLUTIONS TO HABITAT FRAGMENTATION CAUSED BY THE CONSTRUCTION OF HIGHWAYS. THESE CORRIDORS ALLOW FOR SPECIES TO SAFELY COMPLETE THEIR MIGRATIONS.
Image credit: Shutterstock

CONCLUSION

Protecting terrestrial and aquatic wildlife corridors is a continuously growing priority for lawmakers in the United States. New Mexico, New Hampshire, California, Oregon, and Wyoming have recently passed bills to map and protect wildlife corridors and construct wildlife crossings where these corridors intersect roadways. The Western Governor's Association, New England Governors, and the Eastern Canadian Premiers have started initiatives to research and address connectivity. Many state agencies and local organizations have also voluntarily begun conducting connectivity research and mapping potential wildlife corridors. It is time that Virginia joins this growing movement to identify and protect our valuable wildlife corridors.

POLICY RECOMMENDATIONS

Virginia should establish a team of experts and relevant agency representatives to study, identify, and map potential wildlife corridors, both terrestrial and aquatic, across the Commonwealth. The team should consider the best management practices to protect and enhance these areas and create a strategy on how to protect the corridors.

ENDNOTES

ENSURING SAFE PASSAGE FOR VIRGINIA'S WILDLIFE

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VIRGINIA STATE CAPITO
BANK STREET ENTRANCE

7

PROMOTING AN INCLUSIVE AND TRANSPARENT GOVERNMENT

EXECUTIVE SUMMARIES AND CONTACT INFORMATION

LEGISLATIVE POINTS OF CONTACT

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ENSURING ENVIRONMENTAL JUSTICE FOR ALL

Virginia's environmental justice work is not limited to one particular community, pollution site, or infrastructure project. It is an essential procedural framework and set of actions required to ensure that policies and programs represent and benefit all Virginians and do not cause disproportionate harm to low-income communities and communities of color. Environmental justice work includes ensuring access to clean energy for all, access to safe drinking water for all, preventing disproportionate pollution, and more.

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ENSURING ROBUST PUBLIC PARTICIPATION: VIRGINIA'S REGULATORY BOARDS

In view of the important environmental protection role served by Virginia's independent regulatory boards, the current system should not be constrained or otherwise reduced in scope or authority in any way. While no appointment process is entirely free from political influence, the present system of gubernatorial appointments for specific staggered terms ensures, unless interrupted by unusually timed member appointments, regular turnover in board membership such that each governor will have some, but never complete, control over board composition. It also avoids some of the delays and tradeoffs that could slow or complicate legislative involvement in appointments.

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CURBING UTILITIES' POLITICAL INFLUENCE

Without serious reforms to the incentives at play for legislators, regulators, and investor-owned utilities, ratepayers in Virginia will continue to be overcharged and see an ever-increasing gulf between the amount they pay and the value they get in return. More importantly, without such reforms, more widespread adoption of clean energy sources, stronger environmental protections, and other environmental priorities may never be realized.

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REFORMING HOW LEGISLATIVE DISTRICTS ARE DRAWN

The bipartisan support of substantive reform during the 2019 legislative session marked a giant leap forward to significantly improve the way districts are drawn in Virginia. But there is still a long way to go. The same resolution must be passed again by the 2020 General Assembly and then win Virginia voters' approval in a statewide referendum in November 2020. And even though this will be the most comprehensive redistricting legislation that has ever passed through a state legislature, this constitutional amendment proposal can still be improved statutorily to further improve the redistricting process before districts are redrawn in 2021.

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ENSURING ENVIRONMENTAL JUSTICE FOR ALL

Danielle Simms // Virginia League of Conservation Voters | Kendyl Crawford // Virginia Interfaith Power and Light
Queen Shabazz // Virginia Environmental Justice Collaborative

INTRODUCTION

All too often, environmental burdens disproportionately impact vulnerable populations, people of color, and low-income communities. In the Commonwealth, that is no different. While Virginia has started to make some progress on environmental justice, vulnerable populations continue to be at increased risk to the impacts of climate change, fossil fuel production, and the increase of toxics. Though this is a long-term problem that requires long-term solutions, the first step is to ensure a permanently funded environmental justice council to advise our state agencies.

BACKGROUND

The U.S. Environmental Protection Agency (EPA) defines environmental justice as "the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies...It will be achieved when everyone enjoys the same degree of protection from environmental and health hazards and equal access to the decision-making process to have a healthy environment in which to live, learn, and work."

The environmental justice movement first emerged in the 1980s as the combination of social justice and environmental movements. In 1994, the EPA established the National Environmental Justice Advisory Council and the Interagency Workgroup on Environmental Justice. The council advises the EPA Administrator on strategic, scientific, technological, regulatory, community engagement, and economic issues related to environmental justice. This council has created a framework that can and should be replicated at the state level.

IMPACTS FROM COAL-FIRED POWER PLANTS

A 2012 NAACP report showed that five of Virginia's coal-fired power plants had significant health impacts on neighboring low-income communities and communities of color due to particulate pollution. These health impacts include higher rates of asthma, heart and lung disease, and premature deaths.

SOUTHWEST VIRGINIA

The residents of Southwest Virginia live with the impacts of coal mining, including polluted waters, increased risks of cancer and birth defects, and damage to property from blasting, landslides, and subsidence. Because of shifting energy markets and the reduction in coal mining in the region, these communities are facing economic decline, leaving them with fewer resources to deal with these problems.

BUCKINGHAM COUNTY

The Atlantic Coast Pipeline compressor station has been proposed in Union Hill, a historic community founded by former enslaved people. Within a one-mile radius of the proposed compressor site, 83% of residents identify as minorities, and unmarked burial sites are in close vicinity to the proposed construction site. The compressor station will cause both air and noise pollution, putting this minority community at risk to health impacts.

HAMPTON ROADS

Increased flooding related to a changing climate regularly impacts communities. Low-income residents bear a disproportionate burden, since they cannot afford to move to higher ground or pay expensive flood insurance premiums. Lack of access to transportation also leaves these residents stranded during flooding.

CUMBERLAND COUNTY

One of the largest mega-landfills in the country is proposed to be located in the historic African American community of Pine Grove near an endangered Rosenwald School. Concerns include the stench of the landfill, air pollution and safety issues related to major increases in daily truck traffic, potential destruction of unmarked burial sites in close proximity to the site, and chemicals leaching into drinking wells, Muddy Creek, and the James River.

ADDRESSING ENVIRONMENTAL JUSTICE THROUGH EXECUTIVE ORDER

Virginia has recently begun working towards environmental justice. In October 2017, Governor McAuliffe created Virginia's first Advisory Council on Environmental Justice (EO 73), which produced recommendations to robustly seek public input from impacted communities, address equity in evacuation planning, move away from fossil fuels, and conduct a pollution hot spot analysis. Due to the legal uncertainty of the council, in January 2019, Governor Northam

issued EO 29, establishing the Virginia Council on Environmental Justice for one year. Currently, the new body remains unfunded.

The creation and disbanding of councils through executive order underscores the importance of a permanent codification of an environmental justice council. This consistency ensures that progress is not stalled. Additionally, funding is essential for a council to provide recommendations with the input of environmental justice communities.

> WHILE VIRGINIA HAS STARTED TO MAKE SOME PROGRESS ON ENVIRONMENTAL JUSTICE, VULNERABLE POPULATIONS CONTINUE TO BE AT INCREASED RISK TO THE IMPACTS OF CLIMATE CHANGE, FOSSIL FUEL PRODUCTION, AND THE INCREASE OF TOXICS.

Specifically, funding would give the council the resources to communicate with the public, with a focus on low-income communities and communities of color about meetings and opportunities for engagement with the council. Funding can also cover the costs associated with accessible meeting spaces, travel assistance, expert consultation, independent studies/analyses, staff/facilitator time, and grants to communities to identify their environmental justice concerns and priorities.

CONCLUSION

Virginia's environmental justice work is not limited to one particular community, pollution site, or infrastructure project. It is an essential procedural framework and set of actions required to ensure that policies and programs represent and benefit all Virginians and do not cause disproportionate harm to low-income communities and communities of color. Environmental justice work includes ensuring access to clean energy for all, access to safe drinking water for all, preventing disproportionate pollution, and more.

POLICY RECOMMENDATIONS

Codify an environmental justice council and appropriate $100,000 for operational funding. This funding is essential for the council to perform its basic task of providing recommendations with the input of environmental justice communities. This statewide body should be tasked with oversight on environmental justice issues to most effectively prevent disproportionate burden.

Operationalize environmental justice within the state government by:

- Creating an inter-agency working group, establishing an Office of Environmental Justice, and appointing an environmental justice community ombudsperson;
- Establishing additional environmental justice staff within the Department of Environmental Quality, Department of Conservation and Recreation, and the Virginia Department of Health; and,
- Ensuring training for state agency staff in environmental justice techniques.

Pursue policy reform on environmental justice including:

- Adopting the U.S. EPA's definition of environmental justice in the Code;
- Requiring an environmental justice analysis for new energy, industrial and infrastructure projects; and,
- Weighing health impacts and environmental justice as a factor in all siting, rule-making, and permitting decisions.

A FACTORY PRODUCES SMOKE. STUDIES HAVE FOUND SIGNIFICANT HEALTH IMPACTS ON LOW-INCOME COMMUNITIES AND COMMUNITIES OF COLOR DUE TO THEIR PROXIMITY TO PARTICULATE POLLUTION.
Image credit: Shutterstock

CREATING ROBUST PUBLIC PARTICIPATION: VIRGINIA'S REGULATORY BOARDS

Margaret L. (Peggy) Sanner // Chesapeake Bay Foundation | Phillip Musegaas // Potomac Riverkeeper Network

INTRODUCTION

From the shores of the Chesapeake Bay to the waters of the Clinch and Jackson Rivers, from the Piedmont's rolling hills to the towering forests of the western mountains, Virginia is blessed with rich natural resources vouchsafed by our Constitution for the benefit, enjoyment and general welfare of the people. While the Commonwealth's elected officials enact environmental laws that regulatory agencies implement through regulations and permits, Virginia's regulatory boards uniquely ensure that Virginians – the public – have a meaningful voice in shaping the rules that are designed to protect our priceless air, water and lands.

Comprised of non-expert, uncompensated regulatory volunteers, members of Virginia's citizen boards work hard, often thanklessly and in the most trying of circumstances, to uphold the law and engage the public in protecting the environment. The Boards and the process by which they operate are not perfect. However, as with many aspects of governance, there is clearly room for improvement when it comes to transparency, independence, and public engagement. Yet the Boards' inherent value as Virginians entrusted with key decisions about the Commonwealth's natural resources, and their great promise to be independent arbiters about what is best for these resources and all Virginians, cannot be overstated. It is therefore critically important that Virginia policymakers refrain from interfering in the Boards' independence, scope or authority.

BACKGROUND

Virginia's citizen boards – including the State Water Control Board, State Air Pollution Control Board, Waste Management Board, and Marine Resources Commission—play key roles in Virginia's balanced framework for protecting the environment. They are responsible for approving, denying or modifying environmental regulations, permits to limit industrial pollution, enforcement actions for polluters, and other issues. They also create some of the most important opportunities for Virginians to participate in protecting our environment.

Citizen board members are not necessarily experts in environmental issues (agency staff develops technical information and advises where necessary); instead, they bring thoughtful, on-the-ground perspectives to technical decisions relating to air, water and land. They are expected to be free from financial and other conflicts of interest. Notably, while they are appointed by the Governor (typically, for specific, staggered terms), they are not state employees and are free to exercise independent judgment without constraint or direction from elected officials.

Proceedings before citizen boards are also structured to enable members of the public to provide meaningful, substantive feedback for the Boards to consider in their decisions regarding major environmental issues. Board proceedings are open to the public, and people may attend to learn about matters to be decided, including details that could otherwise be hidden. Virginians may engage in this work by submitting written comments and testifying to the board on specific agenda items. The citizen boards' process for soliciting and considering public comment should not be constrained, if anything, it could be enhanced. When Virginians feel they are truly involved, government decisions have greater legitimacy. The public are also empowered to bring new perspectives and environmental matters to the board's attention.

> VIRGINIA'S REGULATORY BOARDS – INCLUDING THE STATE WATER CONTROL BOARD, STATE AIR POLLUTION CONTROL BOARD, WASTE MANAGEMENT BOARD, AND MARINE RESOURCES COMMISSION—PLAY KEY ROLES IN VIRGINIA'S BALANCED FRAMEWORK FOR PROTECTING THE

Public engagement with the citizen boards ensures a measure of transparent accountability for environmental decisions. Virginians ask questions of the decision makers and insist on answers. Ideally, these opportunities help to build public understanding of the issues, recognition that important perspectives are being taking into account, and trust in the decision making process.

BACK BAY NATIONAL WILDLIFE REFUGE.
Image credit: Shutterstock

CONCLUSION

In view of the important environmental protection role served by Virginia's independent citizen boards, the current system should not be constrained or otherwise reduced in scope or authority in any way. While no appointment process is entirely free from political influence, the present system of gubernatorial appointments for specific staggered terms ensures, unless interrupted by unusually timed member appointments, regular turnover in board membership such that each governor will have some, but never complete, control over board composition. It also avoids some of the delays and tradeoffs that could slow or complicate legislative involvement in appointments.

POLICY RECOMMENDATIONS

Refrain from legislating or authorizing any change to the current regulatory board framework that would reduce, constrain or otherwise weaken the Boards' ability to make independent, publicly informed decisions that uphold state law and protect the Commonwealth's invaluable natural resources. Specifically, we ask that no legislation be enacted to limit the ability of regulatory board members to reach reasoned, independent decisions supported by the administrative record and applicable law or to restrict the role or ability of regulatory boards to assure public participation in environmental decision making.

CURBING UTILITIES' POLITICAL INFLUENCE

David Jonas // Clean Virginia

INTRODUCTION

In Virginia, a lack of progress in developing sources of renewable energy, curbing emissions, and cleaning up environmental hazards is directly tied to the outsized political power enjoyed by investor-owned electric utilities. Utilities like Dominion Energy and Appalachian Power Company are granted monopoly rights to operate in exclusive service territories, and in exchange, they are supposed to both act in the public interest and be subject to high levels of oversight and regulation. However, in practice, the General Assembly has passed laws at the behest of these regulated entities to strip the State Corporation Commission (SCC)—the main regulator of utilities in Virginia—of its normal oversight powers. These electric utilities have spent millions of dollars on campaign donations and lobbyists to ensure passage of favorable legislation, resulting in a slower transition to clean energy, the stalled cleanup of environmental pollution, a favorable market for capital-intensive fossil fuel infrastructure, and more than a billion dollars in excess profit. Without stronger campaign finance, ethics, and disclosure laws, this cycle of legalized corruption will continue.

BACKGROUND

Over the past two decades, the General Assembly has passed a series of new laws that have changed how electric utilities operate and the mechanism through which the SCC determines the "fair" market prices for electricity.[1] The most significant change came in 2015 when the General Assembly froze rates at artificially high levels and curtailed normal oversight of how much Dominion Energy and Appalachian Power Company are able to charge customers.[2] These utilities lobbied successfully for two new laws in 2015 (SB 1349, the so-called "Rate Freeze Law") and 2018 (SB 966, the Grid Transformation and Security Act) that suspended the normal biennial review of their rates, preventing the SCC from lowering rates or mandating ratepayer refunds in cases of overcharging.[3] As a result of these two laws, Dominion has kept, on average, over $350 million each year since 2016 in over-earnings — money in excess of what the SCC determines as reasonable profit.[4] Historically, the vast majority of this money would have been refunded to ratepayers.

All regulated utility systems are vulnerable to regulatory capture—the process in which the regulated entity unduly influences its regulators to such a degree that the regulators end up serving the interests of that entity. In Virginia, this regulatory capture goes one step further. Thanks to lax ethics, campaign finance, and disclosure laws, legislators are highly susceptible to influence-related activities that incentivize the passing of laws that reduce the SCC's regulatory and oversight powers. In Virginia, the legislature itself has been captured. Dominion Energy is the top corporate campaign contributor over the past 20 years, during which time they donated over $11 million to candidates and committees.[5] During recent legislative pushes, they have employed over 20 lobbyists to push their agenda through the General Assembly.[6]

> DOMINION ENERGY IS THE TOP CORPORATE CAMPAIGN CONTRIBUTOR OVER THE PAST 20 YEARS, DURING WHICH TIME THEY DONATED OVER $11 MILLION TO CANDIDATES AND COMMITTEES.

More critically, without market competition, Virginians cannot simply "walk away" from their utility if they disagree with their utility's political practices. That means that captured ratepayers and customers are forced to subsidize political activity they may disagree with. These heightened structural power differences between ratepayers and their utility demand equally heightened protections to guard against legislative capture.

CONCLUSION

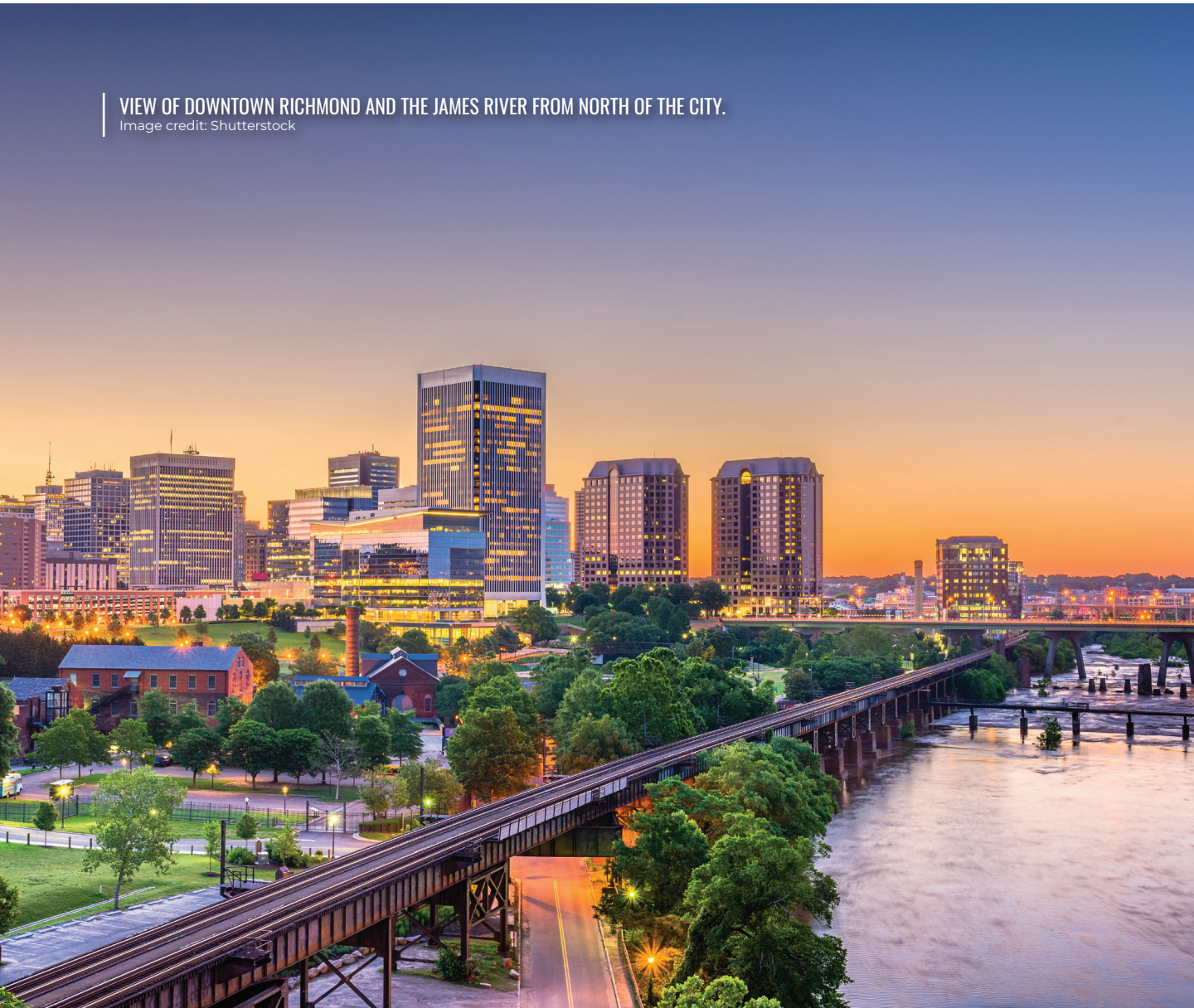
Without serious reforms to the incentives at play for legislators, regulators, and investor-owned utilities, ratepayers in Virginia will continue to be overcharged and see an ever-increasing gulf between the amount they pay and the value they get in return. More importantly, without such reforms, more widespread adoption of clean energy sources, stronger environmental protections, and other environmental priorities may never be realized.

POLICY RECOMMENDATIONS

Pass legislation that bans candidates and campaigns from accepting contributions from investor-owned utilities that operate as public service corporations in Virginia.

Pass legislation that bans their members from owning stock in any Virginia-based investor-owned electric utility.

Pass legislation requiring public service corporations to file a "Statement of Government Influence Spending" that details in full their spending on lobbying, trade association fees, and other influence-related activities.



VIEW OF DOWNTOWN RICHMOND AND THE JAMES RIVER FROM NORTH OF THE CITY.
Image credit: Shutterstock

REFORMING HOW LEGISLATIVE DISTRICTS ARE DRAWN

Danielle Simms // Virginia League of Conservation Voters

INTRODUCTION

Gerrymandering, a practice intended to establish a political advantage for a particular party or group by manipulating legislative district boundaries, has increasingly divided our communities, isolated and restricted the power of people of color, and undermined citizens' right to a meaningful vote. It has created polarization and demoralization in the electorate, and undermined faith in our democracy. The General Assembly should continue tangible steps to put in place non-partisan, independent redistricting in time for the new commission to redraw lines in 2021.

BACKGROUND

In February 2019, the Virginia General Assembly overwhelmingly passed a bipartisan constitutional amendment proposal that could create Virginia's first redistricting commission.

This was the first crucial step toward reforming the way Virginia draws its legislative districts by including citizens in the redistricting process and adopting a non-partisan, independent and transparent process that will strengthen confidence and participation in our democracy.

> [GERRYMANDERING] HAS CREATED POLARIZATION AND DEMORALIZATION IN THE ELECTORATE, AND UNDERMINED FAITH IN OUR DEMOCRACY.

The proposal reconciled several proposed amendments from the 2019 legislative session. Key elements of the plan include:

- Establishes a Redistricting Commission of 8 legislators and eight citizens, with a citizen serving as chair;
- Requires full transparency of all meetings, minutes and data;
- Includes specific protections for minority communities;
- Includes impartial review in the selection of citizen members of the commission;
- Excludes unelected congressional or General Assembly employees from the commission;
- Guards against partisan gerrymandering by requiring a supermajority of commissioners for approval of district maps;
- Provides the General Assembly only up-or-down votes on the commission's maps, without amendments; and,
- Excludes the Governor from the approval process, which would throw off the balance created by the above framework.

CONCLUSION

The bipartisan support of substantive reform during the 2019 legislative session marked a giant leap forward to significantly improve the way districts are drawn in Virginia. But there is still a long way to go. The same resolution must be passed again by the 2020 General Assembly and then win Virginia voters' approval in a statewide referendum in November 2020.

Even though this would be the most comprehensive redistricting legislation that has ever passed through a state legislature, this constitutional amendment proposal can still be improved statutorily to further improve the redistricting process before districts are redrawn in 2021.

VOTERS ENTERING AND EXITING A POLLING LOCATION IN GLOUCESTER, VIRGINIA, TO VOTE IN THE 2016 GENERAL ELECTIONS.
Image credit: Shutterstock

POLICY RECOMMENDATIONS

Clearer Criteria. When drawing districts, the commission should have strong criteria to follow that focuses on keeping our communities together. These rules should prohibit all forms of gerrymandering and use existing local and municipal boundaries for districts where possible. This would minimize split precincts and keep our neighborhoods together.

Citizen Applications and Representation. As it is currently written, the commission will have eight citizens chosen by the selection committee of retired circuit court judges, but there are no requirements in the amendment for how they should choose citizens to be involved. Virginia should have an open application process that seeks a pool of potential citizen members that reflects the diversity of our Commonwealth.

Additional Transparency. The amendment already requires open meetings and open data, but there could also be specific requirements for a user-friendly website updated in real time, webcasting committee meetings, an email portal for Virginians who cannot come to meetings to use, and many other ways that address the nuts and bolts of broad-based community engagement that could be added to this process.

ENDNOTES

CURBING UTILITY POLITICAL INFLUENCE

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