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 130 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.

VCN is proud to serve as the state lead for the Choose Clean Water Coalition — the regional coalition advocating for clean rivers and streams in communities throughout the Chesapeake Bay Watershed, — as the Virginia state affiliate for the National Wildlife Federation, as a member of the Virginia Environmental Justice Council, and as a partner of Earth Day.
OUR COMMON AGENDA
A MESSAGE FROM THE EXECUTIVE DIRECTOR

I don't have to tell you that we are in an unprecedented moment in time. We are amidst a pandemic, the highest unemployment in recent history, and a renewed civil rights movement - not to mention, the impending threat of climate change. It would be easy for any one of us to use this as a moment to throw in the towel but, in picking up this book, you are joining me in being part of the solution. Thank you.

The last six months have shown that now, more than ever, we must invest in solutions for our environment. As we face a public health crisis that attacks our respiratory system, increasing local air quality has never been more important. Access to outdoor spaces for all Virginians – from trails in our neighborhoods to the banks of our local waterways – are critical as individuals look for opportunities to get out of their homes to restore their mental and physical health. As global markets are tested and stretched thin – the importance of local food systems and locally produced clean energy are key to creating resilient communities.

Our Common Agenda is your road map for state-based policy solutions to start to address these and other environmental problems facing our Commonwealth. A collection of papers written by, vetted through, and voted on by our 130+ Network Partners, this book is an educational tool for policy makers and conservation advocates alike. Our authors ground their research and findings in science and present practical policy solutions that are equitable for all Virginians. (See How The Briefing Book Gets Made (p. vi) for more information on how our Common Agenda is drafted each year.)

As you read through the policy ideas for the upcoming year you'll see an increased focus on tackling pollution from the transportation sector – Virginia's largest source of carbon pollution while we look to continue to enforce and enhance the climate gains made last year for Virginia's utility sector. In addition, we are just a few years away from Virginia's deadline to meet our goals in the Chesapeake Bay clean-up plan increasing the urgency of clean water investments that have proven successful over the last decade. As our trails, campgrounds, and waterways see increased visitors, we provide solutions for increasing access for all outdoors. In addition, you'll see that each of our policies seeks to ensure environmental justice for all.

These are just a few highlights from this year’s Common Agenda briefing book. As the partnership of 130+ conservation organizations we believe that if we work together, we can solve Virginia's biggest environmental problems and leave the Commonwealth better than we found it for the next generation. I'm looking forward to working with you on whichever topic or topics interests you most. Feel free to reach out to me, my team, or any of the authors in this book for more information.

Mary Rafferty
Executive Director
This year, in an effort to further involve the conservation community in the crafting of the publication, VCN held a contest to select the cover photo. With more than 400 submissions, the competition generated spectacular images from across the Commonwealth. This year’s contest winner is Sarah Kohrs, of Mt. Jackson, Va. for her photo Along the James. The picture was taken near Rockbridge County and highlights the reflection of the sky in the James River as it meanders along the Blue Ridges.

Kohrs hails from Shenandoah County and leads community work days at a burial ground that honors African Americans formerly enslaved on a plantation in Quicksburg. For the winning photo, she and her family were on a camping excursion to the Crabtree Falls area. "Driving along the Blue Ridge, we came to a place where the sunlight's strobe through tree canopies opened onto a clear view of the James River as it threaded toward the mountains," she said. "I never tire of seeing mountain and valley landscapes. They seem to make my soul sigh and leap at the same time." The photo was taken with a Fujifilm X-T10 digital camera.

"When we preserve, protect, and restore nature, we do the same for ourselves," said Kohrs, talking about the importance of conservation. "It’s a life-practice, a habit, that guides the way we see the world and the way we see one another. If we are willing to conserve the people we love, we should be willing to conserve the natural places we love, too."
HOW THE BRIEFING BOOK GETS DRAFTED

Our Common Agenda is a year-long project that couldn’t happen without support, insight, and input from all of VCN’s Network Partners. With the COVID-19 pandemic significantly impacting how business was conducted in 2020, many of VCN’s in-person processes had to be moved to a virtual setting. Here’s how we put this book together this year:

NETWORK PARTNERS PARTICIPATE IN REGIONAL LISTENING SESSIONS
Each spring, VCN hosts regional listening sessions to brief local and regional partners on what environmental policies passed and failed during the General Assembly session. This is the first opportunity for our network of more than 130 partners to highlight what local and regional conservation policy opportunities they would like prioritized.

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

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

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

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

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

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

Photos (top to bottom): VCN Partners participate in the Shenandoah Valley regional listening session. Image credit: Victoria Higgins; VCN Network Partners discuss strategy, policy, and which issues to focus on at the annual Clean Water Workgroup meeting. Image credit: David Oglethorpe.
Since 2010, the states located in the footprint of the Chesapeake Bay have embarked on a 15-year clean-up plan to reduce the amount of pollution in the estuary. Each state’s Watershed Implementation Plan (WIP) is designed to accomplish a set of allocation goals identified in the Chesapeake Bay total maximum daily load (TMDL). Virginia has made great strides and investments in meeting its goals by the 2025 deadline. However, in order to continue this progress, we must ensure strong and sustained funding for key local- and statewide initiatives.
WORKING WITH FARMERS TO PROTECT OUR RIVERS AND STREAMS

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. Strong, sustained funding at the level identified in the Agricultural Needs Assessment will improve water quality and invest in agricultural economies in hard-hit communities across the Commonwealth, both in and beyond the Chesapeake Bay Watershed.

Maggi Blomstrom // Piedmont Environmental Council // mblomstrom@pecva.org
Anna Killius // James River Association // akillius@thejamesriver.org
Joe Wood // Chesapeake Bay Foundation // jwood@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, specifically the Stormwater Local Assistance Fund.

Anna Killius // James River Association // akillius@thejamesriver.org
Joe Wood // Chesapeake Bay Foundation // jwood@cbf.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 cost-effectively 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 facilities.

Jamie Brunkow // James River Association // jbrunkow@thejamesriver.org
Joe Wood // Chesapeake Bay Foundation // jwood@cbf.org
CONSERVING AND EXPANDING TREE CANOPY FOR CLEANER AND HEALTHIER COMMUNITIES

Conserving existing tree canopy and investing in urban forests and riparian corridors restores our waterways, and can help restore Virginia’s economy and improve the physical and mental health of our residents, particularly those who live in underserved communities. We anticipate more legislation in 2021 and hope legislators will support these initiatives.

Karen Forget, Lynnhaven River Now // karen@lrnow.org
Brent Hunsinger, Friends of the Rappahannock // brent.hunsinger@riverfriends.org
Ann Jurczyk, Chesapeake Bay Foundation // ajurczyk@cbf.org
WORKING WITH FARMERS TO PROTECT OUR RIVERS AND STREAMS

Maggi Blomstrom // Piedmont Environmental Council  |  Anna Killius // James River Association  
Joe Wood // Chesapeake Bay Foundation

INTRODUCTION

Agriculture is Virginia’s largest industry by many metrics — economic impact, jobs, and land area — it also represents the largest source of nutrient and sediment pollution reaching Virginia’s local streams, rivers, and the Chesapeake Bay. Fortunately, addressing these pollution loads offers an opportunity to improve the Commonwealth’s natural resources while also enhancing the positive economic impact of agriculture. Over the past three decades Virginia has helped farmers reduce nutrient pollution by funding the Virginia Agricultural Cost Share Program (VACS). This voluntary program offers funding for farmers to accomplish a wide suite of practices that reduce pollution while offering benefits to the farmer and supporting local job creation. Although Virginia has made substantial progress, historic funding levels have fallen far short of demand.

BACKGROUND

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. All of these pollutants negatively impact Virginia’s local waterways in unique ways. Nutrient pollution causes excessive algal blooms that degrade water quality and suffocates fish and shellfish. Sediment pollution buries important habitats at the bottom of our waterways, including gravel spawning beds for trout, mussel beds, and oyster reefs and blocks sunlight from underwater grasses. Bacterial pollution makes rivers and streams unsafe for swimming, recreation and shellfish harvests.

As the largest source of nutrient and sediment pollution to the Chesapeake Bay, the agriculture sector plays a critical role in Virginia’s plan to clean up the Chesapeake Bay and address local stream health. The Chesapeake Bay Watershed Implementation Plan (WIP) and the 2020 Virginia General Assembly (HB1422/SB704) set a distinct timeline for farmers to protect their streams and the Bay by installing voluntary conservation practices on their lands. However, to meet this timeline, farmers need sufficient financial and technical support from a fully-funded Virginia Agricultural Cost-Share Program.

The Virginia Department of Conservation and Recreation administers VACS through the Soil and Water Conservation Board and Virginia’s 47 Soil and Water Conservation Districts. The Districts’ experienced staff 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 to 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 fencing to keep livestock out of streams while providing alternative water sources; nutrient management plans, which help ensure farmers use a sustainable amount of fertilizer; riparian grass and forested buffers; conservation tillage; cover crops; and, many other practices essential to protecting Virginia’s streams, lakes, rivers, and bays.

INVESTMENTS IN AGRICULTURAL BEST MANAGEMENT PRACTICES NOT ONLY IMPROVE WATER QUALITY, BUT THEY CREATE LOCAL JOBS AND DELIVER ECONOMIC BENEFITS FOR RURAL COMMUNITIES.

Investments in these agricultural BMPs not only improve water quality, but they create local jobs and deliver economic benefits for rural communities. Livestock exclusion from streams prevents calf losses and improves 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. And, reduced agricultural runoff protects critically important sources of drinking water, mitigating against the risks that rural communities and communities of color face from aging and insufficient water infrastructure. At a time when Virginia’s farming community has been hard hit by market, trade, and supply chain disruptions, agricultural producers need to see a renewed commitment by the Commonwealth to invest in clean water and agriculture.

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 no less than $100 million per year. During the 2020 General Assembly, legislators approved $95 million for agriculture water quality programs over two years, including $4.5 million each year for technical assistance - the boots-on-the-ground at the Districts that make these programs possible. Several important pieces of legislation were also passed that advance water quality goals for agriculture. However, due to the budget uncertainty resulting from the COVID-19 pandemic, almost $40 million has been put on hold.

**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. Strong, sustained funding at the level identified in the Agricultural Needs Assessment will improve water quality and invest in agricultural economies in hard-hit communities across the Commonwealth, both in and beyond the Chesapeake Bay Watershed.

**POLICY RECOMMENDATIONS**

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

- **Provide sufficient and stable funding**
  for technical assistance by Soil and Water Conservation Districts.

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

- **Remain strong in Virginia’s commitment**
  to maintain, enforce, and, where possible, improve our agricultural water quality and conservation initiatives.
INTRODUCTION
Virginians rely on local waterways for clean drinking water, vibrant communities, and strong economies. In fact, three-out-of-four Virginians depend upon healthy headwater streams for their drinking water. 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. In Richmond, the James River Park System alone generates over $33 million in income per year for the region. The 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, undermining Virginia’s goal to restore 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. With more intense rainfall events on the horizon as a result of climate change, untreated stormwater may exacerbate flooding and the potential for loss of life and property damage. Virginia’s plan to clean up the Chesapeake Bay, the Phase III Watershed Implementation Plan (WIP), calls for strong investments 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. Now, many larger localities are required to reduce the nutrients and sediment that they contribute to Virginia’s waterways. Implementing programs to achieve these reductions — like projects to retrofit older infrastructure — can be expensive. To help, the Virginia General Assembly created the Stormwater Local Assistance Fund (SLAF), a state and local matching grant program to protect and improve the health of our waterways. Over its lifespan, SLAF has authorized $95 million in grants for 216 projects across Virginia, and demand for this program continues to grow. In 2019, localities submitted proposals for nearly twice the amount of funding available. Virginia’s initial needs assessment for SLAF estimates that the state needs to invest approximately $80 million annually. The 2020 General Assembly provided $50 million for SLAF, but uncertainty about state revenues as a result of the COVID-19 pandemic has put that funding on pause.

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.

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.

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 residents while attracting tourists to its lively trout streams.

VIRGINIA CONSERVATION ASSISTANCE PROGRAM
The Virginia Conservation Assistance Program (VCAP) provides cost-share assistance for smaller-scale residential and commercial projects to improve drainage and reduce erosion such as rain gardens, conservation landscaping, and permeable driveways. Since the program began in 2012, Virginia’s Soil and
POLICY RECOMMENDATIONS

Allocate at least $80 million each year from 2020-2025 for the Stormwater Local Assistance Fund to invest in pollution reduction projects and help localities meet their local water quality needs on time.

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

Protect Virginia’s Stormwater Management Program to promote smarter growth and flood resilient communities.

Water Conservation Districts and their partners have installed over 479 projects. However, there are 45 project applications — worth $228,000 — in a backlog awaiting funding. Property owners, businesses, schools, and localities rely on VCAP as a cost-effective method of addressing erosion and runoff in their communities while engaging and educating the public. Last year, the General Assembly included $500,000 to support VCAP projects across the state, half of the amount this program received in 2019. Consistent, stable funding is an important part of encouraging property owners to participate.

STORMWATER DEFENSE
Virginia’s stormwater management program includes technical rules 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 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.
INTRODUCTION
Virginia and regional partners have been steadily working to restore the Chesapeake Bay since 1983. Significant progress has been achieved, but enhanced efforts are now needed in the face of new challenges, including population growth and climate change. Upgrades to wastewater facilities are critical to water quality and provide the most immediate benefit because they immediately reduce large quantities of pollution.

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). In order to continue progress the Virginia General Assembly needs to fund this program.

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

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.

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.

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 Phase III WIP, which addresses the work needed by all sectors. For wastewater, the Phase III WIP prescribes a plan that incentivizes equitable effort across all regions, potentially bringing facilities – especially in the James and York River watersheds – to a level of treatment similar to that achieved by Potomac and Shenandoah River facilities.

Not only will better wastewater treatment in the James and York River watersheds help the Bay, but it will ensure communities across the Commonwealth enjoy the benefits of cleaner water closer to home. Rural communities, especially rural communities of color, “have long faced challenges with toxic water due to insufficient water infrastructure,” while low income ratepayers in urban areas struggle to afford wastewater and drinking water improvements.¹ State funding will help these communities maintain and improve aging infrastructure, prevent local water quality problems like toxic algae, and create jobs for skilled workers.²

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.³

**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 cost-effectively 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 facilities.

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**POLICY RECOMMENDATIONS**

- Provide at least $55 million per year for upgrading the nutrient pollution reduction capabilities of significant wastewater facilities discharging to the Chesapeake Bay and tributaries.
- Defend against any legislation that would prevent the Department of Environmental Quality from implementing wastewater treatment plant upgrades as called for in Virginia’s Phase III WIP.
CONSERVING AND EXPANDING TREE CANOPY FOR CLEANER AND HEALTHIER COMMUNITIES
Karen Forget // Lynnhaven River NOW | Brent Hunsinger // Friends of the Rappahannock
Ann Jurczyk // Chesapeake Bay Foundation

INTRODUCTION
Virginia has ambitious tree planting goals in its Phase III Watershed Implementation Program (WIP). By planting more than 130,000 acres of tree canopy, the Commonwealth is looking to reduce polluted runoff into our streams, rivers, and the Chesapeake Bay. The Bay Program has also set a goal of adding 2,400 acres of urban tree canopy across the Chesapeake Bay watershed. In addition to their recognized water quality goals, trees also:

- Clean and cool the air;
- Sequester carbon;
- Reduce energy usage and associated emissions;
- Enhance economic activity;
- Provide wildlife habitat, and;
- Store water and mitigate flooding.

While acreage goals have not been established for the parts of Virginia outside of the Bay watershed, increased tree planting will bring similar benefits to these waterways and communities. In order to continue receiving the water quality, climate change, health, and economic benefits trees provide, Virginia must strive to achieve no net loss of canopy.

BACKGROUND
LOSING TREE CANOPY TO DEVELOPMENT AND REDEVELOPMENT
According to the Virginia Department of Forestry, urbanization and development is the single biggest factor in loss of forestland acreage. Since 2001, 484,965 acres of forested land has been lost to land use changes; 64 percent of this acreage was cleared for urban development; 30 percent to agricultural uses; and the balance to other land uses.1 Highly urbanized areas that are experiencing redevelopment are losing trees as the developed footprint expands.

TREES IMPROVE WATER QUALITY AND REDUCE FLOODING
According to Penn State Extension, during a one-inch rainfall event, one acre of forest will release 750 gallons of runoff, while a parking lot of the same size will release 27,000 gallons.2 As impervious surfaces increase across a watershed and precipitation rates climb due to climate change, the rain that can’t be absorbed by the ground overwhelms the capacity of the stormwater systems and flooding ensues.

TREES CAN REDUCE UTILITY BILLS AND ENERGY EMISSIONS
Well placed trees can lower air conditioning bills by as much as 58 percent and heating expenses by more than 40 percent by insulating homes from sun and wind.3 New research by USDA Forest Service found that urban/community forests could save Virginians approximately $175.5 million annually in reduced energy costs associated with heating and cooling residential buildings.4 Properly shaded residential buildings can prevent millions of tons of carbon dioxide, sulfur dioxide and nitrogen oxide from being released to the atmosphere.

Low-income and households of color in major US cities experience higher energy burdens when compared to the average household in the same city. Families who face higher energy burdens experience many negative long-term effects on their health and well-being. These families are at greater risk for respiratory diseases and increased stress.5

TREES FOR HEALTH AND SAFETY
Trees clean the air, removing harmful particulates that induce asthma and other respiratory illnesses. Trees in street proximity absorb nine times more pollutants than more
POLICY RECOMMENDATIONS

Amend §15.2-961.1 to allow all Virginia localities to adopt local ordinances for implementing tree canopy fund programs and to require that the site plan for any subdivision or other development provide for the preservation or replacement of trees on development sites such that the minimum tree canopy or tree cover percentage 10 years after development is achieved.

Increase funding for the Virginia Conservation Assistance Program (VCAP), the new Turf to Trees program, and VDOF Trees for Clean Water.

Increase incentives such as allowing greater densities for developers to create cluster subdivisions which increase the amount of green open space that is preserved.

Expand the use of the Healthy Watersheds Forest Initiative.

TREES AND WILDLIFE
Trees help increase food, habitat, shelter, and breeding areas that are necessary to restore and sustain Virginia’s wildlife. Trees are critical to helping maintain the wide variety of Virginia’s unique natural areas and ecosystems (see Improving Safety for Wildlife and People Through Wildlife Corridor Stewardship, p. 108).

CONCLUSION
Conserving existing tree canopy and investing in urban forests and riparian corridors restores our waterways, and can help restore Virginia’s economy and improve the physical and mental health of our residents, particularly those who live in underserved communities.
ENDNOTES

WORKING WITH FARMERS TO PROTECT OUR RIVERS AND STREAMS
2 Choose Clean Water Coalition, Supporting Virginia Farmers, YouTube (Nov. 16, 2018), https://www.youtube.com/watch?v=9FYYje5Ju7Y.
5 FY 2019 Chesapeake Bay and Virginia Waters Clean-Up Plan, Sec’y of Nat. Res. (Nov. 2019), https://rga.lis.virginia.gov/Published/2019/RD%5B9%5D/PDF.

TACKING POLLUTED STORMWATER RUNOFF AND RESTORING LOCAL WATER QUALITY

UPGRADING WASTEWATER TREATMENT IN VIRGINIA
CONSERVING AND EXPANDING TREE CANOPY FOR CLEANER AND HEALTHIER COMMUNITIES


DANCE - TWO PELICANS DOING WHAT PELICANS DO BEST
Image credit: Raziel Janeway
While the Chesapeake Bay cleanup represents a major focus of water conservation efforts, almost half of Virginia’s rivers and streams do not flow to the Bay. With an overarching goal of cleaner air and water, healthier soils, improved habitats for fish and wildlife, and more lands for Virginians to enjoy, the Commonwealth has must focus on investing in our natural resources. This includes growing economies around our natural resources, gaining a better understanding of the Albemarle-Pamlico Watershed, and keeping plastic and toxics out of our waters.
INVESTING IN VIRGINIA’S NATURAL RESOURCES, HEALTHIER COMMUNITIES, AND JOB CREATION

Virginia has many important natural resource programs, and its state agencies bear serious responsibilities to implement them in a manner consistent with the Constitutional mandate. By increasing appropriations to natural resources to two percent of the general fund, we will be able to make significant progress toward cleaner air and water, healthier soils, improved habitats for fish and wildlife, and more lands for Virginians to enjoy. We will also be able to accelerate Virginia’s recovery from the ravages of the pandemic and economic slowdown, and address long standing concerns over environmental injustice.

Anna Killius // James River Association // akillius@jrava.org
Margaret L. (Peggy) Sanner // Chesapeake Bay Foundation // psanner@cbf.org

UNDERSTANDING THE ALBEMARLE-PAMLICO 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 W. Forget // Executive Director // Lynnhaven River NOW // karen@lrnow.org
Mike Pucci // Executive Director // Roanoke River Basin Association // mcpi0981@gmail.com

PROTECTING VIRGINIA WATERWAYS AND COMMUNITIES FROM FRACKED-GAS PIPELINES

Virginia has seen significant, harmful impacts to its waterways from fracked-gas pipelines. The Virginia General Assembly should prioritize accountability measures for polluters and strengthen protections for Virginia communities and waterways through stricter and more stringent review processes for interstate pipelines.

Jonathan Gendzier // Southern Environmental Law Center // jgendzier@selcva.org
Connor Kish // Sierra Club Virginia Chapter // connor.kish@sierraclub.org
Jessica Sims // Appalachian Voices // jessica@appvoices.org
David Sligh // Wild Virginia // david@wildvirginia.org
REDDICNG PLASTIC POLLUTION
Virginians’ health, communities, and natural areas are under siege from plastics. Plastics are now found in our air, water, and soil. Recycling has been overwhelmingly shown to not be a feasible solution. Our elected officials need to enact efficient waste reduction policies and encourage businesses as well as Virginians to reduce waste generation to protect Virginia residents, communities, and our environment from the scourge of plastic litter.

Elly Boehmer // Environment Virginia // eboehmer@environmentvirginia.org
Zach Huntington // Clean Fairfax // zach@cleanfairfax.org
Mark Swingle // Virginia Aquarium // mswingle@vbgov.com

ELIMINATING TOXICS TO IMPROVE HUMAN AND ENVIRONMENTAL HEALTH
The Commonwealth should identify the risks posed by PFAS, 1,4-dioxane and other emerging contaminants, set drinking water standards that protect human health, and take steps to eliminate sources of contamination. Virginia should also inventory coal refuse piles and develop a remediation plan that safeguards our air, our water, and our soil.

Michael Bochynski // Clean Water Fund // mbochynski@cleanwater.org
Carroll Courtenay // Southern Environmental Law Center // ccourtenay@selcva.org
Kim Jemaine // Virginia League of Conservation Voters // kjemaine@valcv.org
Anna Killius // James River Association // akillius@thejamesriver.org

PROTECTING VIRGINIANS FROM HAZARDOUS CHEMICAL SPILLS
Both the West Virginia law on chemical storage tanks and Virginia's existing law on oil storage tanks can serve as models for new legislation in the Commonwealth. Virginia should take action before it is faced with another catastrophic spill.

Jamie Brunkow // James River Association // jbrunkow@thejamesriver.org
David Flores // Center for Progressive Reform // dflores@progressiverereform.org
Noah Sachs // Center for Progressive Reform // nsachs@richmond.edu
INTRODUCTION
From the iconic Chesapeake Bay to the Piedmont’s rich croplands to the deep forests of the western highlands, Virginia’s diverse natural resources have long sustained the Commonwealth’s economy, the cultural life of our communities and the health and wellbeing of our people. For decades, Virginians have worked to protect these resources; but progress, though real, has been hobbled by unreliable and inadequate funding. Indeed, in terms of general fund dollars committed to natural resources.

Now, as Virginia works to recover from the serious health, economic and justice challenges of 2020, these natural resources programs can play an important role. Ensuring adequate and dedicated funding is an important step.

BACKGROUND
As mandated by the Constitution, Virginia lawmakers have adopted a myriad of programs designed to protect the Commonwealth’s rich and diverse natural resources. To mention only a few, the Chesapeake Bay Watershed Implementation Plan prescribes a detailed plan and timeline for restoration by 2025 that entails significant pollution reduction through improved agricultural practices, wastewater treatment, stormwater and septic management, and other measures. Virginia’s visionary land conservation programs, which help preserve our open spaces, farmlands and forests, include the Virginia Land Conservation Foundation (conserving over 150,000 acres) and the Land Preservation Tax Credit program (conserving approximately 873,000 acres).1

Yet these and other essential natural resources programs have never been adequately or reliably funded. One striking example (among many) is the Virginia agriculture cost-share program which boosts both farmers and water quality by keeping soil on the land and out of streams. Full funding for that program – the most cost-effective program for Bay restoration -- would require approximately $100 million every year, but Virginia has never achieved that level (the average annual appropriation from 2010 to 2019 was $28 million).

Moreover, efficient implementation of these essential programs depends on Virginia’s natural resources agencies – among them, the Department of Environmental Quality (DEQ), the Department of Conservation and Recreation (DCR), the Marine Resources Commission (MRC) and the Department of Wildlife Resources (DWR). Yet, for the last 15 years or more, Virginia lawmakers have repeatedly reduced the funding for these agencies, causing a loss of talented staff and a concomitant reduction in the agencies’ ability to fulfill their environmental protection responsibilities. Indeed, a 2017 study demonstrated that Virginia has ranked near the bottom of the 50 states in funding its natural resources programs.2

In the coming years, the funding shortfalls threaten to become more serious and harmful. Meeting 2025 goals for Bay restoration will require accelerated efforts to meet difficult challenges. Measures to mitigate climate change effects and bolster the resiliency of coastal and upland communities are increasingly exigent. And ensuring that environmental justice is incorporated into all our natural resources programs, as required by the Virginia Environmental Justice Act, is non-negotiable.

Adequate and reliable funding for environmental justice initiatives at Virginia’s natural resources agencies will ensure that our environmental programs are delivered both efficiently and equitably. This includes at least $100,000 for the newly codified Council on Environmental Justice and for an office to ensure a just transition to a clean energy economy in Virginia. It also includes dedicated staff and training at all natural resources agencies to facilitate better community engagement and environmental justice analyses early in decision-making.

Prior to the advent of the COVID-19 pandemic, Virginia’s leaders had begun to address the glaring funding challenges. In April 2018, Governor Northam committed to increasing threefold the percentage of state funds appropriated for natural resources appropriations from the current 0.6% to 2%. In early 2020, the General
Assembly passed a budget that made progress toward that goal.

We firmly support Virginia lawmakers as they work to bring Virginia and its residents to full recovery from these grave challenges and to move the Commonwealth forward to address critical needs like environmental justice. Indeed, support for natural resources and environmental justice programs should be recognized as indispensable elements of this recovery work.

The economic benefits of natural resources programs are well documented. For example, spending on natural resources infrastructure like wastewater treatment plant upgrades and effective stormwater management projects directly support job creation. Appropriations for other natural resources programs create spinoff economic benefits. For example, recent studies have shown that each dollar spent on agricultural conservation practices, and each dollar spent on land conservation, leads to a return of $4. Outdoor recreation in Virginia supports 197,000 direct jobs and over $1 billion in state and local tax revenue. Virginia’s state parks and natural areas support 10 million annual visits, generating $267 million in positive economic impact and supporting over 3,800 jobs.

Moreover, healthy natural resources provide substantial benefits for human health and well-being and, therefore, to our quality of life. A 2014 economic study concludes that if all the practices necessary to achieve Bay cleanup goals by 2025 were implemented, Virginia will reap an additional $8.3 billion annually in economic benefit, with $3.6 of that amount arising from enhanced “aesthetic” benefits — i.e., qualities that attract people to live, work and play in the region. Improved water quality will enhance Virginia’s commercial seafood industry, which was valued at $179 million in 2018. Similarly, enhanced funding for state parks (to build bathrooms, piers, campgrounds and the like) and to improve water access throughout the Commonwealth will encourage people to be involved in healthy and enjoyable outdoors activities.

**CONCLUSION**

Virginia has many important natural resource programs, and its state agencies bear serious responsibilities to implement them in a manner consistent with the Constitutional mandate. By increasing appropriations to natural resources to two percent of the general fund, we will be able to make significant progress toward cleaner air and water, healthier soils, improved habitats for fish and wildlife, and more lands for Virginians to enjoy. We will also be able to accelerate Virginia’s recovery from the ravages of the pandemic and economic slowdown, and address long standing concerns over environmental injustice.

**POLICY RECOMMENDATIONS**

- **Fund key water quality programs at levels** consistent with achieving the goals of the Watershed Implementation Plan (see chapter Meeting Our Chesapeake Bay Clean-Up Goals, p. 1).
- **Fund land conservation programs** (see Healthy, Resilient Communities and Landscapes, p. 88).
- **Increase funding for key state environmental agencies** to levels adequate with programmatic needs, including programs to address resiliency and climate change needs.
- **Fund and ensure rapid and thorough** integration of environmental justice mandates. See additional recommendations in Working Towards Environmental Justice (p. 118).
- **Ensure Virginia’s natural resources programs** are adequately and reliably funded going forward by adopting dedicated funding mechanisms, such as application of the full statewide recordation fee revenue (see Exploring Dedicated Funding for Conservation, p. 94).
Understanding the Albemarle-Pamlico Watershed and Planning for the Future
Karen Forget // Lynnhaven River NOW | Mike Pucci // 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 percent of Virginia’s land area in the Albemarle-Pamlico watershed and the increasing challenges to the health of this system, there is a critical need for baseline data to support effective planning in the Albemarle-Pamlico Watershed. This data will help communicate among the cities and counties in Virginia that make up this watershed as well as a mechanism for communication and planning with our partners in North Carolina.

Background
The Virginia Albemarle-Pamlico watershed includes thirty-eight Virginia counties and cities and roughly 10,500 square miles in the southern portion of our state – 25 percent of the land area of Virginia. 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 two million Virginians.

The Albemarle-Pamlico watershed contains many different ecosystems and 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 piedmont. Some of these plant and animal species are not found anywhere else in Virginia and several are 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 Watershed 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 a 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 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. Combined with increased precipitation and bigger storms, there are unique environmental and economic implications for this area of the watershed.

Concerns in the western region of the watershed, made up of the Roanoke River Basin, echo those of the eastern part related to adaptation and climate change. Abundant clean water is a vitally important resource for this region, providing safe drinking water and supporting the agricultural economy. In addition, the area’s rivers and rural character provide an opportunity to develop outdoor recreation and tourism – another important part of the economy. 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 habitats, 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 best management practices (BMP) projects;
- Map/data of conserved lands and existing riparian buffers compared to needs; and,
- 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**

The Commonwealth should fund a study of the Albemarle-Pamlico Watershed within DEQ. 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 residents and the natural resources on which we depend in the Albemarle-Pamlico watershed of Virginia.
INTRODUCTION
Virginia communities and waterways have endured the harmful impacts of pre-construction and construction of the ruinous 42” diameter fracked-gas Mountain Valley pipeline and the now-cancelled Atlantic Coast pipeline (MVP and ACP, respectively) for years. Since 2017, activities on the MVP have resulted in over 300 water quality violations, a lawsuit from Virginia’s Attorney General, damaged karst areas, caves and wells, mudslides, significant erosion on Southwest Virginia’s steep, mountainous slopes, pending litigation and multiple vacated permits. The Mountain Valley pipeline shares many attributes with the Atlantic Coast pipeline, cancellation of which was long overdue. The ACP was unneeded for the market, billions over budget, years behind schedule, environmentally unjust and missing multiple federal permits. While ACP cleared trees but did not break ground in Virginia, the harmful impacts of MVP construction to date overwhelmingly demonstrate that current review, permitting, and mitigation measures for a project of this size and scope are dangerously inadequate. Construction of the MVP has done and will continue to do grave harm to communities and the environment. The project does not comport with a clean energy future for Virginia and the region, and it, too, should be cancelled.

BACKGROUND
Before state water quality certifications were issued in 2017 for the controversial Mountain Valley and Atlantic Coast pipelines, the public, including directly impacted community members and experts in various fields, warned that water quality standards would be violated by construction through Virginia. They showed that both proposed routes would disproportionately affect communities of color, Indigenous communities and low-income communities. These warnings have materialized during MVP construction, with water quality degradation and resulting harm to ecosystems, farms, forests, and livelihoods.

Ongoing, systemic pollution problems caused by MVP have resulted in more than 300 violations cited in a state enforcement lawsuit, which led to a consent decree and a $2M fine. Since then, DEQ has reported additional water quality violations. MVP currently lacks multiple Federal permits and the Federal Energy Regulatory Commission has approved variances allowing different crossing methods for dozens of streams, without reviews by DEQ or proper studies. If MVP, now nearly $2B over budget, were completed and operational, communities along the route in Giles, Craig, Montgomery, Franklin, Roanoke and Pittsylvania Counties would face the threat of explosions, continued erosion and sediment contamination of public and private water supplies, and additional negative effects on tourism, agriculture and outdoor recreation-based economies.

THE FLAWED REVIEW PROCESS FOR THE MOUNTAIN VALLEY PIPELINE MIRRORS THE ACP AND IT IS CURRENTLY MISSING MANY OF THE SAME FEDERAL PERMITS. WITHOUT A DOUBT, IT HAS ALREADY SIGNIFICANTLY HARMED VIRGINIA COMMUNITIES AND WATERWAYS.

The ACP, canceled in July 2020, was more than $2B over budget, years behind schedule, missing eight required permits and was a stunning example of the egregiously flawed regulatory review process. Inadequate environmental justice review concerns over Dominion’s siting of the Buckingham Compressor Station in the historic Black community of Union Hill resulted in the federal Fourth Circuit Court of Appeals vacating the State Air Permit. It took this ruling for the Commonwealth, and Dominion, to acknowledge the existence of the historic Black community of Union Hill as an environmental justice community. Dominion aggressively pushed its preferred siting of this Buckingham Compressor Station after conducting wholly inadequate environmental justice and public health reviews. The Virginia Air Pollution Control Board improperly approved Dominion’s air permit on the recommendation of DEQ staff and leadership. Dominion failed to produce studies showing an actual need for the ACP, and analysts had highlighted the increasing unlikelihood of ACP’s completion due in part to fracked gas and electricity supply economics and impacts of 2020 Virginia legislation mandating increased use of renewables.

The flawed review process for the Mountain Valley Pipeline mirrors the ACP and it is currently missing many of the same Federal permits. Without a doubt, it has already significantly harmed Virginia communities and waterways.
If completed, MVP could introduce 50 million tons per year of Greenhouse Gas emissions, long-term slope and soil instability, permanent forest and habitat loss and ongoing water quality impacts.\(^6\)\(^7\)

**CONCLUSION**

Virginia has seen significant, harmful impacts to its waterways from fracked-gas pipelines. The Virginia General Assembly should prioritize accountability measures for polluters and strengthen protections for Virginia communities and waterways through stricter and more stringent review processes for interstate pipelines.

**POLICY RECOMMENDATIONS**

**Define the “adverse impacts” listed in Va.**

Code § 62.1-44.15:581.A. to include water quality conditions that will justify stop-work orders and allow work to be stopped on larger areas, where violations have been widespread and repeated.

**Require new sedimentation plans or project analyses**, via State Water Control Board review or third party review, if significant impacts from, or changes to, original plans are identified, thus requiring a stop-work order for the full project during the review period.

**Lower from 36 inches to 24 inches in diameter**

the threshold for interstate pipeline projects that require a Clean Water Act Section 401 certification comprising both a Virginia Water Protection permit and an upland certification.

**Require Virginia review and DEQ approval for pipeline variances**, that have been submitted to FERC, affect water quality or impact the 401 certification.

**Prohibit oil and gas pipelines from relying**

on Nationwide Permit 12 by requiring the State Water Control Board to issue only partial Clean Water Act Section 401 certifications for future versions of NWP 12, which do not certify NWP 12 for use by oil and gas pipelines that are 24 inches in diameter or greater. This would, in effect, require such pipelines to seek Section 404 individual permits, which the SWCB would then have the opportunity to certify under Section 401.

**Require additional criteria for Clean Water Act 401 certification**

by DEQ, including a condition that all federal and state permits must be obtained and effective before the certification becomes effective.
INTRODUCTION
The health of Virginia’s rivers and streams is vital to a strong economy. A healthy Chesapeake Bay Watershed has an economic value of $129.7 billion to the region. The General Assembly took a notable first step in 2020 to reduce the overwhelming amount of plastic waste that is entering our communities, agriculture lands, and waterways. Providing localities with the authority to place a fee on single use plastic bags will enable them to craft policies that will reduce litter in Virginia. With the litter tax increased for the first time in 43 years, communities will be better funded to remove litter and institute effective waste reduction programs. However, two major sources of plastic pollution still need to be addressed in Virginia: balloons and Expanded Polystyrene (EPS) foam food service containers (also known as Styrofoam).

BACKGROUND
Plastic litter has wide-ranging destructive impacts on human health, wildlife, water infrastructure, and agricultural land. The direct cost of litter clean up is substantial. The Virginia Department of Transportation spends $6.5 million a year picking up litter on roadways.

Plastic litter is harming Virginia’s agricultural land. Microplastics remain in the soil for decades, harming the natural flora of the soil and degrading soil quality. Researchers have also discovered that microplastics can contribute to low crop yields. Meanwhile, toxic chemicals from ingested plastic damage the health of livestock and even spread to humans through the consumption of milk and meat products.

Wildlife – including turtles, birds, fish, mammals, and important filtering bivalves like oysters and mussels – often mistake plastic items for food. This is particularly prevalent in the use of plastic balloons – one of the most harmful and deadly litter items to wildlife. Burst balloons closely resemble jellyfish, a favorite food of sea turtles and other marine animals. Balloon ribbons also easily entangle birds and cause lasting damage. Unfortunately, intentional balloon releases, which are legal in Virginia, litter our waterways and landscapes with deadly plastic waste.

EPS foam containers for takeout food and beverages are another major source of plastic pollution in Virginia. Made of styrene, a known hazardous substance linked to various types of cancer, EPS foam is a petrochemical derived product that is a serious concern for human health and wildlife. Toxic chemicals from EPS foam containers can leach into food and drinks and then be ingested, especially when the food or beverage is served hot. People who work in areas with high concentrations of styrene have increased rates of cancer, neurological issues, and depression. For low-income communities and communities of color, this concern is especially acute. Often suffering from insufficient access to grocery stores with affordable and nutritional food, these communities are forced to rely on fast food options, which are often stored in EPS containers.

The chemical industry has argued that recycling is the solution to their harmful products, but the New York City Department of Sanitation recently determined that EPS foam food containers cannot be recycled in a manner that is economically feasible or environmentally effective for New York City. Global plastic production is projected to quadruple between 2014 and 2050. We cannot recycle our way out of this problem; we must find solutions to reduce plastic at the source.

Eliminating the production and consumption of single-use plastic products is an effective way to reduce plastic pollution and combat this global crisis. After the California cities of Santa Cruz and Pacific Grove banned EPS foam food containers, EPS litter on local beaches decreased by as much as 71 percent. And it’s possible to replace EPS food containers with a minimal increase to cost – on average, plastic-free alternatives are only $0.01 more expensive.

During the COVID-19 pandemic, the plastics industry has raised concerns over the risk of transferring the virus through reusable food containers and other packaging. The Centers for Disease Control (CDC) has recognized that the virus spreads through respiratory droplets and that transmission of the virus from surface contact has never been documented. It is possible...
to decrease use of single-use plastics in a safe and sanitary measure, and this should not deter work to combat plastic pollution.

CONCLUSION
Virginians’ health, communities, and natural areas are under siege from plastics. Plastics are now found in our air, water, and soil. Recycling has been overwhelmingly shown to not be a feasible solution. Our elected officials need to enact efficient waste reduction policies and encourage businesses as well as Virginians to reduce waste generation to protect Virginia residents, communities, and our environment from the scourge of plastic litter.

POLICY RECOMMENDATIONS

Ban the use of expanded polystyrene food service containers. HB 533 passed the 2020 General Assembly with a reenactment clause requiring the bill to be confirmed in 2021.

Address balloon releases by amending Virginia’s current law and making the intentional outdoor release of any balloons illegal and subject to a civil penalty. Exceptions would be made for state or federal agency purposes, such as weather balloons.
INTRODUCTION
Toxic substances are a threat to our environment and our health. Whether they are the legacy products of our society’s reliance on fossil fuels, or man-made chemicals of emerging concern, toxics can pollute our air, leach into our soil, and contaminate our water. Once they enter the human body, these toxic substances have been linked to cancer, infertility, and other health impacts. Virginia should take action to identify the risks posed by toxics, particularly those detailed below, eliminate new sources of contamination, and remediate existing ones, so that all communities benefit from clean air, clean water, and healthy soil.

BACKGROUND
SAFEGUARDING OUR COMMUNITIES AND ENVIRONMENT FROM TOXIC EMERGING CONTAMINANTS
“Emerging contaminants” are chemicals that do not yet have water quality or drinking water standards but for which there is emerging concern about their effect on human health and the environment. Per- and polyfluoroalkyl substances (PFAS), a family of thousands of man-made chemicals, represent potent examples of emerging contaminants. PFAS are toxic, bioaccumulative, and extremely persistent.¹ Studies suggest that human exposure to these chemicals may adversely affect fertility, raise cholesterol levels, and increase the risk of some forms of cancer.² We can come into direct contact with PFAS through its usage in items like waterproof gear, food packaging, firefighting foam, and non-stick pans. But PFAS can also reach our rivers and streams--and ultimately our drinking water--through stormwater and industrial wastewater.

Recognizing the significant risks posed by PFAS contamination, the 2020 General Assembly passed legislation directing the Department of Health to conduct a two-year study on the toxicity of PFAS and its prevalence in our drinking water.³ Additional legislation that takes effect at the end of the study period directs the State Board of Health to establish “maximum contaminant levels,” which regulate how public drinking water providers identify and treat harmful substances, for PFAS, and for two other emerging contaminants: chromium-6 and 1,4-dioxane.⁴

State lawmakers should ensure that the PFAS drinking water study is comprehensive, transparent, and completed on time. But the most effective and equitable way to protect our drinking water is to keep these contaminants out of our communities in the first place. A study by the Union of Concerned Scientists found that low income communities and communities of color were more likely to live within five miles of a site contaminated by PFAS.⁵ Virginia should make every effort to eliminate PFAS and other emerging contaminants of concern from potential sources like wastewater and food packaging before these chemicals reach the environment in order to protect socially vulnerable communities, preserve our waterways, and avoid costly water treatment efforts that raise utility rates.

PROTECTING OUR AIR AND WATER FROM LOW QUALITY COAL REFUSE
Similarly, coal refuse stands as a long overlooked environmental hazard. Coal refuse – also known as coal waste, waste piles, or gob piles – refers to the raw material that remains when coal is cleaned and prepared for the market. Coal refuse is the low-quality coal which is then mixed with rock, clay, shale, slate, and other materials. This mixture often contains elevated levels of mineral pyrite, making it a dangerous source of polluted acid mine drainage, surface runoff, and leachate.⁶ These piles are the legacy of the coal industry and are left heaped on acres of abandoned mine lands. These areas are not only highly erosive, but are harmful to plant life and ecosystems, and contaminate water.

Once they enter the human body, these toxic substances have been linked to cancer, infertility, and other health impacts.

While federal legislation passed in the 1970s called for reclamation of these sites, the reality is that by the time legislation was finally enacted, many of the mining operations had been abandoned, leaving mounds of coal refuse. As a result, states like Pennsylvania have turned to unsafe remediation methods like burning the refuse as a low quality energy source. While such efforts are touted as a way to generate energy while restoring waterways and reclaiming land, they offer local communities a false choice.⁷ Coal refuse contains higher concentrations of mercury, uses more energy
to combust, and releases harmful particulates.\textsuperscript{8} Southwest Virginia should not have to choose between cleaner air and cleaner water.

As Virginia works toward a new clean energy future, harmful solutions to gob pile remediation are unacceptable. Virginia’s Department of Mines, Minerals and Energy (DMME) should work with the Department of Environmental Quality (DEQ) to identify the breadth of gob piles in the Commonwealth and develop an environmentally and economically responsible plan for remediation.

**CONCLUSION**

The Commonwealth should identify the risks posed by PFAS, 1,4-dioxane and other emerging contaminants, set drinking water standards that protect human health, and take steps to eliminate sources of contamination. Virginia should also inventory coal refuse piles and develop a remediation plan that safeguards our air, our water, and our soil.

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**POLICY RECOMMENDATIONS**

**Ensure that the Department of Health**

conducts a comprehensive, transparent, and timely PFAS drinking water study, paying particular attention to communities most at risk of contamination, and sets maximum contaminant levels for PFAS compounds that adequately protect public health.

**Identify and eliminate potential pathways**

for PFAS contamination. This could include explicitly addressing PFAS contamination in: (i) wastewater permit and industrial pretreatment programs; (ii) land-applied biosolids; (iii) landfill leachate; (iv) air pollution; and/or (v) food packaging.

**Identify other emerging contaminants,**

such as 1,4-dioxane, that may be of particular concern in the Commonwealth and assess how to control these chemicals in order to protect human health and the environment.

**Direct DMME in conjunction with DEQ to**

identify, inventory, and implement water quality testing of remaining coal refuse sites in Virginia. Further direct these agencies to develop an environmentally and economically responsible plan for remediation that prevents inefficient energy production from low-quality coal combustion.
INTRODUCTION
Throughout the Commonwealth, thousands of manufacturers and other businesses store hazardous chemicals in aboveground storage tanks. The quantity, location, contents, age, and condition of chemical storage tanks are unknown because owners are not required to register their tanks with the 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. The discrepancy in how we regulate tanks containing petroleum and tanks containing hazardous chemicals is fundamentally flawed. Spills from both types of tanks pose a substantial risk of harm to public health and natural resources, including drinking water.

BACKGROUND
There are likely tens of thousands of aboveground chemical storage tanks in Virginia, with many of them located near waterbodies because of the concentration of industry along our rivers. However, because Virginia does not implement even a registration program for these tanks, state regulators have no idea how many tanks there are, exactly where they are located, or their condition and contents. As a result, there are likely risks posed by these tanks to vulnerable communities already burdened by industrial pollution that cannot be ascertained.

The Center for Progressive Reform’s 2019 Toxic Floodwaters report identified over 1,000 industrial facilities in the James River basin that are exposed to flooding risks from rivers, storm surge, or sea level rise. The analysis focused on facilities located in communities that are among the most socially vulnerable to disaster. Socially vulnerable communities are those that need the most support in preparing for hazards or recovering from disaster, based on the Centers for Disease Control and Prevention’s ranking of 15 factors, including poverty, lack of vehicle access, and crowded housing. The report found major data gaps for unregulated aboveground 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 does not require inspections and lacks both a comprehensive inventory of these tanks and does not regulate their construction or siting.

In 2015, the General Assembly was sufficiently concerned about these risks and unanimously passed SB811, a law requiring DEQ to study the risks and the need for regulation. 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 sources;
- 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 inventories for chemical storage tanks within the same watershed as the water system.

It is now time to implement DEQ’s recommendations. A new regulatory program for these tanks should include inventory, registration, inspection, and financial security requirements. The State Water Control Board should be empowered to enact detailed regulations. Inspections should be conducted by professional engineers, not DEQ staff, to keep down the cost of the program.

STATE REGULATORS HAVE NO IDEA HOW MANY TANKS THERE ARE, EXACTLY WHERE THEY ARE LOCATED, OR THEIR CONDITION AND CONTENTS.

The need for such a program is clear. Catastrophic spills from hazardous chemical tanks have already occurred in Virginia. In 2008, a tank containing two million gallons of liquid fertilizer collapsed at a facility in Chesapeake, flooding nearby residential communities and contaminating the Elizabeth River with 200,000 gallons of fertilizer. Two workers were injured, requiring hospitalization, and residents were exposed to toxic ammonia vapor. After the spill, Virginia adopted rules...
for only the largest aboveground fertilizer storage tanks in 2010.

Other states are far ahead of Virginia on this issue. In 2014, a chemical spill in Charleston, West Virginia contaminated the regional water supply, leaving more than 300,000 residents without access to drinking water. The tanks involved had corroded, the site had not been inspected by officials in 23 years, and the tanks were not regulated by the state or EPA. The spill caused devastating economic impacts, including week-long hotel and business closures in Charleston.

West Virginia quickly enacted a comprehensive chemical tank law, including siting standards, construction standards, and special provisions to protect water supplies. The state has since compiled an inventory of over 42,000 aboveground 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 six times larger than West Virginia’s, so the number of 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 can serve as models for new legislation in the Commonwealth. Virginia should take action before it is faced with another catastrophic spill.

POLICY RECOMMENDATIONS

The General Assembly should direct DEQ to establish a program for registration and regulation of aboveground 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;
- Inspections;
- Specifications for siting and construction of new tanks; and
- Planning and implementation of measures to prevent and mitigate chemical spills from the largest and most dangerous hazardous chemical tanks.

The General Assembly should direct DEQ to ensure that the program is responsive to findings about flood risk of chemical storage facilities. The legislation may require, for example, that facilities create spill prevention plans that are responsive to the flood risks, including the intensification of flooding expected to occur due to climate change.
INVESTING IN VIRGINIA’S NATURAL RESOURCES, HEALTHIER COMMUNITIES, AND JOB CREATION


PROTECTING VIRGINIA WATERSWAYS AND COMMUNITIES FROM FRACKED-GAS PIPELINES


A STORM ROLLS OVER CRAWFORD'S KNOB AND LAKE MONOCAN
IN WINTERGREEN, VA.

Image credit: James Ogletorpe

REDUCING PLASTIC POLLUTION
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ELIMINATING TOXICS TO IMPROVE HUMAN AND ENVIRONMENTAL HEALTH
5 Genna Reed, PFAS Contamination is an Equity Issue, and President Trump’s EPA is Failing to Fix It, Union of Concerned Scientists (Oct. 30, 2019, 8:49 AM), https://blog.ucsusa.org/genna-reed/pfas-contamination-is-an-equity-issue-president-trumps-epa-is-failing-to-fix-it.

PROTECTING VIRGINIANS FROM HAZARDOUS CHEMICAL SPILLS
A 22-ACRE SOLAR PROJECT.
Image credit: Will Parson, Chesapeake Bay Program
In the past year, Virginia has enacted significant policy to move the Commonwealth towards a clean energy future. With the passing of the Virginia Clean Economy Act, the state is on a path to zero carbon emissions from the energy sector by 2050. Through the Clean Energy and Community Flood Preparedness Act, Virginia joined the Regional Greenhouse Gas Initiative. In order to meet those lofty goals, we must defend and expand upon these clean energy commitments, including putting an end to fracked-gas pipelines, ramping up energy efficiency and solar investments, and ensuring an equitable clean energy economy.
DEFENDING OUR ZERO-CARBON ENERGY GOALS
The key to rebuilding Virginia’s economy is not to go backwards; it lies in moving forward and expanding upon the success from the 2020 session. The legislature must oppose any attempts to unwind the Clean Energy and Community Flood Preparedness Act, the Virginia Clean Economy Act, or other legislation that advances the clean energy economy.

Will Cleveland // Southern Environmental Law Center // wcleveland@selcva.org

INVESTING IN VIRGINIA’S ENERGY EFFICIENCY
Virginia should enact robust policies that increase energy efficiency across all sectors in the Commonwealth. Reducing energy burdens is especially important for low-income and overburdened households. Virginia should allow local governments to impose stronger efficiency measures within their jurisdictions. Failing to improve energy efficiency will burden Virginians, our health, environment and economy for decades.

Lena Lewis // The Nature Conservancy // lena.lewis@tnc.org
William Penniman // Sierra Club Virginia Chapter // bill.penniman@gmail.com

ENSURING OFFSHORE WIND BENEFITS ALL VIRGINIANS
To capture the job-creating and economic benefits of offshore wind development, a robust and diverse workforce in Virginia must be readied. To help ensure that offshore wind is brought online as affordably as possible, we must also ensure that offshore wind is composed of American made parts.

David Carr // Southern Environmental Law Center // dcarr@selcva.org
Tyneshia Griffin // New Virginia Majority // tgriffin@newvirginiamajority.org
Eileen Woll // Sierra Club Virginia Chapter // eileen.woll@sierraclub.org
PROTECTING VIRGINIA FROM NEW FOSSIL FUEL INFRASTRUCTURE
Expansion of fossil fuel infrastructure runs counter to the equitable treatment of Virginians, and to the necessary steps to mitigate the climate crisis. State agencies and legislators must hold polluters accountable, ensure protective measures for Virginia’s waterways, authentically engage and include resident stakeholders in transparent decision-making, and critically examine the need for new, extractive fossil fuel infrastructure that promises to harm Virginians.

Connor Kish // Sierra Club Virginia Chapter // connor.kish@sierraclub.org
Kim Jemaine // Chesapeake Climate Action Network // kim@chesapeakeclimate.org
Mary-Stuart Torbeck // Sierra Club Virginia Chapter // mary-stuart.torbeck@sierraclub.org

BUILDING AN EQUITABLE CLEAN ENERGY ECONOMY FOR COMMUNITIES AND WORK
Virginia has made great strides in addressing the challenge of climate change, but the Commonwealth must prioritize the needs of people and communities in the clean energy transition to ensure it is just, reaches our full clean energy potential, and addresses the harms of the extractive and destructive fossil-fuel industry, consistent with the principles of environmental justice. We must optimize this moment in order to connect low-income and frontline communities to healthier environments, new jobs, and economic opportunities in the clean energy economy.

Chelsea Barnes // Appalachian Voices // chelsea@appvoices.org
Mary Cromer // Appalachian Citizens Law Center // mary@aclc.org
Kim Jemaine // Virginia League of Conservation Voters // kjemaine@valcv.org
Rebecca Shelton // Appalachian Citizens Law Center // rshelton@aclc.org

A WIND TURBINE PROVIDES POWER TO THE LEARNING BARGE WHILE EVACUATED TUBES ABSORB SOLAR ENERGY THAT HEATS WATER ON THE BARGE, DOCKED AT GRANDY VILLAGE LEARNING CENTER IN NORFOLK, VA.
Image credit: Will Parson, Chesapeake Bay Program
INTRODUCTION
Climate change is the greatest environmental concern of our time. While Hampton Roads is the second most vulnerable spot in the nation to sea level rise, Virginians across the Commonwealth – from the Shenandoah Valley to Southside to the coalfields – will see life altered by changing weather patterns, recurrent flooding, and atypical temperatures. Although transportation is the single greatest economic sector contributing to climate altering carbon emissions, the energy sector is close behind. While there is much yet to do on transportation, Virginia took massive strides in the 2020 session, and we must defend those victories going forward.

BACKGROUND
The 2020 legislative session delivered paradigm-shifting victories for climate advocates. First, the General Assembly passed the Clean Energy and Community Flood Preparedness Act (HB981/SB1027), which in addition to securing both coastal resiliency and expanding programs for low-income communities and businesses in climate change hotspots, places a firm cap on carbon emissions from covered fossil fuel power plants and authorizes Virginia to join the Regional Greenhouse Gas Initiative (RGGI). The initiative represents a coalition of ten Northeast and mid-Atlantic states that have banded together in the absence of federal climate policy to reduce carbon emissions on a regional scale. Virginia’s participation in the RGGI carbon markets will reduce carbon emissions by 30 percent by 2030.

Building upon that success, the legislature also passed HB1526/SB851, the Virginia Clean Economy Act (VCEA). The VCEA stands on four key pillars: (1) mandatory retirement of Dominion and Appalachian Power’s entire carbon-emitting generation fleet by 2045 (with interim, earlier targets for certain coal, oil, and biomass units). Additionally, the legislation creates an expanded cap and trade program that applies to all in-state power plants, regardless of owner or fuel type, that will eliminate carbon emissions from power plants throughout the Commonwealth by 2050; (2) a mandatory energy efficiency resource standard; (3) a six-fold increase in rooftop solar (known as “net metering”); and (4) a mandatory renewable portfolio standard to spur investment in utility-scale solar, offshore wind, and energy storage. By 2050, Virginia’s entire power generation fleet will be carbon-free. The VCEA is also one of the first climate mitigation policies to directly involve the consultation of the Virginia Environmental Justice Advisory Council in its long-term development, implementation, and oversight. The General Assembly also passed HB528, which restores to the State Corporation Commission the full power to manage ratepayer costs of carbon-emitting power plants that become “stranded” through early retirement, likely saving vulnerable ratepayers hundreds of millions of dollars on their future electricity bills.

Due to the economic recession caused by COVID-19, many opponents of clean energy and climate advocacy will argue that Virginia can no longer afford to implement these pieces of legislation. On the contrary, the VCEA will spur dramatic investment in rooftop solar, offshore wind, energy storage, large-scale solar farms, and – perhaps most importantly – energy efficiency. Energy efficiency employs thousands of skilled workers in a range of fields, including HVAC, lighting, ductwork, and building insulation.

Concerns about ratepayer costs are valid, but the problem is not in climate legislation; the cause lies in Virginia’s regulatory scheme that prevents the State Corporation Commission from actually setting utility rates at a fair and equitable level. The bipartisan Fair Energy Bills Act (HB1132) would have remedied that problem, but the legislation unfortunately died in Senate Commerce and Labor, despite passing the House with broad bipartisan support (see Reforming Electric Utility Regulations, p. 128).

DEFENDING OUR ZERO-CARBON ENERGY GOALS
Will Cleveland // Southern Environmental Law Center

THE KEY TO REBUILDING VIRGINIA’S ECONOMY IS NOT TO GO BACKWARDS; IT LIES IN MOVING FORWARD AND EXPANDING UPON THE SUCCESS FROM THE 2020 SESSION
CONCLUSION
The key to rebuilding Virginia's economy is not to go backwards; it lies in moving forward and expanding upon the success from the 2020 session. The legislature must oppose any attempts to unwind the Clean Energy and Community Flood Preparedness Act, the Virginia Clean Economy Act, or other legislation that advances the clean energy economy.

POLICY RECOMMENDATIONS

Oppose any legislation to repeal or weaken any policies that promote carbon-free power generation, including the Clean Energy and Community Flood Preparedness Act or the Virginia Clean Economy Act.

Build upon the Clean Economy Act by expanding and imposing longer-term, more stringent energy efficiency mandates, and expanding the renewable energy portfolio requirements to Old Dominion Power, electric cooperatives, and municipal utilities to ensure all Virginians can access clean energy.

Pass ratepayer protective legislation like the Fair Energy Bills Act to ensure customers never pay more than is fair for their electricity.
INTRODUCTION
One of the most potent yet underutilized tools we have to reduce our dependence on fossil fuels is energy efficiency. Energy efficiency—achieving the same output with less energy—is the least expensive way to meet consumers’ energy needs. It lowers customer bills, creates thousands of local jobs, and reduces all environmental and health impacts of energy generation. If we were to fully tap into available energy efficient technology, we could reduce carbon dioxide emissions by 50 percent by 2050.1 While important progress was made in the 2020 legislative session, there is more to be done.

BACKGROUND
VIRGINIA’S ENERGY EFFICIENCY PROBLEM
Unnecessary energy use and pollution harms Virginians across the board – in their wallets, health, and environment - and, Virginia remains far behind most states in energy efficiency achievements.\(^2\) Avoidable energy usage disproportionately impacts low-income individuals and African-American and Latinx households.\(^1,3\) A 2013 study found that Virginia could gain about $3.50 for each $1.00 invested in energy efficiency.\(^3\) The Virginia Clean Economy Act (VCEA) will help close the efficiency gap but more is needed to reach Virginia’s full energy efficiency potential.

Energy efficiency comes in many forms, such as more efficient heating/cooling systems, upgrading of appliances, and tighter building envelopes. The least-cost opportunities to maximize a building’s efficiency occurs when it is constructed or rehabilitated and when major systems (like heating and air) are replaced - Virginia’s building codes should reflect this reality.

REACHING EFFICIENCY POTENTIAL REQUIRES GOVERNMENT LEADERSHIP
Though investing in efficiency saves money over the long term, barriers impede uptake. Energy users are often discouraged by upfront costs of efficiency improvements and tenants of rental properties do not control upgrades of buildings’ efficiency. Builders can also have misaligned incentives – when they lower their building costs by using less efficient materials, future residents pay higher energy bills for decades. For utilities, growing total energy loads remains central to their business model. Government has an essential role to play in overcoming these barriers. The VCEA includes an Energy Efficiency Resource Standard (EERS) that directs investor-owned electric utilities to meet annual energy efficiency targets through 2025. Virginia can build upon this major success by expanding the EERS to natural gas and municipal and electric cooperative utilities. The EERS does not mandate efficiency standards beyond 2025, leaving that to the State Corporation Commission (SCC), which has not strongly supported efficiency in the past. The annual targets in Virginia’s EERS are lower than in a number of other states, demonstrating that higher standards are achievable. Legislation setting ambitious, achievable targets far into the future for all electric and gas utilities would ensure that utilities include efficiency in their long-term planning.

VIRGINIAN’S DESERVE ENERGY EFFICIENT BUILDINGS
Highly efficient building codes for new and rehabilitated buildings are critical to saving energy, lowering bills, and reducing carbon emissions. Buildings consume 40 percent of total energy and 70 percent of electric energy in the United States.\(^8\) Unfortunately, Virginia’s building code has been less energy efficient than the International Code Council’s model energy conservation code for many years. That problem is made worse because the Dillon Rule prohibits local governments from requiring higher efficiency levels for building construction and rehabilitation within their jurisdictions. Low- and moderate-income residents are among those who are hurt the most by higher energy costs in inefficient buildings, as they often live in aging, energy inefficient housing and pay a high energy burden.

IF WE WERE TO FULLY TAP INTO AVAILABLE ENERGY EFFICIENT TECHNOLOGY, WE COULD REDUCE CARBON DIOXIDE EMISSIONS BY 50 PERCENT BY 2050.

Energy burden is defined as the percent of gross household income spent on energy costs (not including transportation). A widely accepted threshold for what constitutes an affordable energy burden is six percent.\(^4\) Unfortunately, many Virginians’ energy burden is nearly double. Building code policy should prioritize improvements that will reduce the energy burden on our most vulnerable residents.
CONCLUSION
Virginia should enact robust policies that increase energy efficiency across all sectors in the Commonwealth. Reducing energy burdens is especially important for low-income and overburdened households. Virginia should allow local governments to impose stronger efficiency measures within their jurisdictions. Failing to improve energy efficiency will burden Virginians, our health, environment and economy for decades.

POLICY RECOMMENDATIONS

Extend and strengthen the EERS beyond 2025 so that utilities have clear planning guidance and the public is assured that there will be strong standards farther into the future.

Require natural gas utilities and non-investor-owned utilities to meet appropriate EERS targets.

Implement a robust state revolving fund to finance efficiency measures by local governments, schools and possibly others, and ensure that a portion of the funds reach low-income, African-American, and Latinx communities. These funds should also finance basic repairs that are prerequisite to energy efficiency improvements.

Decouple utility profits from energy sold, freeing utilities to prioritize energy efficiency.

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.

Net-zero energy and carbon goals should be incorporated into building codes or otherwise incentivized to the greatest extent possible.

Require – or allow local governments to require - building landlords and sellers to publicize average energy costs.
INTRODUCTION
In 2020, Virginia was the first state in the nation to stand offshore wind turbines in federal waters. With its Coastal Virginia Offshore Wind project, Virginia is also in line to be home to the nation’s largest offshore wind project. Offshore wind is happening here in Virginia, and it is happening now. In 2021, we must ensure that offshore wind is implemented responsibly and brought online in a way that is fair, equitable, and provides benefits for all Virginians.

BACKGROUND
Offshore wind can provide clean energy at the scale necessary to meet Virginia’s 100 percent clean energy goals. With a national record of avoiding 189 million tons of CO₂ emissions since 2001, wind energy in Virginia will improve public health and wellness, and confront the climate crisis head-on.¹ If implemented responsibly, this renewable energy source can create thousands of family-supporting jobs for Virginians and be delivered in a way that is fair, equitable, beneficial for all, and ensures the protection for marine mammals and other wildlife, especially the endangered North Atlantic Right Whale.

The Virginia Clean Economy Act (VCEA), mandates that up to 5,200 megawatts (MW) of offshore wind be constructed and deliver power to the grid by 2035. Dominion is on track to build approximately 220 turbines starting in 2024 and supply 2,600 MW of offshore wind power by 2026. The remaining 2,600 MW could be realized by leasing additional wind energy areas off Virginia’s coast and/or from the Kitty Hawk offshore wind project. Avangrid Renewables will start building this North Carolina project in 2025 and deliver that power into the grid through Virginia.

This commitment to 5,200 MW of offshore wind helps position the Commonwealth to become an offshore wind hub for the industry, serving not only Virginia and North Carolina, but also projects in northeastern states totalling over 25 gigawatts of power. Indeed, this commitment has already prompted Siemens Gamesa, the world’s largest offshore wind turbine manufacturer, to announce interest in locating its US manufacturing facility in Virginia.

However, the proclamation that these resources are in the public interests puts over-burdened ratepayers at risk of paying more than is necessary for these wind resources. Legislators must restore State Corporation Commission authority to ensure that wind resources are built as cost-effectively as possible (see Reforming Electric Utility Regulations, p. 128)

Each wind turbine is made with over 8,000 parts - many of which can be manufactured by Virginia workers across the Commonwealth. With its deep-water port, world-class shipbuilding and maritime industries, and no overhead restrictions for ships, Virginia could become a major east coast hub and a national offshore wind energy leader.

ENSURING OFFSHORE WIND BENEFITS ALL VIRGINIANS

WITH ITS DEEP-WATER PORT, WORLD-CLASS SHIPBUILDING AND MARITIME INDUSTRIES, AND NO OVERHEAD RESTRICTIONS FOR SHIPS, VIRGINIA COULD BECOME A MAJOR EAST COAST HUB AND A NATIONAL OFFSHORE WIND ENERGY LEADER.

Turbines made and constructed with American parts and labor will mean both tremendous job creation and significant cost savings. Globally, costs have plunged 32 percent in the past year, and industry experts anticipate even further price drops as the U.S. builds its own manufacturing and supply chain instead of importing European parts.²

Researchers estimate that a full build-out of the offshore wind industry can create over 14,000 jobs in Virginia.³ These are high-paying, local, career-length jobs that can employ high school and college graduates, job changers, returning workers, and veterans transitioning to the civilian workforce. Coupling Virginia’s robust network of community colleges, trade schools, world-class universities, and labor apprenticeship programs with investments in implementing the state’s workforce development, offshore wind can provide job opportunities for a broad swath of Virginians including people in historically disadvantaged communities.

More than 10 percent of Virginia residents live below the federal poverty threshold. Virginia can help confront income inequality and lower barriers to employment by creating more and higher paying jobs.
for residents with limited economic opportunity. While the VCEA directs state agencies to develop a workforce development plan to help local workers secure careers in offshore wind, more can and should be done to make all Virginians beneficiaries of this emerging industry.

CONCLUSION
To capture the job-creating and economic benefits of offshore wind development, a robust and diverse workforce in Virginia must be readied. To help ensure that offshore wind is brought online as affordably as possible, we must also ensure that offshore wind is composed of American made parts.

POLICY RECOMMENDATIONS

Update the biennial budget to include financial support for implementing a robust and diverse offshore wind workforce development plan for local workers that supports a full suite of educational and training programs including especially pre-employment programs.

Strengthen local labor provisions and agency directives in the VCEA to ensure the benefits of the offshore wind industry extend to job seekers in low-income communities and communities of color and reach the people most in need of these new job opportunities.

Explicitly require that Department of Mines, Minerals, and Energy reports information on the current implementation and outcomes of energy programs, job training programs for local workers, and the placement of renewable energy facilities in disadvantaged communities.

Ensure that utilities are not overcharging ratepayers for wind energy by restoring State Corporation Commission authority over electricity rates (see Reforming Electric Utility Regulations, p. 128).
INTRODUCTION
Fossil fuel infrastructure in Virginia causes significant, ongoing harm to Virginia’s communities and environment. Current and proposed projects endanger future generations, preventing necessary climate mitigation efforts, and perpetuate systemic environmental racism related to the siting of projects. Fracked gas pipelines, coal mines, coal terminals, coal and gas-fired power plants, methane beds, and coal ash ponds all harm communities, groundwater, air quality, and postpone urgent changes to eliminate greenhouse gas emissions. Regulatory reforms and accountability are urgently needed, and a rapid and just transition to clean, renewable energy sources is required to foster a healthier, more equitable future.

BACKGROUND
Virginia communities have long endured the harmful results of utility or corporate interests, without sufficient oversight of cumulative health, social, or long-term air and water impacts. The disproportionate placement of fossil fuel infrastructure in communities of color and low-income communities has a direct connection to harmful health disparities. A recent study published in the American Journal of Public Health found that black Americans are exposed to 1.54 times more harmful air pollution than white Americans, leading to health problems such as lung disease and heart disease, both of which increase the chance of death from COVID-19 as well.¹ Many Virginians lack sufficient access to information about fossil fuel projects proposed to be sited in their community, reducing their essential role in submitting public comment. Lack of need for additional gas supply for electricity generation in Virginia, ballooning costs, and a massive existing amount of fossil fuel infrastructure, also traps ratepayers into funding potential projects directly harmful to their own communities.² Coal mines are still being permitted and operated in Southwest Virginia, leading to increased rates of cancer, lung disease including black lung, heart disease, water pollution, and property and ecological damage.³ Coal terminals, along Virginia’s major ports in Hampton Roads, continue to expose historically Black neighborhoods to coal dust from uncovered coal-carrying train cars and rotary dumpers — an issue residents link to water contamination and increased cases and severity of asthma locally.⁴ A suite of bills passed during the 2020 legislative session, which examined environmental justice considerations, mandated closure of carbon-emitting plants owned by Dominion and Appalachian Power and strengthened public participation processes, pushed Virginia in the right direction. However, we must also recognize that closing fossil fuel infrastructure will result in job loss and economic decline in already struggling communities; our recommendations to address this inherent conflict are addressed in the Building an Equitable Clean Energy Economy for Communities and Workers paper (p. 40).

CONCLUSION
Expansion of fossil fuel infrastructure runs counter to the equitable treatment of Virginians, and to the necessary steps to mitigate the climate crisis. State agencies and legislators must hold polluters accountable, ensure protective measures for Virginia’s waterways, authentically engage and include resident stakeholders in transparent decision-making, and critically examine the need for new, extractive fossil fuel infrastructure that promises to harm Virginians.
Establish a moratorium on new major and minor fossil fuels projects including, but not limited to: generating facilities, import and export terminals, expansion of carrying capacity, refineries, merchant gas plants and fracking sites, to include denial of any permits by the Virginia Air Pollution Control Board for projects that emit carbon via a just transition per the “Building an Equitable Clean Energy Economy for Communities and Workers” Briefing page.

Absent a complete moratorium the Virginia General Assembly needs to proactively address the significant risks associated with industrial gas development. Options should include stronger, regulatory protections for Virginia’s people, environment, and natural resources (see Protecting Virginia Waterways and Communities from Fracked-Gas Pipelines, p. 22):

- Require health assessments for new future fossil fuel infrastructure, including cumulative health impacts, climate impacts and social cost for every proposed fossil fuel infrastructure projects; expansion of required environmental justice analysis to include on-site demographic studies.
- Expand statewide the ban on fracking within the Eastern VA Groundwater Management Area.
- Cap methane leakage, as determined by the Air Pollution Control Board

Update the definition of “renewable” in Virginia code to expressly exclude carbon-based fuels.
INTRODUCTION
As Virginia begins to implement the Virginia Clean Economy Act (VCEA), communities with fossil-fuel reliant economies face an uncertain future with an unprecedented opportunity. Coalfield communities have been experiencing the harsh reality of the declining coal industry for decades, and now more workers and communities across the entire Commonwealth will begin to experience this challenging economic transition. As Virginia transitions to an economy based on cleaner technologies, it has the opportunity to implement policies which revitalize and prioritize people most impacted by the transitions, and to grow the workforce as we push to create a clean economy for all.

BACKGROUND

WORKFORCE TRANSITION
Approximately 80 fossil fuel power plants are currently operational in Virginia and will be retired within the next 30 years in order to meet the state’s carbon goals. Fossil fuel infrastructure is disproportionately located in low-income communities and communities of color. It is critical to engage impacted people in economic transition planning and decision-making, and ensure they benefit from the wealth created by the clean energy economy. Approximately 14,000 Virginians are directly employed in coal and gas extraction, and 10,000 are employed in fossil fuel electricity generation, transmission, and distribution. Many of these jobs will be lost in the coming decades.

At the same time, the VCEA is estimated to create 13,000 jobs per year in the advanced energy industry, with wages that are generally higher than the national average. The growing clean energy industries will need more workers, and new energy facilities will have an increasing impact on local communities. Public education, workforce training, research, and job transition support programs are needed to transition people to new jobs in the clean energy workforce and train future generations to fill the growing industry need. The VCEA took the first step of prioritizing disadvantaged communities and communities near fossil fuel infrastructure. However, the Commonwealth will need to take additional steps to invest in these communities in ways that are consistent with the notion of a “Just Transition” that aims to alleviate the geographically concentrated, negative impacts of job and economic loss associated with the closure of fossil-fuel industries.

COMMUNITY IMPACTS OF THE ENERGY INDUSTRY
We are changing the way we produce energy and now have a responsibility to ensure that vulnerable communities are not left behind. These communities have borne many burdens in order to provide the fuel that powered this nation. Justice requires that these legacy impacts be addressed and that communities be compensated and prioritized in the transition.

Though shutting down a fossil fuel facility leads to better environmental quality and human health, it also causes loss of jobs and tax revenue for local governments. Shuttered power plants and mines and bankrupt fossil-fuel companies leave behind environmental hazards such as coal ash and unreclaimed mines sites, but there is insufficient funding to clean them up. Compounding the problem, the places where power plants or mining operations are shut down are often not the best sites for clean energy infrastructure. As new energy resources are constructed, the communities that are losing the economic benefits of fossil fuel production aren’t necessarily the same communities reaping the benefits of the replacement industries.

Other kinds of clean-up are also needed to revitalize the impacted communities. Specifically, fossil-fuel-impacted communities have (or are at risk of having) numerous brownfield sites and abandoned buildings, but do not have sufficient funding to clean-up and redevelop these sites, harming economic development and impacting public health.

Declining tax revenue further impacts the ability of local districts and municipalities to maintain and invest in critical infrastructure such as water and housing. Additionally, coal and gas infrastructure has distressed water resources, leaving many households without adequate water access.
Programs such as brownfield redevelopment grants can help ensure the new energy industry brings wealth to communities hurting the most from the transition. Legislators must prioritize support for transitioning communities through economic diversification programs, physical infrastructure funding to ensure new businesses can move in and to lift struggling communities out of poverty, and funding for the clean up of environmental hazards. Energy research and educational programs can bring new industries to impacted communities while meeting the industry’s workforce needs.

CONCLUSION
Virginia has made great strides in addressing the challenge of climate change, but the Commonwealth must prioritize the needs of people and communities in the clean energy transition to ensure it is just, reaches our full clean energy potential, and addresses the harms of the extractive and destructive fossil-fuel industry, consistent with the principles of environmental justice. We must optimize this moment in order to connect low-income and frontline communities to healthier environments, new jobs, and economic opportunities in the clean energy economy.

POLICY RECOMMENDATIONS

Establish a Virginia Just Transition Office coordinated with the Environmental Justice Council. The office must be driven by an advisory committee of diverse community stakeholders who are charged with developing Just Transition Plans with impacted stakeholders and advising the state legislature and regulators on policy related to economic transition, long-term health care, and environmental remediation. The office must rely on robust community-based and expert-informed planning processes.

Provide workforce training and reemployment services to workers and communities with historically fossil-fuel reliant economies. Prioritize individuals impacted by mine and plant closures and provide income support while workers are in transition.

Establish a Community Redevelopment Fund to provide immediate employment for people in transitioning communities and climate-resilient infrastructure. The Fund should support public infrastructure projects, reclamation of brownfields, and energy efficiency services. The Fund should be paired with workforce training programs to ensure local people can fill the necessary jobs.

Each utility’s triennial integrated resource plan must include the anticipated closure date of every fossil-fuel power plant that is required to close under the Virginia Clean Economy Act. Every three years, upon approval of the resource plan, this anticipated closure schedule must also be provided to the DMME, Virginia Employment Commission, and power plant employees, and posted publicly.

Require that state-funded workforce programs serve people who are representative of the diverse population of Virginia.

Work to ensure that Virginia has the needed workforce to meet clean energy targets. This can be done through tax incentives for corporate retraining programs, implementation of a Green Career and Technical Education Dual Enrollment program for high school students, as well as grants for community colleges with high enrollment in pertinent programs.
ENDNOTES

BUILDING AN EQUITABLE CLEAN ENERGY ECONOMY FOR COMMUNITIES AND WORKERS

4 Appalachian Reg’l Comm’n, supra note 3.
8 PROTECTING VIRGINIA FROM NEW FOSSIL FUEL INFRASTRUCTURE

ENSURING OFFSHORE WIND BENEFITS ALL VIRGINIANS


INVESTING IN VIRGINIA’S ENERGY EFFICIENCY

2 The US Department of Energy (USDOE) calculates that the 536,000 households in Virginia (17.3% of all households) which fall under 150 percent of the Federal Poverty Level have an average energy burden of 12 percent. Off. of Energy Efficiency & Renewable Energy, Low-Income Energy Affordability Data Tool, https://www.energy.gov/eere/slsc/maps/lead-tool (last visited June 2, 2020).
SOLAR NET-ZERO HOME. A PRIVATE RESIDENCE IN LOUDON COUNTY, VA. PRIMARILY SOLAR POWERED WITH THE GAMUT OF NET-ZERO CONSTRUCTION TECHNIQUES USED.

Image credit: Harlow Chandler
While *Our Common Agenda* covers many different topics and conservation efforts, they all intersect in our communities. This means that we must be more intentional with the way we invest in mixed-use, walkable, and transit-oriented communities. We must ensure that flood-prone communities become less vulnerable through investments in flood-preparedness and resiliency. With the new social-distancing norms as a result of the COVID-19 pandemic, many Virginians are in dire need of access to parks and green spaces, trails and outdoor recreation, and safe opportunities for biking and walking.
BOOSTING SMART GROWTH
For too long we have poured our money into car-centric growth that increases traffic and sprawl while ignoring Virginians’ most basic need: quality, affordable housing close to jobs, retail, and other essential destinations. Smart growth offers us the chance to undo that damage. By investing in mixed-use, walkable, and transit-oriented communities, we can reduce harmful vehicle miles traveled, expand affordable housing, and grow with a development model that is both environmentally and financially sustainable.

Karen T. Campblin // Sierra Club Virginia Chapter // karen@ktcplan.com
Dan Holmes // Piedmont Environmental Council // dholmes@pecva.org
Stewart Schwartz // Coalition for Smarter Growth // stewart@smartergrowth.net

ENSURING THE RESILIENCY OF FLOOD-PRONE COMMUNITIES
Virginia has begun taking much-needed steps to address our communities’ growing vulnerability to flood events. By increasing funding for critical programs, updating key projections and standards, and developing guidelines that ensure the effectiveness of the Community Flood Preparedness Fund, the Commonwealth can demonstrate national leadership in promoting community resilience.

Morgan Butler // Southern Environmental Law Center // mbutler@selcva.org
Brent Hunsinger // Friends of the Rappahannock // brent.hunsinger@riverfriends.org
Ross Weaver // Wetlands Watch // ross.weaver@wetlandswatch.org
**BRINGING MORE SMALL SCALE SOLAR TO OUR COMMUNITIES**

Building distributed solar in our communities should be a priority for Virginia as we pursue the transition to carbon-free electricity. Distributed solar projects can and should benefit all Virginians, including low-income consumers and communities of color. These projects will harness the power of private capital to create jobs, save money for customers and taxpayers, and reduce the need for utility-scale generation.

Chelsea Barnes // Appalachian Voices // chelsea@appvoices.org
Will Cleveland // Southern Environmental Law Center // wcleveland@selcva.org
Joy Loving // Climate Action Alliance of the Valley // jal_1998@yahoo.com
Ivy Main // Sierra Club Virginia Chapter // eifionamain@gmail.com
Susan Stillman // Sierra Club Virginia Chapter // stillman.susan@gmail.com

**INCREASING ACCESS TO BIKING AND WALKING THROUGHOUT THE COMMONWEALTH**

Virginia has made great strides to integrate walking and biking into the state’s transportation system, but more needs to be done in order to make active transportation safe and accessible for people of all ages and abilities. Providing a dedicated source of state funding to invest in safer pedestrian and cycling infrastructure and providing local jurisdictions with additional slots to submit non-motorized safety and infrastructure projects as part of SMART SCALE would help make biking and walking both safe and accessible throughout the Commonwealth.

Sonya Breehey // Coalition for Smarter Growth // sonya@smartergrowth.net
Champe Burnley // Virginia Bicycling Federation // champe_burnley@vabike.org

**ENSURING EVERY VIRGINIAN HAS ACCESS TO PARKS AND GREEN SPACES**

Virginians need daily access to parks and green spaces to thrive, and we must ensure communities that have inadequate access receive adequate access. Virginia’s natural resources and transportation agencies can play a meaningful role in promoting the equitable distribution of parks and green spaces by supporting the creation of accessible and inclusive parks and public lands. By ensuring Virginians have access to parks and green spaces in their daily lives, we will promote healthier and resilient communities.

Cat Anthony // Virginia Capital Trail Foundation // cat@virginiacapitaltrail.org
Justin Doyle // James River Association // jdoyle@thejamesriver.org

**INCREASING SUPPORT FOR TRAILS AND OUTDOOR RECREATION**

While Virginia’s trails and parks are important to both state and local economies, public health, and community development, funding and support has not been adequate to meet the demand. Virginia should invest more in its precious, natural resources so all can experience its benefits.

Cat Anthony // Virginia Capital Trail Foundation // cat@virginiacapitaltrail.org
Wendy Austin // Friends of the Lower Appomattox River // waustin@folar-va.org
Peter Krebs // Piedmont Environmental Council // pkrebs@pecva.org
INTRODUCTION
Where and how we build our communities is critical not only for our quality of life but also for our environment. Smart growth is a term commonly used to describe a community growth plan that prioritizes housing – including affordable housing – near jobs, retail, and other essential destinations. Smart growth means that individuals have a safe path to walk or bike to the store or their job from their home or can easily access frequent, reliable transit to get where they need to go. Virginia communities are increasingly embracing smart growth as they recognize the value of walkable, bike-able, transit-friendly communities, but too often our state policies encourage more car-centric development. To build a greener and more equitable future, Virginia should prioritize policies that help cities, counties, and towns prioritize smart growth.

BACKGROUND
The past 80 years of sprawling development have proven costly. This lack of smart growth has created longer commutes, record levels of carbon pollution, socio-economic segregation, and an increasing loss of historic, natural, and scenic resources. By underfunding transit while subsidizing the development of car-dependent suburban communities, Virginia’s land use and transportation policies have forced families to live ever further from jobs, schools, and other essential destinations.

The impact on household budgets from long, expensive commutes has been significant and contributed to the 2008 real estate collapse, specifically in Virginia’s outer suburbs. A 2019 study from the American Automobile Association (AAA) estimated the cost of annual car ownership at over $9,000. With the average Virginia family owning a minimum of two cars and accruing between $18,230-$36,460 per year in related expenses according to AAA, there is far less income to be put towards putting food on the table, starting a small business, or investing in education. And for individuals and families that cannot afford a car, do not drive, or choose greener transportation, essential services and job opportunities are increasingly out of reach.

A 40-year summary of fiscal impact studies showed that smart growth consumes fewer acres of farmland and forests and costs localities far less to build and maintain than does sprawling, car-centric development. With over 80 years of experience to measure the high environmental and financial costs of sprawl, now is the time to reorient Virginia towards smart growth with its focus on low-cost, inclusive, location-efficient development.

The market wants alternatives to sprawl, but many of Virginia’s sprawl-oriented land use policies prevent exactly the growth that an increasing number of our state’s residents need and crave.

Virginia has taken some steps to better link land use and transportation including the 2007 Urban Development Areas and Subdivision Street Connectivity requirements, the introduction of SMART SCALE in 2014, and legislation last year which requires localities over a certain size to consider transit-oriented development in their comprehensive plans. Given the damage of sprawl on our climate and its high costs to taxpayers, the Commonwealth needs to do more to focus transportation and infrastructure investments in the cities, towns, and neighborhoods where Virginians already live. We must prioritize smart growth in order to create the efficient, walkable, and affordable communities that will power our growth throughout the 21st century.

The market wants alternatives to sprawl, but many of Virginia’s sprawl-oriented land use policies prevent exactly the growth that an increasing number of our state’s residents need and crave. Society’s changing demographics and preferences among young professionals, empty nesters, and newer families are increasing demand for vibrant and walkable cities, towns, and traditional neighborhoods where job opportunities are located close to housing. The high quality of life available in these communities, combined with the associated protection of our scenic landscapes and natural resources, enhances economic competitiveness by helping to attract and retain high-wage businesses and workers while also keeping our communities affordable through smart land use and housing policies.

The COVID-19 pandemic triggered a fierce debate on whether density in our cities has contributed to
the spread. However, recent research is showing that crowded spaces, not urban density itself, have proven to be a significant risk factor. With the strong health care systems their density affords, cities have proven to be more capable at addressing health crises than far-flung suburban and rural jurisdictions. The connected, creative, and dynamic economies of cities, towns, and urban places are expected to continue to attract people and jobs and will likely power Virginia’s recovery much as they pushed our economy forward before the crisis.

Smart growth represents Virginia’s greatest opportunity to reduce vehicle miles traveled, lower localities’ cost burdens from infrastructure maintenance, and build a prosperous future in which people at all levels of the income ladder have a fair chance to get ahead. To make that dream a reality, the state must in partnership with local governments encourage and incentivize accessory dwelling units (ADUs) and multi-family housing in our cities, towns, and mixed-use walkable suburbs where adequate public facilities exist. To ensure new growth is affordable, the Commonwealth should also allow localities to experiment with inclusionary zoning, a practice which mandates a small percentage of new housing units per building be marketed at affordable rates. Allowing affordable housing close to jobs, services, and transit will reduce pollution-intensive driving and promote cleaner, healthier forms of travel such as walking, biking, and transit.

CONCLUSION
For too long we have poured our money into car-centric growth that increases traffic and sprawl while ignoring Virginians’ most basic need: quality, affordable housing close to jobs, retail, and other essential destinations. Smart growth offers us the chance to undo that damage. By investing in mixed-use, walkable, and transit-oriented communities, we can reduce harmful vehicle miles traveled, expand affordable housing, and grow with a development model that is both environmentally and financially sustainable.

POLICY RECOMMENDATIONS

Target state infrastructure funds to compact, walkable, transit-oriented places and prioritize state funding to jurisdictions that plan housing for all levels of the workforce.

Conduct a study on the potential benefits of linking economic development funds and Opportunity Zones to mixed-use, walkable, and transit-oriented locations, and linking industrial sites to freight rail.

Increase the state affordable housing trust fund to $200 million over time, and prioritize funding for new construction projects and conversion from commercial uses close to jobs and transit.

Authorize inclusionary zoning in all localities.

Conduct a statewide study to identify racial inequities and recommend any necessary changes to remove these barriers in VA Codes relating to planning, zoning, subdivision, and covenants.

Encourage and incentivize multi-family housing and the elimination of parking minimums and within a half mile of all bus rapid transit, light-rail, and Metro routes in Virginia.

Encourage and incentivize accessory dwelling units, which include basement apartments, mother-in-law suites, and backyard cottages, in cities, towns, and suburban districts within walking distance of services, and where sewage and water infrastructure allow.

Provide community land trusts and land banks a statewide right of first refusal on all abandoned and/or blighted properties up for auction, if they commit to using the properties for affordable housing.
ENSURING THE RESILIENCY OF FLOOD-PRONE COMMUNITIES
Morgan Butler // Southern Environmental Law Center | Brent Hunsinger // Friends of the Rappahannock
Ross Weaver // Wetlands Watch

INTRODUCTION
Communities throughout Virginia are facing unprecedented challenges from rising seas, recurrent flooding, and increased precipitation and storm intensity. Governor Northam’s administration has shown leadership through Executive Orders 24 and 45, which require development of a Coastal Resilience Master Plan and implementation of the Virginia Flood Risk Management Standard. The General Assembly has also expanded its efforts by, for example, establishing the Community Flood Preparedness Fund to aid localities in planning for and implementing flood resiliency projects. However, more is needed to ensure the health and resilience of our communities, natural systems, and economy in the face of these growing threats.

BACKGROUND
Coastal Virginia faces one of the highest rates of sea-level rise on the East Coast. Recurrent flooding continues to be an increasing concern in shoreline communities, posing a threat to property and impacting infrastructure even on sunny days. But Virginia’s flood risk is multifaceted and extends far beyond the coast, and as the number of heavy precipitation events occurring annually continues to increase, extreme rainfall is bringing flooding to communities statewide.

Chief among the Administration’s resiliency focus during the 2020 General Assembly session was its advocacy for the establishment of the Virginia Community Flood Preparedness Fund (Fund), which must be used to enhance flood preparedness throughout the Commonwealth – forty-five percent of the revenue Virginia will receive from its participation in the Regional Greenhouse Gas Initiative (RGGI) will be dedicated to the Fund. This investment in community flood resilience is a major milestone, but much work must be done through the development of guidelines for the program. These guidelines must ensure that grants and loans are distributed through an objective system that evaluates and ranks proposals and prioritizes nature-based and community-scale projects, as well as direct funding to low-income geographic areas. It is also key that rural communities have enhanced access to the Fund.

Beyond the Fund, increased funding is needed for several existing programs that can help expand local capacity to address flooding. The Shoreline Erosion Advisory Service (SEAS) provides technical assistance to both localities and landowners to address erosion problems. The Virginia Conservation Assistance Program (VCAP) provides financial incentives to property owners installing Best Management Practices within Soil and Water Conservation Districts. Expansion of both of these programs would provide much needed resources to increase flood resiliency (see Working with Farmers to Protect our Rivers and Streams, p. 4).

VIRGINIA’S FLOOD RISK IS MULTIFACETED AND EXTENDS FAR BEYOND THE COAST, AND AS THE NUMBER OF HEAVY PRECIPITATION EVENTS OCCURRING ANNUALLY CONTINUES TO INCREASE, EXTREME RAINFALL IS BRINGING FLOODING TO COMMUNITIES STATEWIDE.

To reflect increasing precipitation trends, it is crucial that the state update the outdated rainfall intensity benchmarks found in NOAA Atlas 14, and then use the updated benchmarks to revise Virginia’s stormwater regulations. A study to revise Atlas 14 is expected to cost approximately $405,000 and is a vital step toward reducing flooding risk statewide. Along with revised stormwater standards, the Administration should clarify that Executive Order 45 establishes a state standard for sea level rise, using the NOAA Intermediate-High scenario curve updated in 2017.

CONCLUSION
Virginia has begun taking much-needed steps to address our communities’ growing vulnerability to flood events. By increasing funding for critical programs, updating key projections and standards, and developing guidelines that ensure the effectiveness of the Community Flood Preparedness Fund, the Commonwealth can demonstrate national leadership in promoting community resilience.
### POLICY RECOMMENDATIONS

#### Legislative

**Continue to fund adaptation efforts through existing funding mechanisms, and explore creative funding opportunities outside of the General Fund.**

- Expand Shoreline Erosion Advisory Service (SEAS) and Virginia Conservation Assistance Program (VCAP) funding. Additionally, increase the staff capacity of Soil and Water Conservation Districts (SWCD) to administer these programs.
- Maintain the Virginia Community Flood Preparedness Fund.
- Evaluate options to increase flood resiliency amongst divested communities, including establishing a fund to subsidize flood insurance for low-income residents.

**Fund an update to NOAA Atlas 14, which has an estimated cost of $405,000 through a 4-state collaboration with North Carolina, Delaware, and Maryland.**

**Develop new or refocus existing programs to facilitate utilization of natural and nature-based strategies in sea level rise and flooding resiliency efforts, including programs that support re-naturalization of lands to support their most sustainable use, restore the natural function of floodplains, and strategies to incentivize managed retreat from flood prone areas.**

**In real estate transactions, all potential buyers and renters should receive information regarding the flood history of the property in consideration, including full disclosure of FEMA flood claims.**

**Develop new regulatory program for preventing discharges from aboveground storage tanks containing hazardous substances (See Protecting Virginians from Hazardous Chemical Spills, p. 28).**

#### Administrative

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

- Conduct a new precipitation study to replace Atlas 14. Use these data to inform design-storm criteria, ensuring stormwater standards reflect our changing precipitation trends. Additional studies should consider climate change and develop predictive Intensity-Duration-Frequency (IDF) curves.
- Develop guidance on the sea level rise projections established in Executive Order 45.

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

**Require that all state agencies, regional planning authorities, and localities include consideration of more frequent and intense storms, increased precipitation, and, where applicable, sea-level rise in all long-range planning processes (e.g. comprehensive, transportation, water supply, hazard mitigation) and land use decisions.**

**Establish a full stakeholder review process to help develop effective and comprehensive guidelines for the Virginia Community Flood Preparedness Fund:**

- Develop an equitable framework for evaluating and prioritizing potential projects
- Ensure compliance with statutory directives:
  - Prioritizing community-scale activities that use nature-based solutions to reduce flood risk; and
  - Using at least 25 percent of monies disbursed from the Fund for projects in low-income geographic areas.
- Ensure adequate focus is placed on providing local planning assistance for rural localities.
- Ensure principles outlined in the Virginia Environmental Justice Act are followed during the development of the guidelines

**Convene a task force composed of representatives from Department of Environmental Quality, Department of Health, local governing bodies, planning district commissions, conservation organizations, and other stakeholders to study solutions to the human health and water quality threats posed by inundated or recurrently flooded infrastructure, including but not limited to septic systems and wells in Resource Protection Areas.**
FLOODING AT CHESAPEAKE BAY FOUNDATION'S BROCK CENTER DURING A HURRICANE.
Image credit: Chris Corri, Chesapeake Bay Foundation
CARS DRIVE IN STREETS FLOODED BY A HIGH TIDE NEAR NORFOLK, VA.'S LAFAYETTE RIVER. AN EXAMPLE OF "SUNNY DAY FLOODING."

Image credit: Kenny Fletcher
INTRODUCTION
Small-scale solar facilities on rooftops, parking lots, brownfields, and elsewhere in our communities must play a major role in Virginia’s transition to a zero-carbon economy. This “distributed” generation could meet more than one-third of our electric demand. It also reduces the need for large, utility-operated solar farms on agricultural and forest land, while creating jobs, saving money for consumers and taxpayers, and increasing the resilience and reliability of our electricity supply.

The General Assembly should act to make distributed solar a meaningful part of the renewable portfolio standard (RPS), remove barriers and provide incentives for customers to invest in on-site solar, promote solar-plus-storage solutions for resilience, and ensure that all Virginians have equal access to solar energy and its benefits.

BACKGROUND
The passage of the Virginia Clean Economy Act (VCEA) and Solar Freedom Act removed many barriers to distributed solar. Yet much remains to be done to realize the full potential of distributed generation and expand access to clean energy. The VCEA’s new RPS focuses on large-scale utility projects, largely ignoring the rich potential of private-sector distributed solar.

The traditional utility business model relies on large, centralized power stations pumping electricity onto the grid. By contrast, distributed generation produces electricity close to where it is consumed, without the need for long-distance transmission. This saves money for all customers. Distributed generation, particularly solar, also provides other public benefits, such as reducing the need for the utility to build expensive new generation, helping to decarbonize the grid, increasing grid resilience and emergency preparedness in our communities, and enabling the public to positively contribute to a decentralized energy system.

As Virginia seeks to decarbonize its electricity supply, distributed solar must be a priority. Although more labor-intensive, and therefore more expensive than utility-scale solar on a per kilowatt-hour basis, distributed solar makes more efficient use of land because it can be placed on rooftops, parking lots, brownfields, and more. Distributed solar projects also create more jobs than larger-scale resources. On-site solar paired with battery storage also adds resilience, allowing critical infrastructure, EV transportation, and community buildings to remain powered when the larger grid is disabled and after dark.

Currently, Virginia policy does not recognize, value, or reward these public benefits. Customers who install solar for their own use can take advantage of net metering, which provides a credit for surplus solar fed back to the grid. Net metering is a vital program that allows customers to save money on energy over the life of the system, but many customers can’t afford the upfront cost of solar or obtain affordable financing, and unnecessary limitations on net metering remain.

Low-income and minority customers in particular face financial or other barriers to installing solar, and many can’t access its benefits at all because they don’t own their own homes. This is notably problematic as Virginians pay a higher percentage of their income on average for electricity than other Americans (3.1% compared to 2.7%); for low-income Virginians, energy costs often exceed the six percent threshold for unaffordability. There is a dire need for programs that help customers use solar to lower their electricity costs, including programs targeted to minority consumers. There are many examples of successful programs.

In addition to net metering, appropriately valuing and incentivizing distributed generation requires tax credits, rebates, and/or an RPS solar carve-out that creates a market for solar renewable energy certificates (SRECs). Customers also need additional financing options, such as residential property-assessed clean energy (R-PACE) financing and expanded access to power purchase agreements (PPAs).

While Virginia’s recently-enacted RPS does include a very small carve-out for distributed energy, that carve-out can be met with anaerobic digestion (animal waste), which will likely be met through Dominion Energy’s deal with Smithfield Foods to make energy...
from pig waste rather than through small-scale solar or wind.\textsuperscript{6}

Finally, Virginia customers face a confusing, illogical, and unfair patchwork of laws and regulations governing distributed solar. Residents of multifamily buildings in Dominion Energy and Old Dominion Power territory now have access to shared solar, but the same option is not available in Appalachian Power territory. A home with more than 15 kilowatts of solar pays standby charges in Dominion territory but not in Appalachian Power or Old Dominion Power territory—and so on. The rules are different, and more restrictive still, for rural electric cooperatives and municipal electric utilities (MEUs) customers, who often face a higher energy burden.\textsuperscript{7} Lastly, electricity rates are often designed to discourage renewable energy adoption through high fixed charges and non-coincident peak demand charges; rates should be designed to facilitate Virginia’s clean energy goals, rather than hinder them.\textsuperscript{8}

**CONCLUSION**

Building distributed solar in our communities should be a priority for Virginia as we pursue the transition to carbon-free electricity. Distributed solar projects can and should benefit all Virginians, including low-income consumers and communities of color. These projects will harness the power of private capital to create jobs, save money for customers and taxpayers, and reduce the need for utility-scale generation.\textsuperscript{9}

**POLICY RECOMMENDATIONS**

**Support distributed solar through incentives** such as tax credits, rebates, and/or low-interest loans, and financing through programs like R-PACE so that financing is available to a broader population (including populations that currently lack access to cost-effective financing tools); and ensure these incentives reach members of low-income communities and people of color.

**Increase the percentage of the RPS set aside for distributed projects from 1% to at least 10%, expand the set-aside requirement to Appalachian Power, and remove anaerobic digestion (animal waste) from the set-aside.**

**Support solar-plus-storage for buildings that can serve as resilience hubs for communities, especially those in low-income areas, during storm events and other widespread grid outages.**

**Reform our net metering laws to give residents in all parts of the state the same opportunities, regardless of their utility provider.**

**Allow aggregated net metering for agriculture, business, & residential entities with non-contiguous sites.**

**Expand community solar programs to allow more people to access solar (especially people who do not own their homes) and to allow more competition from independent solar providers that can help bring down the costs to the consumer.**

**Ensure PPA Pilot programs are available to non-jurisdictional customers (i.e. government buildings and schools) in Appalachian Power and Old Dominion Power territories.**

**Require utilities to offer rate options that encourage the adoption of renewable energy (such as lower fixed charges and higher usage charges) and prohibit the use of non-coincident peak demand charges.**

**Fund programs to increase access to rooftop solar for lower income Virginians and minorities, such as the pilot program that the General Assembly already authorized the Virginia Clean Energy Advisory Board to conduct or any other programs that the Board identifies.**
**INTRODUCTION**

Transportation funding and planning in Virginia has overwhelmingly prioritized roadway expansion and moving cars faster at the expense of Virginians having the choice to safely walk and bike. Many forms of active transportation offer healthy, sustainable, and more affordable ways to get around that also reduce greenhouse gas emissions, decrease traffic, and boost public health.

Recent impressive growth in walking and biking comes at a time when pedestrian and cyclist fatalities have been growing in the Commonwealth. To turn the tide, Virginia needs to provide a dedicated source of state funding to invest in safer active transportation infrastructure and incentivize localities to build sidewalks, bike lanes, and trails by leveraging Smart Scale and federal funding programs.

**BACKGROUND**

Bicycling and walking are popular activities for both transportation and recreation in Virginia. The Commonwealth’s residents and visitors alike travel on foot and by bike in all parts of the state. They walk and ride along urban streets and rural roads; they use sidewalks, bike lanes, trails, shared use paths, and greenways. Even in areas that lack sidewalks and bike facilities, people still choose to bike and walk, particularly those with limited transportation options. These residents are often forced into the street under dangerous conditions.

Active transportation provides environmental, health, and economic benefits. Biking and walking produce no carbon emissions and help to reduce traffic congestion while fostering a sense of community. It provides people critical first- and last-mile connections to public transportation without needing to drive and offers the most economical option for those looking to reduce their transportation costs or who may have limited transportation choices.

Since the start of the COVID-19 pandemic, walking and biking have boomed. Across the country, walking has overwhelmingly increased and, in some instances, trail usage is up by over 200 percent as people seek to get outdoors for exercise and mental well being as well as commuting to essential jobs.¹

Unfortunately, recent growth in biking and walking has led trails and greenways to become overcrowded. Where sidewalks are too narrow or non-existent as they are in many locations, people are forced to walk in the roadway. This reveals Virginia's disappointing lack of investment in our healthiest and most sustainable modes of travel: walking and biking.

Both modes’ impressive growth comes at a time when pedestrian fatalities have been rapidly rising in the Commonwealth. According to the Governors Highway Safety Association², nationwide pedestrians fatalities have increased by more than 50 percent over the past decade. Virginia saw a 10 percent increase in pedestrian deaths from 2018 to 2019 alone. The inequality of access to safe sidewalks and cycling infrastructure has become even more evident in low-income neighborhoods and communities of color which disproportionately rely upon walking and biking for transportation rather than recreation.

Most bike and pedestrian projects begin at the local level, driven by enthusiastic Virginians or as a connection to a larger trail network. Rural localities and small towns often do not prioritize sidewalks, trails, and bike infrastructure, instead leaving such necessities no more than a paragraph or two in a comprehensive plan, which never progresses beyond the shelf of a county office.

**BIKING AND WALKING PRODUCE NO CARBON EMISSIONS AND HELP TO REDUCE TRAFFIC CONGESTION WHILE FOSTERING A SENSE OF COMMUNITY.**

Statewide, the Virginia Department of Transportation (VDOT) supports the provision of a multimodal transportation system that addresses the needs of non-motorized users.³ In 2004, the Commonwealth Transportation Board (CTB) adopted the Policy for Integrating Bicycle and Pedestrian Accommodations.⁴ This provides the framework through which VDOT accommodates bicyclists and pedestrians in the funding, planning, design, construction, operation, and maintenance of Virginia’s transportation network.

Unfortunately, much progress is held back as our state lacks a dedicated funding stream for biking and walking safety and capacity improvements. Dedicated
funds could be used to invest in needed sidewalks, missing segments, and safety improvements to help residents walk and bike safely to jobs and transit stops. It could provide needed funds for completing trail networks, greenways, and outdoor facilities that would not only support active transportation in more urban areas, but could be of particular importance to small towns and rural communities that are starved for funding as they pivot their local economies towards tourism.

This policy lays out a bold vision for the Commonwealth; however, nearly 20 years later it’s clear that increased resources and infrastructure are necessary if we are to make the dream of safe access to walking and biking a reality for all Virginians.

**CONCLUSION**
Virginia has made great strides to integrate walking and biking into the state’s transportation system, but more needs to be done in order to make active transportation safe and accessible for people of all ages and abilities. Providing a dedicated source of state funding to invest in safer pedestrian and cycling infrastructure and providing local jurisdictions with additional slots to submit non-motorized safety and infrastructure projects as part of SMART SCALE would help make biking and walking both safe and accessible throughout the Commonwealth.

**POLICY RECOMMENDATIONS**

*Virginia should create one additional SMART SCALE slot per locality and metropolitan planning organization (MPO) for bike/ped projects to provide greater opportunities to fund pedestrian and cycling (non-motorized) infrastructure like paths, trails, and greenways.*

*The Commonwealth should identify a dedicated funding source for walking, biking, and trails projects to help localities plan these facilities and/or meet federal Transportation Alternative Program matching requirements.*

*Virginia should decriminalize the act of jaywalking and pass a “Safety Stop” bicycling rule (allowing cyclists to yield at stop signs) to improve safety and reduce opportunities for needless police interaction with the public.*

*The Commonwealth should require all localities to publish statistics on traffic enforcement towards cyclists and pedestrians with breakdowns of race, age, gender, etc.*
ENSURING EVERY VIRGINIAN HAS ACCESS TO PARKS AND GREEN SPACES
Cat Anthony // Virginia Capital Trail Foundation | Justin Doyle // James River Association

INTRODUCTION
From the Appalachian Mountains to the Atlantic Ocean, our Commonwealth is abundant with opportunities for outdoor recreation. State parks, natural area preserves, wildlife management areas, state forests, and statewide trails are state-owned and managed lands available for public use and enjoyment. But for too many Virginians, these parks and public lands are inaccessible due to distance or the lack of facilities compliant with the Americans with Disability Act. Correcting this inequity by helping communities create new parks and green spaces must be a priority of the Commonwealth of Virginia. Furthermore, new public access infrastructure and facilities must be designed and constructed to accommodate people of all abilities to promote inclusion.

BACKGROUND
Our parks and green spaces offer us the ability to connect with nature, relaxing our minds and nurturing our bodies through exercise and outdoor recreation. They also contribute to community resilience by providing opportunities for gardening and ecosystem services such as capturing carbon, absorbing stormwater, and reducing the urban heat island effect. The COVID-19 pandemic has more recently demonstrated the importance of parks in our lives as people have flocked to them with fewer places to go for recreation and enjoyment. This importance was previously shown in the 2017 Virginia Outdoors Demand Survey conducted by the Department of Conservation and Recreation, with the overwhelming majority of respondents (93.2%) describing outdoor recreation opportunities as very important (70%) or important (23.2%).

It is important to recognize, however, that strong public support for parks does not always translate into equitable access to parks and quality park systems. Race and income play roles in determining the quality and size of parks and green spaces individuals have access to in the United States. Affluent White municipalities tend to have access to higher quality park systems with more acreage than those with larger low-income and Latino or Black populations. Therefore, any effort to increase local parks and green space accessibility should work with community leaders to assess how best to address these systemic inequalities.

As of 2018, Virginia had 2,440 local and regional parks and 724 water access sites but Virginians who have more than a 10-minute walk, 15-minute bike ride, or a 20-minute drive to a park or green space have inadequate access. The 2017 Virginia Outdoors Demand Survey asked Virginians why they do not visit parks; the top two reasons were “lack of time” (57.4%) and “lack of money” (25%). Most concerning is more than one-fifth of respondents (21%) reported “a lack of parks nearby.” A consistent source of state funding investing in locally created parks and green spaces in underserved communities does not currently exist as it does in many other states.

THE COVID-19 PANDEMIC HAS MORE RECENTLY DEMONSTRATED THE IMPORTANCE OF PARKS IN OUR LIVES AS PEOPLE HAVE FLOCKED TO THEM WITH FEWER PLACES TO GO FOR RECREATION AND ENJOYMENT.

The City of Richmond is making an intentional effort to improve access to parks and green spaces for its residents to address, in part, the fact that 22 percent of Richmond residents live beyond a 10-minute walk to at least one of the city’s 164 parks. Appointed by Richmond’s mayor, a team of public servants and green space advocates are working toward the goal of ensuring all Richmonders reside within a ten-minute walk of a park or green space. This “Green Team” has been further charged with achieving this goal through a lens of social and racial equity. Since its formation in January of 2020, the Green Team has identified and prioritized city-owned parcels of land that are candidates to become parks and green spaces in areas of the city where park access is poor. The Green Team also developed policy recommendations with the intention of expanding access to parks and green spaces in the city.

The Commonwealth’s public lands and natural resources, such as state parks, natural area preserves, statewide trails, and bodies of water, can only be enjoyed by people if they are accessible and inclusive. Eighteen percent of Virginia Outdoors Demand Survey respondents reported that health and physical mobility are limiting factors for visiting parks. Basic public
access infrastructure and facilities such as parking areas, pathways, and restrooms must be compliant with the Americans with Disabilities Act. Amenities such as picnic areas, campgrounds, fishing piers, boat ramps, and paddlecraft launches should be designed to be universally accessible, to accommodate people of varying abilities and promote inclusion. A dedicated source of state funding supporting public access infrastructure projects does not currently exist.

CONCLUSION
Virginians need daily access to parks and green spaces to thrive, and we must ensure communities that have inadequate access receive adequate access. Virginia’s natural resources and transportation agencies can play a meaningful role in promoting the equitable distribution of parks and green spaces by supporting the creation of accessible and inclusive parks and public lands. By ensuring Virginians have access to parks and green spaces in their daily lives, we will promote healthier and resilient communities.

POLICY RECOMMENDATIONS

Initiate a statewide study with public involvement to determine which communities have inequitable access to parks and green spaces.

Fund public access infrastructure projects at Virginia State Parks, Natural Area Preserves, statewide trails, and along bodies of water using $115 million in bonds.

Fund an outdoor recreation equity grant program led by affected communities that would fund programs that work towards equity and access in outdoor recreation.

Fully fund the Virginia Land Conservation Foundation and ensure at least a portion of funding awarded to projects in the open spaces and parks category supports equitable park access project (see Healthy, Resilient Communities and Landscapes, p. 88)

Ensure local parks and green spaces projects are included in the Virginia Outdoors Plan and leverage local funding for parks and green spaces to apply for funding from grant programs such as those offered by the Land and Water Conservation Fund.

Dedicate a percentage of the Virginia Department of Transportation’s funding to connectivity projects that improve park and green space access.
INTRODUCTION
Virginia is home to 38 state parks, 22 national parks, and many nationally recognized trails including the Appalachian National Scenic Trail with 550 miles of the multi-state trail running through Virginia. Virginians must have equitable access to outdoor recreation and trails for the public health of its residents and these outdoor recreation assets need to be maintained. The Department of Conservation and Recreation must have adequate funding to help manage our outdoor recreation and active-transportation resources and to create a connected state-wide trail system which will promote walkability for local communities and allow businesses to prosper.

BACKGROUND
Access to outdoor recreation and green spaces has been essential for many people due to the recent COVID-19 pandemic. Many are flocking to trails and green spaces for exercise, recreation, and transportation while connecting with nature to deal with the stress and fear of current events. These green spaces need to be protected, maintained, and made equitably accessible for current and future generations. If our facilities and trails are not maintained, public safety will be at risk in our communities.

Healthy communities prosper and thrive with access to green spaces and outdoor recreation. Workers who exercise regularly miss less time, and are more creative and productive. Children who have access to the outdoors do better in school and earn more later in life. Employers know this and seek to locate their businesses where they can find (or draw) employees who add the most value to their endeavors. While it is commonly understood that trails, parks and open space attract tourists and their dollars, the infrastructure for walking, biking, and active recreation also attracts primary industries that bring well-paying, year-round employment. In turn, those enterprises (and their workforce) bring sustainable tax revenue that funds great schools, public spaces and further improvements. Economic development strategies that prioritize connectivity and access to open space build prosperity by investing in local people and communities.

THE CDC DETERMINES THAT BY CREATING AND IMPROVING PLACES IN OUR COMMUNITIES TO BE PHYSICALLY ACTIVE, THERE COULD BE A 25 PERCENT INCREASE IN THE PERCENTAGE OF PEOPLE WHO EXERCISE AT LEAST THREE TIMES A WEEK, BRINGING MEASURABLE HEALTH BENEFITS.

Greenways and green space networks, as part of the local transportation system, offer effective transportation alternatives by connecting urban-suburban homes, workplaces, schools, parks, downtown, and cultural attractions. These community assets support people’s ability to reach the recommended 30 minutes each day of moderately intense physical activity. According to the Centers for Disease Control and Prevention (CDC), “Physical inactivity causes numerous physical and mental health problems, is responsible for an estimated 200,000 deaths per year, and contributes to the obesity epidemic.”

The CDC determines that by creating and improving places in our communities to be physically active, there could be a 25 percent increase in the percentage of people who exercise at least three times a week, bringing measurable health benefits. Additionally, as people become more physically active outdoors, they make connections with their neighborhood that contribute to the health and safety of their community.

All Virginians deserve safe, protected bike-and-pedestrian infrastructure and outdoor recreation as an integral part of their community.

CONCLUSION
While Virginia’s trails and parks are important to both state and local economies, public health, and community development, funding and support has not been adequate to meet the demand. Virginia should invest more in its precious, natural resources so all can experience its benefits.
POLICY RECOMMENDATIONS

Increase funding to the Department of Conservation and Recreation for:

• The development of new green spaces and trails in communities with limited access.
• Better Maintenance to extend the lifespan of existing facilities and to make them appealing/accessible to wider and more diverse usership.
• Capital improvement projects.
• The Recreational Trails Grant Program.

Commission a next-generation economic analysis through the Office of Outdoor Recreation that demonstrates and quantifies the link between investments in access to the outdoors, public health, workforce productivity, economic output, and community development.

Increase budget support for the Virginia Department of Health and Virginia Department of Transportation to promote walkability in communities with low walkability scores and limited access to green spaces while also collaborating with the Office of Outdoor Recreation and the Department of Conservation and Recreation, which would encourage a broader state-wide focus.

Convene a group of experts through the Department of Conservation and Recreation to study state-wide connectivity of trails which includes Rails with Trails and report back to the General Assembly with recommendations for funding through the Land and Water Conservation Fund or other funding sources.

Support enhancements to the scenic resources layer of the ConserveVirginia model to promote land conservation that is important to preserve scenic vistas from a variety of modes of travel including automobile, boat, and foot.
ENDNOTES

BOOSTING SMART GROWTH
1 See, e.g., Joe Cortright, Driven to the Brink, CEOs for Cities, http://www.ceosforcities.org/work/driven_to_the_brink.

ENSURING THE REILICENCY OF FLOOD-PRONE COMMUNITIES

BRINGING MORE SMALL SCALE SOLAR TO OUR COMMUNITIES

BUILDING LIVABLE, RESILIENT, AND SUSTAINABLE COMMUNITIES
66 | BUILDING LIVABLE, RESILIENT, AND SUSTAINABLE COMMUNITIES

TRANSFORMING THE FUTURE OF RENEWABLE ENERGY & AGRICULTURE
INCREASING ACCESS TO BIKING AND WALKING THROUGHOUT THE COMMONWEALTH


ENSURING EVERY VIRGINIAN HAS ACCESS TO PARKS AND GREEN SPACES

1 Integrating Satellite and Ground Measurements for Predicting Locations of Extreme Urban Heat. https://www.mdpi.com/2225-1154/7/1/5/htm
6 Ellis, supra note 1.

INCREASING SUPPORT FOR TRAILS AND OUTDOOR RECREATION

LEE HIGHWAY CROSSES THE NORTH FORK THORNTON RIVER IN SPERRYVILLE, VA.

Image credit: Will Parson, Chesapeake Bay Program
Transportation represents the largest source of carbon emissions in Virginia. In order to change that, we need a shift to a cleaner, balanced, and more equitable transportation system. However, a continued focus on highway construction and expansion, the lack of alternatives to driving, and no cap on greenhouse gas emissions means that the Commonwealth still has a lot of work to do. In addition to making smarter land use decisions as described in our livable communities chapter, changes should include expanding public transportation, growing rail capacity, electrifying vehicle fleets, and curbing vehicle pollution.
EXECUTIVE SUMMARIES AND CONTACT INFORMATION

VCN POINT OF CONTACT

Wyatt Gordon
VCN Policy and Campaigns Manager, Land Use and Transportation
wyatt@vcnva.org

TRANSFORMING TRANSPORTATION

We must shift our excessive spending on highways towards walking, biking, rail, and transit. Virginia’s transportation policies and investments need to prioritize the development of a cleaner and more equitable multi-modal transportation system that strengthens our communities, reduces carbon pollution, and protects our natural, historic, and scenic resources. We don’t need more money to boost Virginians’ mobility and health, we just need to spend our current transportation dollars smarter and to overhaul how we plan transportation projects to boost our mobility, health, and environment.

Trip Pollard // Southern Environmental Law Center // tpollard@selcva.org
Stewart Schwartz // Coalition for Smarter Growth // stewart@smartergrowth.net

EXPANDING PUBLIC TRANSIT

Transit is essential for improving access to jobs, education, healthcare, and services for all Virginians and reducing vehicle trips, greenhouse gas emissions, and other air pollutants. Strengthening environmental justice, economic competitiveness, and climate change resiliency depends on action in 2021 and beyond to significantly increase the state’s investment in transit.

Tyneshia Griffin // New Virginia Majority // tgriffin@newvirginiamajority.org
Kim Jemaine // Chesapeake Climate Action Network // kim@chesapeakeclimate.org
Stewart Schwartz // Coalition for Smarter Growth // stewart@smartergrowth.net

GROWING RAIL CAPACITY

Our state policies must place greater priority on rail to reduce traffic congestion as well as carbon pollution. Further, public private partnerships with Virginia’s Class I railroads can enhance the capacity, speed, and reliability of the freight rail system and reduce highway truck volumes, improving safety and reducing pollution. Such partnerships – including public ownership of rail corridors – can also enable expansion of passenger rail service. Rail assets divested by the Class I railroads should be “rail-banked” to allow for future growth in rail service and to preserve right of way for the public good.

David Foster // Rail Solution // dfoster342@aol.com
Danny Piaugher // Virginians for High Speed Rail // danny@vhsr.com
Trip Pollard // Southern Environmental Law Center // tpollard@selcva.org
ADVANCING TRANSPORTATION ELECTRIFICATION
Transportation continues to be Virginia’s largest source of carbon emissions (48 percent) and a top source of other harmful pollutants that damage both our environment and our health. While it takes time to build smarter and expand biking, walking, and transit, the adoption of EVs can ease this transition and provide significant reductions in transportation emissions. Accelerating transportation electrification can yield immediate health, environmental, and economic benefits for all Virginians.

Steve Banashek // Sierra Club // sbinfo14@yahoo.com
Elly Boehmer // Environment Virginia // eboehmer@environmentvirginia.org
Will Cleveland // Southern Environmental Law Center // wcleveland@selcva.org
Blair St. Ledger-Olson // Generation180 // blair@generation180.org

CURBING VEHICLE POLLUTION
Transportation is Virginia’s largest source of carbon pollution and a key source of other harmful pollutants. Currently EVs make up less than 2 percent of the Commonwealth’s vehicles. In order to build a healthier future and help address our climate crisis, Virginia needs to accelerate our transition to cleaner transportation. By adopting policies and making investments to provide more alternatives to driving and to promote electric vehicles, we can pursue a multi-pronged approach to both reduce vehicles miles traveled and electrify remaining trips taken by cars.

Kim Jemaine // Chesapeake Climate Action Network // kim@chesapeakeclimate.org
Bob Kitchen // Virginian Clinicians for Climate Action // bobkitchen1@gmail.com
Lena Lewis // The Nature Conservancy // lena.lewis@tnc.org
Trip Pollard // Southern Environmental Law Center // tpollard@selcva.org
INTRODUCTION
Virginia needs a cleaner, balanced, and more equitable transportation system. Transportation is central to our economy and quality of life – yet despite increasing demand from residents and businesses alike, congestion is widespread, carbon pollution threatens our health and climate, many roads and bridges need repair, and there are too few alternatives to driving – especially for low-income Virginians and communities of color. Although we have made progress in recent years, Virginia continues to focus too heavily on highway construction and expansion – an approach that is costly to taxpayers, people’s health, and the climate while doing little to relieve congestion in the long run. Lack of money is not the problem. We simply need to transform our approach to transportation, shifting policies and investments to advance cleaner, healthier mobility options that reduce our environment.

BACKGROUND
Some significant transportation reforms have been adopted in recent years, including the 2020 transportation omnibus legislation that increased funding for rail, transit, and highway maintenance as well as the development of SMART SCALE—an award-winning prioritization process that provides a much more objective and transparent basis for selecting projects for funding. However, Virginia continues to spend too much money on wasteful and damaging highway proposals. Despite recent progress, Virginia’s transportation spending remains overly asphalt-centered, with roughly 80 percent of the $22.9 billion in the FY2020-25 Six-Year Improvement Program allocated to highways. We need to shift our policies and spending towards alternatives to driving to reduce the necessity of owning or having access to a car, and to provide all Virginians with safer and cleaner mobility options.

Over 85 billion miles are driven each year in Virginia. Burning all the fuel required for this alarmingly high level of driving has made transportation the largest source of carbon pollution in the Commonwealth – spewing out 48 percent of all statewide emissions. Moreover, new roads destroy natural resources, such as forests and wetlands, that absorb carbon and increase communities’ resiliency to sea level rise and flooding, a particular threat to Hampton Roads—the East Coast’s fastest sinking region. Our heavy investment in asphalt continues despite the fact that decades of studies and experience have proven that new and wider highways frequently fail to provide long-term congestion relief since they incentivize sprawling development, thereby worsening the heavy traffic they were intended to fix.

Walkable, bikeable communities served by frequent and reliable transit are increasingly the future of the Commonwealth’s economic growth as corporate decisions such as Amazon siting its second headquarters adjacent to two Metro stations have made abundantly clear. Nearly all of the new office development in Northern Virginia is along the Metro. In Richmond and Henrico, the Pulse Bus Rapid Transit line has revitalized the city’s downtown Broad Street corridor. $20 million in annual new funding for the Hampton Roads Regional Transit Program (HRT) will help to improve access to housing, jobs, and businesses along HRT routes. Transit systems in Roanoke, Blacksburg, and other communities are an economic boon providing critical access for residents, visitors, and tourists to jobs, healthcare, and essential services.

To remain economically competitive, build a more sustainable future, and provide Virginians with greater mobility, more of our transportation budget must be shifted to rail, transit, and infrastructure for biking and walking (see Growing Rail Capacity, p. 76; Expanding Public Transit, p. 74; and, Increasing Access to Biking and Walking Throughout the Commonwealth, p. 60).

In addition, the SMART SCALE process and other transportation planning processes need to focus more on the climate impacts of transportation policies and investments, and steps should be taken to accelerate the transition to cleaner vehicles and to electrify transportation (See Curbing Vehicle Pollution, p. 80; and, Advancing Transportation Electrification, p. 78).
**CONCLUSION**

We must shift our excessive spending on highways towards walking, biking, rail, and transit. Virginia’s transportation policies and investments need to prioritize the development of a cleaner and more equitable multi-modal transportation system that strengthens our communities, reduces carbon pollution, and protects our natural, historic, and scenic resources. We don’t need more money to boost Virginians’ mobility and health, we just need to spend our current transportation dollars smarter and to overhaul how we plan transportation projects to boost our mobility, health, and environment.

**POLICY RECOMMENDATIONS**

<table>
<thead>
<tr>
<th><strong>Fund alternatives to driving.</strong></th>
<th><strong>Improve performance standards and funding priorities.</strong></th>
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<tr>
<td>Shift funding from highway expansion to transit, rail, bicycle, and pedestrian projects—including increase transit and rail capital and operating funding to at least 30% of the entire state transportation budget by 2025 and at least 50% by 2030.</td>
<td>Require state and regional transportation plans to cut greenhouse gas emissions, reduce per capita vehicle miles traveled, and increase mode share for transit, rail, walking, bicycling, and telecommuting.</td>
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<td>Fully fund planned initiatives to provide cleaner transportation alternatives, including the Virginia Passenger Rail Authority, the Transit Ridership Incentive Program, the Commonwealth Rail Fund, the Commonwealth Mass Transit Fund, and projects such as the expansion of Long Bridge.</td>
<td>Require VDOT to study the impacts of proposed major highway projects on greenhouse gas emissions and climate sinks.</td>
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<tr>
<td>Allow Hampton Roads regional funds to be spent on all transportation modes, not just highway projects</td>
<td>Increase weight given to transportation projects’ effect on greenhouse gas emissions and to impacts on carbon sinks in state and regional funding prioritization.</td>
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<tr>
<td><strong>Require the Northern Virginia Transportation Authority</strong> to allocate at least 50% of regional transportation revenues to transit and rail by 2025, and the Hampton Roads Transportation Accountability Commission and the Central Virginia Transportation Authority to allocate at least 30% of revenues to transit and rail by 2025, and all other regions with regional transportation funding to allocated at least 20% of those funds to transit and rail by 2025.</td>
<td>Oppose giving greater weight to congestion mitigation and economic development, weakening or eliminating environmental quality and land use in project scoring, and exempting any project from SMART SCALE.</td>
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<tr>
<td>Apply prioritization standards similar to SMART SCALE to all regional funding.</td>
<td><strong>Support regional transportation process reform.</strong></td>
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<tr>
<td>Enhance public involvement in transportation planning by adding Virginian representatives to regional transportation boards and bodies.</td>
<td><strong>Improve assessment of the impacts of local and regionally funded projects.</strong></td>
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INTRODUCTION
Whether it is buses, light rail, or the Metro, transit is an essential public service in every region of Virginia. This has been starkly apparent during the COVID-19 crisis, when transit has been critical for transporting healthcare, grocery, and other essential workers to and from jobs. Public transportation systems provide access to jobs and housing, attract economic development, alleviate road congestion, and reduce carbon emissions and other air pollutants that harm public health. Despite real progress on transit funding in 2020, Virginia still spends far too small a share of its transportation dollars on transit.

BACKGROUND
Transit’s role in Virginia goes beyond providing essential mobility. Public transportation incentivizes economic development, is a critical lifeline for rural communities and differently-abled people, and is vital for reducing vehicle air pollution – which harms our health and has a disproportionate impact on children, senior citizens, people of color, historically marginalized communities, and low-income areas. Transportation is now the greatest source of carbon pollution in the state. With less than 10 years to reduce emissions before it is too late to mitigate climate impacts, we need transit and transit-oriented development to dramatically reduce vehicle miles traveled (VMT) and the resulting greenhouse gas emissions.1 We must also begin to electrify transit vehicles to cut both emissions and diesel pollution, centering these efforts in communities of color and low-income communities that have traditionally faced heavier transit-related air pollution.

Before the 2020 session, transit and rail received just 12 percent of Virginia’s total transportation budget.3 In the 2020 session, HB1414/SB890 increased and restructured transportation funding so that transit is now allocated 23 percent of the Transportation Trust Fund.4 However, when accounting for the Highway Maintenance and Operations Fund, Route 58, and VDOT Northern Virginia District allocations, transit likely receives much less than 23 percent of total funds.5 With Hampton Roads and Greater Richmond’s transit agencies currently two of the three worst funded transit systems in the country per capita, our current transit spending clearly does not empower the Commonwealth to build out the high-quality, environmentally just, and economically competitive public transportation systems we need in order to provide more Virginians a faster, cleaner, and more affordable commute.

In the 2020 session, the Virginia Clean Economy Act (VCEA) codified a plan to decarbonize Virginia’s electric grid. The Virginia Department of Transportation (VDOT) and Department of Rail and Public Transportation (DRPT), however, currently lack codified mechanisms for addressing the climate crisis or sufficiently accounting for climate impacts in the agency’s strategic planning process. These agencies must commit to reduction in VMT and transit expansion, including converting car lanes to dedicated bus lanes.

Current transit funding levels do not match the transportation needs or population changes of the Commonwealth, nor the wishes of its residents for better access to areas with high concentrations of jobs. Most Virginians live in areas where transit can be a particularly efficient and convenient travel option – 65 percent of the Commonwealth’s population lives in the urban crescent encompassing Northern Virginia, Fredericksburg, Richmond, and Hampton Roads. Another 8-10 percent of the population resides in other cities, towns, and close-in suburbs.2 Increased funding for transit can help address racial inequities that persist from residential segregation caused by highway construction, exclusionary zoning practices, and lower transportation spending in rural, low-income, and communities of color. Transit is vitally important to low-income Virginians who otherwise might not have access to personal cars and differently-abled residents who may not have the physical capacity to operate one. Their ability to work, shop, and provide for their families depends upon reliable transit backed by consistent state and federal investment.

EXPANDING PUBLIC TRANSIT
Tyneshia Griffin // New Virginia Majority | Kim Jemaine // Chesapeake Climate Action
Stewart Schwartz // Coalition for Smarter Growth

OUR CURRENT TRANSIT SPENDING CLEARLY DOES NOT EMPOWER THE COMMONWEALTH TO BUILD OUT THE HIGH-QUALITY, ENVIRONMENTALLY JUST, AND ECONOMICALLY COMPETITIVE PUBLIC TRANSPORTATION SYSTEMS WE NEED IN ORDER TO PROVIDE MORE VIRGINIANS A FASTER, CLEANER, AND MORE AFFORDABLE COMMUTE.
Additional funding for transit is essential for providing for more frequent (every 15 minutes or less), affordable, and reliable service that generates high ridership and attracts business. Other important features are dedicated lanes to speed service and on-time performance, high-quality weather shelters and benches, informative signage, real-time arrival information, and streets designed to be safe for walking to and from stops.

**CONCLUSION**

Transit is essential for improving access to jobs, education, healthcare, and services for all Virginians and reducing vehicle trips, greenhouse gas emissions, and other air pollutants. Strengthening environmental justice, economic competitiveness, and climate change resiliency depends on action in 2021 and beyond to significantly increase the state’s investment in transit.

**POLICY RECOMMENDATIONS**

**Increase the Percentage of Overall Transportation Dollars Towards Transit**

- Increase transit and rail capital and operating funding to at least 30% of the entire state transportation budget by 2025 and at least 50% by 2030.
- Require the Northern Virginia Transportation Authority to allocate at least 50% of regional transportation revenues to transit and rail by 2025, and the Hampton Roads Transportation Accountability Commission and the Central Virginia Transportation Authority to allocate at least 30% of revenues to transit and rail by 2025, and all other regions with regional transportation funding to allocate at least 20% of those funds to transit and rail by 2025.

**Protect & Expand Opportunities for Zero Fare Transit**

- Protect the Transit Ridership Incentive Program from cuts to continue providing low-income Virginians with access to affordable fares.
- Utilize state funding to encourage zero-fare transit across Virginia throughout the duration of the pandemic while it is necessary to protect riders and operators, and at the onset of economic recovery to increase ridership levels.

**Require DRPT to annually audit local agencies and jurisdictions to ensure that expanded bus service, more comfortable and covered weather shelters, and safe walking access to stops are equitably distributed across localities and regions and directly benefiting underserved communities.**

**Require VDOT to support the expansion of transit for the reduction of vehicle miles traveled and greenhouse gas emissions through funding the conversion of arterial lanes to dedicated bus lanes, such as in high capacity transit corridors.**

**Require transit agency development plans and strategic plans to account for and reduce greenhouse gas emissions through procurement of zero emissions vehicles, route planning, fare reduction, and increased ridership.**

**Require at least one rider representative on the governing board of all transit agencies receiving state funding.**
INTRODUCTION
Compelling environmental and economic benefits flow from the maximum use of rail transportation for the movement of both people and goods – including the energy efficiency of rail and the comparatively small footprint railroads have on our natural lands and the health of our communities. Most of the rail tracks in Virginia are owned and controlled by CSX and Norfolk Southern; however, the public interest in maximizing the benefits of freight and passenger rail and the interests of these railroads are not always congruent. At a time when Virginia is planning to implement a number of important projects to expand rail capacity, CSX and Norfolk Southern are focused on downsizing and disinvesting—laying off people and selling off capital assets such as track, freight cars, locomotives, and facilities. Policies and investments are needed to achieve the public interest in preserving existing facilities and service, expanding passenger train service, and moving freight from pollution intensive diesel trucks to cleaner rail along key corridors.

BACKGROUND
Historically Virginia has been well served by its two major, Class I railroads (CSX and Norfolk Southern) as well as a dozen or more shortline railroads and passenger carriers (Amtrak and Virginia Railway Express). In recent decades, great progress has been achieved in expanding passenger rail service using tracks owned by the freight railroads. This has involved often delicate negotiations and public investment in facilities owned by private railroads. Despite these obstacles and as a result of such efforts, Virginia now enjoys far more passenger rail options than most states, with growing service beginning to meet growing demands.

Throughout the 50-plus years of build-out of the Interstate Highway System, higher value merchandise rail freight has been diverted to trucks. Recently, the coal traffic on which Virginia’s railroads so heavily depended has fallen drastically with little likelihood of recovering. The impact of these losses is reflected in an excess of infrastructure for the railroads’ current freight traffic demands. Because railroads pay property tax on all their track, structures, and rolling stock, it is often quicker and easier to positively affect their financial results by getting rid of these assets than by working to develop new business to utilize them more fully.

Atrophy of the railroad infrastructure in Virginia can be both a serious problem and a significant opportunity. Reduced freight rail capacity can cause tonnage to shift to trucks on highways, ballooning the carbon footprint of moving goods, straining existing road capacity, exacerbating safety issues, and increasing the cost to taxpayers where new capacity must be built and maintained. At the same time, railroad infrastructure being divested can provide the basis for new public transportation initiatives.

REDUCED FREIGHT RAIL CAPACITY CAN CAUSE TONNAGE TO SHIFT TO TRUCKS ON HIGHWAYS, BALLOONING THE CARBON FOOTPRINT OF MOVING GOODS, STRAINING EXISTING ROAD CAPACITY, EXACERBATING SAFETY ISSUES, AND INCREASING THE COST TO TAXPAYERS WHERE NEW CAPACITY MUST BE BUILT AND MAINTAINED.

An example of the first situation is in the Interstate 81 Corridor. The Federal Highways Administration (FHWA) truck density map shows this to be among the most heavily traveled routes in the U.S. The need for new freight capacity along the corridor often gives rise to discussion of expansion options for I-81. Yet a Norfolk Southern rail line parallels I-81 all the way from central Pennsylvania to Knoxville, TN. Projects to expand or enhance freight capacity along the corridor should be explored to provide a more economical and environmentally-friendly way to shift shipping from trucks to rail rather than further expanding an already dangerous highway.

An example of the second situation where redundant rail assets can be put to good public use is the December 2019 agreement between the state and CSX to divest trackage and right of way on the D.C. to Richmond, Petersburg to Raleigh, and Buckingham Branch corridors for expanded use by passenger trains. The nascent Richmond to Raleigh high speed rail corridor is unlikely to ever become a reality unless we preserve that abandoned rail corridor for future public use.

In addition to expanding rail capacity, further opportunities to reduce emissions from rail need be
pursued. Railroad electrification is common worldwide, except in North America. Even in our own region, electric trains from Maryland cannot run service to and from Virginia due to our state’s lack of electrified rail service. The technology is mature and available, and opportunities to electrify Virginia’s railroads should be given greater priority.

**CONCLUSION**

Our state policies must place greater priority on rail to reduce traffic congestion as well as carbon pollution. Further, public private partnerships with Virginia’s Class I railroads can enhance the capacity, speed, and reliability of the freight rail system and reduce highway truck volumes, improving safety and reducing pollution. Such partnerships – including public ownership of rail corridors – can also enable expansion of passenger rail service. Rail assets divested by the Class I railroads should be “rail-banked” to allow for future growth in rail service and to preserve right of way for the public good.

**POLICY RECOMMENDATIONS**

- **Fully fund planned rail initiatives in Virginia**, including the new Virginia Passenger Rail Authority, The Commonwealth Rail Fund, and projects such as the expansion of Long Bridge.

- **Oppose the diversion of rail funds to highway expansion or any other use.**

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

- **Ensure the Virginia Passenger Rail Authority has the resources and legal framework to create a “rail bank” to preserve rail corridors divested by the Class I freight railroads so they remain intact for public use.**
ADVANCING TRANSPORTATION ELECTRIFICATION
Steve Banashek // Sierra Club Virginia Chapter | Elly Boehmer // Environment Virginia
Will Cleveland // Southern Environmental Law Center

INTRODUCTION
Air pollutants from transportation have major impacts on our health as well as our climate. They represent particular dangers to children, seniors, and those living near Virginia's largest source of carbon emissions – heavily trafficked roads, which often run through low-income neighborhoods and communities of color. While land use reform and reduction of vehicle miles traveled must be our top tools to combat growing air pollution from transportation, the electrification of our remaining vehicle trips is necessary to ease the problem while longer term reforms take hold. Because all-electric vehicles (EVs) emit no tailpipe emissions, they produce no air pollution and reduce carbon emissions, especially over time as the electric grid becomes greener. Virginia can exhibit bold leadership and promote a transition to 100 percent electric on-road transportation by expanding charging infrastructure and accelerating electric transportation.

BACKGROUND
There is a significant opportunity to advance transportation electrification in Virginia. The Commonwealth currently ranks 23rd in its adoption of EVs, with less than two percent of all new auto sales being either all-electric cars or hybrids. With the typical car emitting more than 11,000 pounds of carbon dioxide per year, three out of four Virginia commuters drive to work alone. In contrast, the amount of electricity required for the same amount of EV driving emits nearly one fourth that amount. This means EVs improve local air quality, which results in lower incidences of asthma, heart attacks, strokes, early deaths, harm to pregnant mothers and babies, and other illnesses exacerbated by particulate matter and ground-level ozone.

Policies supporting transportation electrification are also good for the economy and can help consumers save money. Most EVs have equivalent miles per gallon ratings of 90 mpg or better because they are 200-300 percent more efficient than vehicles with combustion engines. Since electricity is less expensive than gasoline, EVs also cost less to fuel even when gasoline prices are low: an “electric gallon” in Virginia costs only $1.07. The fact that electricity prices are more stable than volatile gasoline and diesel prices is another benefit. Furthermore, EVs are easier and less expensive to maintain because they have fewer parts (no exhaust system, fuel injection system, radiator, spark plugs, engine oil, etc.) and thus require less maintenance. Considering all these environmental and financial benefits, Virginia should adopt an ambitious goal for EV adoption: 40 percent of light duty vehicles on the road and 100 percent of light-duty vehicles sold should be electric by 2040.

EIGHTY PERCENT OF 2020 EVS HAVE EQUIVALENT MILES PER GALLON RATINGS OF 90 MPG OR BETTER BECAUSE EVS ARE 200-300 PERCENT MORE EFFICIENT THAN VEHICLES WITH COMBUSTION ENGINES.

TRANSIT BUSES
Pollutant and carbon emissions from fossil fuel transit buses are also significant contributors to both local and overall air pollution. As these buses operate in denser, more urbanized areas where carbon pollution impacts more people – particularly neighborhoods with higher percentages of people of color and low-income families – they must be a top priority for electrification. In addition to its environmental benefits, fleet electrification of transit vehicles can save upwards of 50 percent on fuel costs and around 40 percent on maintenance costs compared to diesel buses. The operating life of a transit bus is 12-15 years, making it critical that Virginia provide a funding mechanism and encourage transit fleet operators to adopt electric buses as soon as possible. Fleet operators need help to run electric bus pilots now so that they can lock in transition plans to only operate electric buses by 2035.

SCHOOL BUSES
The air quality inside diesel school buses is generally 5-10 times worse than the air outside them. As diesel engine exhaust is carcinogenic to humans, continued use of diesel buses means Virginia exposes its children to pollution and particulate matter that can lodge deep into the lungs and heart, increasing risks of premature death, aggravated asthma, and decreased lung function. Diesel exhaust from idling school buses also pollutes the air in and around the bus and can enter school buildings through air intakes, doors, and open windows. For the health of children across Virginia, we need a plan to electrify all school bus fleets by 2030, with school districts in high-pollution and low-income communities receiving first priority.
**MUNICIPAL VEHICLES**
To electrify the Commonwealth’s transportation, government in Virginia must lead by example. Light-duty cars such as electric police patrol cars and motorcycles\(^\text{11}\) are already in use across the country and many medium- and heavy-duty EVs are on the way. Beyond reducing emissions and air pollution, EV fleets would save localities millions of dollars by reducing fueling and maintenance costs by 80 percent, as has been done in the City of Roanoke.\(^\text{14}\) Virginia needs a roadmap to ensure municipal vehicle fleets are electrified as soon as possible.

**CHARGING STATIONS**
Not every person lives in a home where a charger can be installed in a driveway or a garage – many people live in multi-family structures and apartments. The private market often won’t install EV charging stations in low- and moderate-income communities due to the perceived lack of a market.\(^\text{15}\) That means Virginia needs a comprehensive plan to lower the cost of installing public charging infrastructure and ensure that EV owners have access to charging stations when they need them.

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**CONCLUSION**
Transportation continues to be Virginia’s largest source of carbon emissions (48 percent) and a top source of other harmful pollutants that damage both our environment and our health. While it takes time to build smarter and expand biking, walking, and transit, the adoption of EVs can ease this transition and provide significant reductions in transportation emissions. Accelerating transportation electrification can yield immediate health, environmental, and economic benefits for all Virginians.

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**POLICY RECOMMENDATIONS**

- **Develop a comprehensive transportation electrification plan similar to the roadmaps published in several other states and as recommended in the 2018 Virginia Energy Plan.**

- **Establish an Equitable Electrification Fund to pay** to fully electrify school buses by 2030, transit buses by 2035, all light-duty municipal vehicles by 2030, medium-duty vehicles by 2035 and heavy-duty vehicles by 2040, and incentivize a market where all new personal vehicles sold are fully electric by 2040. Money from this fund would prioritize the transition in low-income jurisdictions, communities of color, and localities with low air quality and public health outcomes.

- **Conduct a feasibility study of financial models** that would allow school districts to enter into budget-neutral contracts with third party owners of electric school buses without increasing costs for electricity ratepayers.

- **Provide tax breaks to gas stations along highly-traveled corridors which install EV charging infrastructure and distributed solar to support it, as well as to companies that introduce E-bike delivery of goods or switch their fleet vehicles to EVs.**

- **Authorize localities to pass ordinances that** incentivize the installation of EV charging facilities at residential and commercial locations, and amend statewide building codes to ensure residential, office, and retail development have “EV ready” wiring, which is less costly than retrofitting.

- **Ensure access to public EV charging stations** by imposing a fine on drivers who park a non-EV in a space that is clearly marked for charging only. Violators could also have their car towed or impounded.
INTRODUCTION
Air pollution from transportation threatens both our health and our climate. Transportation is the largest source of Virginia’s greenhouse gas emissions, emitting 48 percent of our carbon dioxide pollution. Vehicles also emit other pollutants that present particular dangers to children, senior citizens, and those suffering from common respiratory illnesses such as asthma. Low-income neighborhoods and communities of color, which are disproportionately situated along heavily trafficked corridors, are at an even greater risk of adverse effects from vehicle pollution. Fortunately, there are many opportunities to lower emissions from transportation while also strengthening our communities and improving public health.

BACKGROUND
While Virginia has made impressive progress recently in passing legislation to cut carbon dioxide from our power sector, we have done comparatively little to address transportation emissions as vehicles miles traveled in the state soars ever higher. The typical passenger car emits about 28 pounds of carbon dioxide per day. With 7.5 million vehicles registered in Virginia and an average of over 234 million miles driven daily, that adds up to a staggering amount of carbon pollution emitted in our state each day. Virginia needs a multi-pronged approach to significantly reduce vehicle miles traveled on our roads and to fast-track adoption of zero-emission passenger, transit, and school bus vehicles in order to minimize emissions from remaining vehicle trips.

Advancing walkable smart growth development, enhancing intercity passenger rail, and improving public transit are just some of the strategies Virginia can leverage to reduce driving and decrease air pollution, while also expanding travel options and contributing to healthier and more equitable communities. In addition to reducing our dependence on cars, we must lower the carbon pollution that results from when we do drive. To make this a reality, Virginia should join the 14 other states that have used authority in Section 177 of the Clean Air Act to implement the stronger standards of the Advanced Clean Cars Program’s Low Emission Vehicles (LEV) provisions. Virginia should also adopt the Zero Emissions Vehicle (ZEV) standards which require manufacturers to sell an increasing number of electric and hybrid electric cars in participating states. In Virginia, driving an all-electric car can reduce personal transportation emissions by up to 70 percent.

Adopting the Advanced Clean Cars standards would not only reduce Virginia’s carbon pollution but also improve public health and reduce health care costs. Because fully electric vehicles have no tailpipe exhaust, they also improve local air quality. An analysis by the American Lung Association found that a complete turnover of the vehicle fleet to EVs in California in the period from 2010 to 2025 would have prevented “hundreds of premature deaths and tens of thousands of asthma attacks and workdays lost to respiratory illness.”

To make such a healthy future a reality, ZEV standards and other policies that support our transition to electric vehicles will be essential. Today in Virginia, the cost of charging an EV is roughly half the cost of an equivalent amount of gasoline, and annual maintenance is much lower, too. Yet higher up-front costs – including the additional expense of installing a home charging station, and the lack of charging options for those who cannot charge at home or are traveling long distances – impede large-scale adoption.

As a participant in the Transportation Climate Initiative (TCI), Virginia is currently working with 11 other states and the District of Columbia to design and fund policies to reduce greenhouse gas emissions from transportation. A leading proposal being developed would create a “cap and invest” program that would cap carbon emissions from transportation and allow member states to use revenues from the sale of carbon emissions allowances to invest in projects and programs that reduce carbon emissions and increase the accessibility and affordability of cleaner transportation options. By adopting the policies that come out of the TCI process, Virginia can simultaneously expand low-carbon transportation options and begin to address the inequities built into our transportation system.
CONCLUSION
Transportation is Virginia’s largest source of carbon pollution and a key source of other harmful pollutants. Currently EVs make up less than 2 percent of the Commonwealth’s vehicles. In order to build a healthier future and help address our climate crisis, Virginia needs to accelerate our transition to cleaner transportation. By adopting policies and making investments to provide more alternatives to driving and to promote electric vehicles, we can pursue a multi-pronged approach to both reduce vehicles miles traveled and electrify remaining trips taken by cars.

POLICY RECOMMENDATIONS

Implement Advanced Clean Car standards for new vehicles 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 development and implementation of the TCI to reduce greenhouse gas emissions from transportation and ensure that Virginia directs its TCI revenues toward programs to reduce driving, to make cleaner transportation options more accessible to historically disadvantaged communities, and to monitor air quality and protect environmental justice frontline communities from air pollution. A minimum of 30% of all revenue should be invested into environmental justice communities.

Require emissions testing in localities that have asthma rates above the national average.

Virginia should join the 15 states and the District of Columbia which have signed a memorandum of understanding (MoU) to work together to ensure 100% of medium- and heavy-duty sales are zero-emissions vehicles by 2050.

Take other steps to accelerate the transition to EVs (see Advancing Transportation Electrification, p. 78).
ENDNOTES

TRANSFORMING TRANSPORTATION

EXPANDING PUBLIC TRANSIT
ADVANCING TRANSPORTATION ELECTRIFICATION

1 Environmental Defense Fund, “Health Impacts of Air Pollution.”
2 EIA, State Energy-Related Carbon Dioxide Emissions by Sector, 2017.
4 Department of Energy Alternative Fuels Data Center.
6 Department of Energy / Environmental Protection Agency.
8 Horrox, James and Casale, Matthew, “Electric Buses in America.”
10 International Agency for Research on Cancer, June 2012.
11 The Morning Call, January 2020.
12 Global Environmental Products, April 2019.
13 Horrox, James and Casale, Matthew, “Electric Buses in America.”

CURBING VEHICLE POLLUTION

1 EIA, State Carbon Dioxide Emissions Data https://www.eia.gov/environment/emissions/state/.
2 Inequitable Exposure to Air Pollution from Vehicles in the Northeast and Mid-Atlantic, Union of Concerned Scientists https://www.ucsusa.org/resources/inequitable-exposure-air-pollution-vehicles.
SUMMIT OF THE BUZZARD ROCK NORTH HIKE BETWEEN STRASBURG AND FRONT ROYAL, VA.
Image credit: Kelli Williams
Land conservation is crucial to protecting Virginia’s natural resources. When land is saved from future development, clean water, clean air, wildlife, beautiful views, food, history, a sense of place, peace of mind, and physical and mental health can also be saved. Virginia’s landscapes also help support the backbone of its economy: agriculture, forestry, and tourism. However, land conservation efforts are often pushed aside in the interest of further development. Protecting our landscapes means creating a more resilient food system, minimizing the impacts of utility-scale solar, and ensuring the public benefits of conservation easements.
HEALTHY, RESILIENT COMMUNITIES AND LANDSCAPES
Virginia has a major opportunity and needs to step up its investments in land conservation. Without doing so, we will continue to lose many of the lands that support the backbone of Virginia’s economy: agriculture, forestry and tourism. Providing additional funding will allow us the opportunity to expand upon the 197,000 jobs statewide that depend on our thriving outdoor recreation industry.

David Perry // Blue Ridge Land Conservancy // dperry@blueridgelandconservancy.org
Alan Rowsome // Northern Virginia Conservation Trust // arowsome@nvct.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 how to best direct the revenues to ensure the greatest and most equitable conservation outcomes for all Virginians.

Reed Perry // Chesapeake Conservancy // rperry@chesapeakeconservancy.org
Zachary Sheldon // The Nature Conservancy // zacharysheldon@tnc.org

CREATING A MORE RESILIENT FOOD SYSTEM
The Commonwealth can build more reliable and resilient food production and supply systems through targeted investments that (re)build local and regional food distribution networks, expand small scale food processing facilities, and conserve agricultural lands. Pursuing a more holistic and regionally based food supply chain offers diversification and augmentation to a national food distribution system that showed strain under the COVID-19 pandemic.

Parker Agelasto // Capital Region Land Conservancy // parker@capitalregionland.org
Michael Kane // Piedmont Environmental Council // mkane@pecva.org
John McCarthy // Piedmont Environmental Council // jmccarthy@pecva.org
PROTECTING HISTORIC AND CULTURAL RESOURCES
Virginia hosts a diverse array of historic, archaeological, and cultural resources - arguably the most significant of any 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.

Adam Gillenwater // American Battlefield Trust // agileenwater@battlefields.org
Elizabeth Kostelny // Preservation Virginia // ekostelny@preservationvirginia.org

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 lay the foundation for best practices to maximize the benefits and minimize the impacts.

Will Cleveland // Southern Environmental Law Center // wcleveland@selcva.org
Dan Holmes // Piedmont Environmental Council // dholmes@pecva.org

ENSURING THE PUBLIC BENEFITS OF CONSERVATION EASEMENTS
Virginia’s strong conservation policies have led to unprecedented success in the widespread use of conservation easements--most donated as charitable gifts to the Commonwealth or a nonprofit conservation organization. Ensuring that these gifts will persist for the benefit of future generations requires an explicit policy regarding judicial interpretation of easements.

Dan Holmes // Piedmont Environmental Council // dholmes@pecva.org
Nikki Rovner // The Nature Conservancy // nrovner@tnc.org
INTRODUCTION
Successful land conservation requires coordination and resources at all levels to protect the Commonwealth’s working farms and forests, urban natural areas, scenic landscapes, wildlife habitat, historic resources, and parks and recreational areas. As our population continues to grow and we learn from what matters most to people when times are difficult, we must continue to grow the number of opportunities Virginians and visitors alike have to access these amazing places. Land conservation is also critical in achieving the measurable goals of protecting water, soil and air quality, water supply, building climate resilience, and safeguarding the Chesapeake Bay watershed.

The conservation community recognizes that there are communities that are underserved by existing land conservation programs. We are committed to working with the Virginia Outdoors Foundation and other state agencies to determine how better to serve those communities. While Virginia offers a variety of popular and successful land conservation programs, there are untapped opportunities available through federal funding, local government programs, and private philanthropic efforts that can bolster these current approaches.

BACKGROUND
Why protect land? Peter Lewis grew up in Washington, DC, but spent his summers working on his aunt and uncle’s dairy farm in Fauquier County. As an African-American child from the city, his youthful experiences in the rolling Virginia countryside did not mirror those of his peers. The son of an educator and an attorney, Peter earned a teaching degree at West Virginia State College and returned to Washington to teach.

In 1963, two men approached Peter and asked if he would take their two teenage brothers for an experience different to what they’d grown up with in the city. Lewis brought the two younger brothers to his aunt and uncle’s dairy farm, where they were amazed at the expanse of open land. It was then that Lewis had what he calls his moment of clarity. “I realized that those two boys never knew what I grew up with,” he said, and credited it for his dream to create a place where city kids could “get away and experience something new.”

That place became Apple Ridge Farm in Floyd County in 1978. An educational summer camp for kids, children often participated in an activity called “Time Out” where they would stand in a circle and for a full five minutes would not speak or make noise. They then took turns telling the group what they did hear. Says Lewis, “One student would say they heard birds, another would say they heard the breeze in the trees. One young lady who was normally quite talkative didn’t say anything. I thought maybe she didn’t like the activity. So I asked her what she had heard and she replied, ‘Nothing. And I liked it.’ For a thirteen year-old girl who is more comfortable walking around the mall than out in the woods, that’s something.”

WHEN ONE SAVES LAND FROM FUTURE DEVELOPMENT, ONE SAVES EVERYTHING ON THE LAND, AND EVERYTHING THAT IT PROVIDES: CLEAR WATER, CLEAN AIR, WILDLIFE, BEAUTIFUL VIEWS, FOOD, TIMBER, TEXTILES, HISTORY, SENSE OF PLACE, PEACE OF MIND, AND PHYSICAL AND MENTAL HEALTH.

That is why we save land...for the next generation. And the next and the next and the next. And for so many more reasons.

When one saves land from future development, one saves everything on the land, and everything that it provides: clear water, clean air, wildlife, beautiful views, food, timber, textiles, history, sense of place, peace of mind, and physical and mental health. Land drives Virginia’s economy, from agriculture to forestry to tourism. It attracts new companies looking for quality of life for their employees.

The 2021 General Assembly session will no doubt be a challenging one. Legislators will be adapting to reduced revenues due to the COVID-19 pandemic and the subsequent economic downturn. The pandemic has taught us many lessons – lessons about community, family, and what really matters in life. It’s also taught us that the outdoors are absolutely essential for our health and well-being.

How much ink has already been dedicated to directives on proper social distancing while jogging...
or being in parks? Or on the importance of Vitamin D to one’s immune system, a vitamin which the body manufactures when sunshine hits the skin?

As Virginia cities and counties passed reduced budgets in the late spring of 2020, parks and outdoor recreation infrastructure took the brunt of many of the spending cuts. Virginia’s land conservation tools—the Land Preservation Tax Credit, the Virginia Land Conservation Fund, the Virginia Outdoors Foundation -- and others -- must not bear the brunt of similar state funding shortfalls.

Such a decision would reflect a lack of foresight and a missed opportunity to invest in the places that have provided refuge to so many Virginians during the turmoil that we have been through this past year. It might be a tiny pocket park in Arlington or an expansive farm in Albemarle County, but outdoor spaces have been absolutely critical to people’s mental and physical health this year in ways we never thought possible. Open space is indispensable. Whether you’re a Virginia farmer, a forester, an out-of-state tourist gazing on the Blue Ridge Mountains, a CEO looking to expand, or a thirteen year-old girl from the city who’s enjoying her first taste of peace and quiet, Virginia’s open spaces are part of the fabric of who we are and well worth the critical investments that return so much more to our state than what they cost.

CONCLUSION
Virginia has a major opportunity and needs to step up its investments in land conservation. Without doing so, we will continue to lose many of the lands that support the backbone of Virginia’s economy: agriculture, forestry, and tourism. Providing additional funding will allow us the opportunity to expand upon the 197,000 jobs statewide that depend on our thriving outdoor recreation industry.¹

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.

The conservation community recognizes that there are communities that are underserved by existing land conservation programs. We are committed to working with the Virginia Outdoors Foundation and other state agencies to determine how better to serve those communities.

GESE IN FRONT OF A FULL MOON IN NOVEMBER.
Image credit: George Ohrstrom
EXPLORING DEDICATED FUNDING FOR CONSERVATION
Reed Perry // Chesapeake Conservancy | Zachary Sheldon // The Nature Conservancy

INTRODUCTION
Virginia’s Constitution directs the Commonwealth “to protect its atmosphere, lands, and waters from pollution, impairment, or destruction, for the benefit, enjoyment and general welfare of the people”. Despite this, Virginia’s investment in its natural resources has been inconsistent and significantly lower than its peers, averaging less than one percent of its total budget towards natural resources. \(^1\) VIRGINIAforever’s five-year plan recommends investing nearly $370 million per year in Virginia’s lands and water. \(^2\) Without dedicated funding for conservation, Virginia cannot meet its constitutional commitment.

The limited availability and inconsistency of funding inhibits the Commonwealth’s effort towards cleaner air and water, healthier soils, improved habitats for fish and wildlife, and expanding access to outdoor recreation. Dedicated funding would accelerate work to enhance these benefits to all Virginians.

Other states have established dedicated funding mechanisms to address their natural resource management needs. Below are some of the mechanisms used to meet the needs of residents and rough estimates of what those mechanisms could generate in Virginia, and our recommendation for the Commonwealth to act.

BACKGROUND
SALES TAX
Arkansas, Minnesota, Missouri, and New Jersey have all used part of their sales tax to support land conservation, dedicating a portion of their existing sales tax or increasing the tax and allocating the additional revenue to natural resources.

Since 1998, New Jersey has dedicated $98 million of its existing state sales tax revenue annually to the Garden State Preservation Trust. \(^3\) Tasked with preserving open space, farmland, and historic sites, investments from the Trust have protected over 440,000 acres through 2018. \(^4\) In 2008, Minnesota increased the sales tax by 3/8th of one percent until 2034 and dedicated the revenue to the Minnesota Legacy Fund. The Fund splits the revenue into four funds: 33 percent goes to the Clean Water Fund; 33 percent to the Outdoor Heritage Fund; 19.75 percent to the Arts and Cultural Heritage Fund; and 14.25 percent to the Parks and Trails Fund. \(^5\)

In FY 2019, Virginia collected $4,981,556,00 in state sales and use taxes. Of this amount, $3,580,355,000 was deposited into the General Fund, with the remainder dedicated to existing funds. \(^6\) Raising and dedicating Virginia’s sales tax by 1/8th of 1 percent could potentially generate over $140 million in revenue for natural resources. \(^6\)

OUTDOOR GOODS SALES TAX
Texas and Georgia have dedicated all or portions of the sales tax collected on outdoor goods, such as backpacks and other hiking gear, towards natural resources. At this time, no state has increased the sales tax on outdoor goods specifically to fund conservation efforts.

Since 1993 Texas has been dedicating a portion of the sales tax on outdoor goods to fund its state park system. \(^1\) The tax generates over $100 million per year. \(^7\) In 2018, Georgia established the Georgia Outdoor Stewardship Fund, dedicating up to 80 percent 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. \(^8\) It is estimated to generate around $20 million a year. \(^9\)

In 1998, Virginia passed legislation directing up to $13 million a year of the existing sales tax on hunting, angling, and wildlife watching equipment to the Game Protection Fund. However this fund is not truly dedicated, as the General Assembly determines the final appropriation. \(^10\)

LOTTERY PROCEEDS
Colorado, Minnesota, Nebraska, and Oregon have dedicated all or portions of their lottery proceeds to bolster funding for conservation.
Since 1998, Oregon has dedicated 15 percent of lottery proceeds to the Parks and Natural Resources Fund, split evenly to support state parks and watershed enhancement/salmon restoration.\(^{11}\) Since 1992, Colorado has dedicated 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.\(^{12}\)

Virginia currently dedicates all of its lottery proceeds to public education. In FY 2019, this provided nearly $650 million in revenue.\(^{13}\)

**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. Arkansas, Delaware, Hawaii, Illinois, Maryland, New York, Pennsylvania, South Carolina, Tennessee, and Vermont all use portions of real estate transfer taxes on conservation. In this way, states can effectively balance economic growth and land use change pressures with conservation.

In 1969, Maryland established a 0.5 percent property transfer tax to fund Program Open Space, which helps to acquire and develop state and local parks and preserves and unique natural areas.\(^{14}\) The transfer tax also supports agricultural preservation and other natural lands preservation through the Rural Legacy Program and through the Maryland Agricultural Lands Preservation Foundation (MALPF).

Together, these programs have invested in the protection of over 390,000 acres of land.\(^{15}\) In the past four years alone (2017 - 2020), transfer tax revenues have provided $158.9 million for state acquisitions, $181.8 million for local land acquisition and park development, $90 million for the Rural Legacy Program, and $176.8 million for MALPF.\(^{16}\)

In 2019, there were 126,305 home sales at a median sale price of $295,000 in Virginia.\(^{17}\) Given these home sale statistics, a 0.1 percent transfer tax levied on real estate transactions could generate more than $37 million per year for conservation and acquisition projects.

**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 how to best direct the revenues to ensure the greatest and most equitable conservation outcomes for all Virginians.

**POLICY RECOMMENDATION**

*The General Assembly should establish a dedicated funding mechanism that, at a minimum, provides 25% of the annual recommended funding for natural resources included in the VIRGINIAforever’s plan “The Path Forward: Investing in Virginia’s Land and Water”.*\(^{18}\)
INTRODUCTION
The COVID-19 pandemic has inflicted devastating harm on Virginians and our economy. As the Commonwealth begins to recover, an opportunity is presented to reimagine the supply chain that produces and delivers food to consumers, creating systems that are more diversified, regional, and resilient. Such a vision calls on the Commonwealth to ensure a critical mass of productive farmland, make strategic investments in local food production and processing capacity, and build resilient and flexible local food distribution systems that meet the food security needs of all Virginians.

BACKGROUND
Agriculture remains Virginia’s largest private industry with an economic impact of $70 billion annually and more than 334,000 jobs in the Commonwealth. Many Virginia commodities and products rank in the top 10 among all U.S. states including apples, 6th; grapes, 8th; peanuts, 9th; and fresh market tomatoes, 10th. Virginia farm size is 181 acres and the typical Virginia farmer is 58.5 years old. The number of farms and agricultural acreage have seen a nine percent reduction since the 2001 Virginia Census of Agriculture.

According to American Farmland Trust’s (AFT) recent report Farms Under Threat (2020), more than 339,000 acres of farmland were converted in Virginia to urban and low density residential development between 2001 and 2016. Approximately four percent of the entire agricultural land in Virginia was lost to development. Furthermore, the report ranked Virginia in the Top 10 for acres of agricultural land developed per new person added to the state’s population. Between 1982 and 2012, Virginia sacrificed 0.18 acres of agricultural land per new resident.

An adequate supply of clean water and a critical mass of productive farmland throughout Virginia is essential to a resilient regional food system. No farms, no food.

The COVID-19 pandemic has brought to light the fragility and inequality of a nationwide food production and distribution system that has over a generation become further removed from consumers and increasingly consolidated. By disrupting the processing and delivery capacity of large national and international firms to provide key food staples, the COVID-19 pandemic has yielded local and regional food shortages, from pork, beef and poultry to fruits and vegetables. The pervasiveness of these disruptions and shortages became clear as Virginians visited our local groceries and found the shelves empty as the pandemic took hold.

The Commonwelth’s priority should be to ensure that the most vulnerable Virginians have access to food, whether their needs be chronic or acute. Here, the Supplemental Nutrition Assistance Program (SNAP) provides the first line of defense. But, the effectiveness of SNAP requires that those in need have access to a reliable food supply at retail, commercial and charitable food outlets. This critical access was potentially jeopardized as food supplies at regional food banks shrank and demand increased as the economic impact of COVID-19 took hold across communities in the Commonwealth.

The impact of COVID-19 related disruptions to the food supply was not limited to consumers. From dairy farmers to fruit and vegetable producers, disruptions in the food supply chain and contracts cancelled by end-users such as schools, restaurants, and others are leaving agricultural operators in Virginia without markets for their products. The prospect of farmers dumping milk, euthanizing livestock, and leaving crops in the field to rot is a real possibility, despite food shortages at our groceries and food banks. Moreover, with already small margins where 15 cents of every consumer dollar spent goes to the farmer, declining revenue from lost sales only exacerbates the economic challenges facing our farmers and the support businesses that rely on agriculture.

Actions that foster the ability of farmers to connect into and enhance local and regional agricultural economies and food systems should be a priority. Creating markets for Virginia’s agricultural products through regional distribution networks, expanding
small scale processing facilities, and expanding support for direct to consumer options such as farmers markets and community supported agriculture are examples of investments that can diversify food supply chains, reduce transportation costs, and grow rural economies and community resiliency - let alone the benefits that healthier and fresher produce afford our residents.

The Commonwealth has programs that can accelerate the pace of farmland conservation and diversification, including program funding available through the Virginia Department of Agriculture and Consumer Services (VDACS) Office of Farmland Preservation and the Virginia Land Conservation Foundation (VLCF). But, funding levels have never met the funding requirements under Virginia Code § 58.1-512 (see Healthy, Resilient Communities and Landscapes, p. 88). These programs conserve productive land and resources, but also support rural economies by providing farmers capital to reinvest and expand operations. Likewise, investment in the Virginia Cooperative Extension, Virginia Food Access Investment Fund, and Virginia Fresh Match Incentive Program help foster urban agriculture and other programs that bring equity, self-sufficiency, and long-term resiliency to many Virginians in low-access food deserts and in areas, urban or rural, with higher than average rates of poverty and chronic illness.

CONCLUSION

The Commonwealth can build more reliable and resilient food production and supply systems through targeted investments that (re)build local and regional food distribution networks, expand small scale food processing facilities, and conserve agricultural lands. Pursuing a more holistic and regionally based food supply chain offers diversification and augmentation to a national food distribution system that showed strain under the COVID-19 pandemic.

POLICY RECOMMENDATIONS

Fully fund Office of Farmland Preservation and the Virginia Farmland Preservation Fund.

Develop a comprehensive list of farms eligible for funding under the Conservation title of the federal Farm Bill (ACEP/ALE) to assist NRCS in competing for a larger share of $450 million per year.

Expand Agricultural and Forestry Industries Development Fund resources.

Fund Farm to School Programs by offsetting the cost of local foods for school systems.

Providing grant funds or tax incentives for small and or non USDA inspected processing facilities to expand or gain certifications.

Continue to fund and support Virginia's Finest and Virginia Grown through VDACS.

Continue to fund and support Virginia Food Access Investment Fund.

Continue to fund and support Virginia Fresh Match Incentive Program by providing a 1:1 match for SNAP funds.

Create a funding source to secure non-contaminated public and private green space for small acreage urban and suburban agriculture.

Provide grant funding to assist landowners in resolving heirs property.
INTRODUCTION
Virginia hosts a diverse array of historic, archaeological, and cultural resources - arguably the most significant of any 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. These resources are essential to what makes Virginia a great place to live, work, and visit, and protecting them also supports several of the Commonwealth’s largest industries, including agriculture and tourism. We also recognize that certain historic resources in Virginia preserve the memory of racial injustice, and we support efforts to update interpretation and signage in order to contextualize these resources as appropriate.

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 (VDHR).

These programs are essential in protecting historic resources and 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 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 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.

THESE PROGRAMS HELP TO MAKE OUR CITIES AND TOWNS MORE LIVABLE AND ECONOMICALLY VIBRANT THROUGH THE PROTECTION OF OPEN SPACE AND ENCOURAGEMENT OF HERITAGE TOURISM.

Since VBPF’s creation in 2006, $18.5 million in grants awarded by the state have helped to preserve nearly 9,000 acres of battlefield land worth more than $100 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, at Brandy Station and Cedar Mountain where the General Assembly has directed VDCR to study a potential future state park, 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.

Fully funding VLCF and VBPF is of critical importance to help protect hallowed ground from the wars of our nation’s first century, 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 Healthy, Resilient Communities and Landscapes, p. 88)

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 through an income tax credit equal to 25 percent of qualified rehabilitation expenditures. Virginia’s HRTC can be matched by federal rehabilitation tax credits, which provide a further credit equal to 20 percent of qualified rehabilitation expenditures.

Since 1997, the HRTC has been a catalytic community redevelopment and economic development tool for
the Commonwealth’s urban and rural communities – 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. Research studies by VCU’s Center of Urban and Regional Analysis\(^1\) and Baker Tilly,\(^2\) found that construction and related activities associated with historic tax credit projects generates $4.20 to $5.30 of economic impact for every $1.00 of tax credit. During the Great Recession of 2008, historic rehabilitation projects remained steady while new construction faltered.

Given the proven return on the Commonwealth’s investment from the HRTC, and economic impacts of the COVID-19 pandemic, we would encourage the state to consider temporarily increasing the percentage tax credit that can be claimed via the HRTC in order to help with the state’s economic recovery, and to give particular consideration to HRTC projects with the potential to benefit under-represented communities.

**SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT (NHPA)**

VDHR is responsible for administering Section 106 of the NHPA\(^3\) which requires federal agencies to take into account the effects of their undertakings on historic resources. VDHR is extremely challenged, given current staffing limits, in adequately administering this important law. Threats posed by projects such as the Mountain Valley and Atlantic Coast Pipelines, and the transmission line across the James River have stretched VDHR’s capacity. Increased funding for VDHR’s staffing capacity is important to enable the Department’s administration of Section 106 of the NHPA.

In addition, while we strongly supported and were encouraged by the passage of HB665 during the 2020 General Assembly session, which is intended to strengthen protections for historic and scenic resources with the potential to be impacted by proposed electric transmission line projects, it is important that the State Corporation Commission follow through on meaningfully implementing these enhanced review requirements for new projects.\(^4\)

**AFRICAN AMERICAN AND VIRGINIA INDIAN RESOURCES**

For far too long, African American and Virginia Indian historic resources have received inadequate protection. In recent years, the General Assembly passed several bills that help identify and fund the preservation of African American cemeteries, including the creation of an Historical African American Cemeteries and Graves Fund. Additionally, federal funding through the Underrepresented Community Grants is administered by VDHR to support projects to survey and nominate African American and Virginia Indian sites for inclusion in the National Register of Historic Places.\(^5\) Virginia’s 2020-2022 biennial budget included funding to support several important initiatives pertaining to African American historic resources, such as the Center for African American History and Culture at VUU, additional historical state highway markers, and digitizing the Virginia African American History trail. While there remains uncertainty about the state’s financial situation due to the COVID-19 pandemic, funding for these initiatives should be an important priority, particularly in light of COVID-19’s disproportionate impact on communities of color, and more generally the state should seek to continue its efforts to provide increased funding, recognition, and protection for historic African American and Virginia Indian resources across the Commonwealth.

**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. Accordingly, this year the General Assembly passed legislation to establish a state-level commission to begin planning and preparations for an inclusive commemoration in Virginia of our nation’s founding. This important anniversary provides an opportunity to showcase diverse stories from across the Commonwealth, including those of women and minority communities, and the General Assembly should provide initial funding to support the commission’s activities.

**POLICY RECOMMENDATIONS**

- **Secure funding for VLCF and VBPF at $16 million and $2 million, respectively.**
- **Strengthen the HRTC program to allow for at least a temporary increase in the percentage tax credit that can be claimed to help the state’s economic recovery.**
- **Ensure adequate and stable funding for DHR’s administration of Section 106 of the National Historic Preservation Act.**
- **Provide increased funding for the identification and protection of African American and Virginia Indian historic resources.**
- **Provide initial funding for Virginia’s American Revolution 250 Commission.**
AN AERIAL VIEW OF WEYANOKE, LOCATED ON THE JAMES RIVER IN CHARLES CITY COUNTY, VA. THE AREA IS NAMED FOR THE WEYANOKE (ALSO SPelled WEANOC), A TRIBE OF THE POWHATAN CONFEDERACY, WHICH HISTORICALLY INhabITED THE AREA. WEYANOKE WAS ALSO THE FIRST AFRICAN COMMUNITY IN NORTH AMERICA.

Image credit: Will Parson, Chesapeake Bay Program
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 optimize energy output while minimizing environmental impacts. Utility-scale solar, by its very nature, uses many acres of land, which—if poorly developed—can unnecessarily harm primarily agricultural and forested lands. While renewable energy projects must be used to meet the Commonwealth’s energy demand going forward, Virginia’s executive branch, General Assembly and regulators should strive to minimize the environmental impacts while maximizing the benefits of solar.

BACKGROUND
A utility-scale solar facility is one that generates power and feeds it into the grid, supplying an electric utility with clean power. Recently Virginia has experienced an increase in both the number and size of utility-scale facilities. Many attribute this increase to the demands of incoming data centers for renewable energy and the decreasing cost of solar panels. On average, utility-scale solar requires roughly seven to ten acres per megawatt produced. This can result in significant land use. In fact, in the spring of 2019, the Spotsylvania Board of Supervisors approved the largest solar energy facility on the east coast, consuming over 3,500 acres of forested land in Virginia and will produce 500 megawatts (MW) of power.

The recently passed Virginia Clean Economy Act declared 16,100 MW of solar and on-shore wind to be in the public interest. It is expected that utility-scale solar facilities will produce the majority of that new generation, and it will happen quickly.

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

Virginia’s policymakers should implement and promote best practices for utility-scale solar, including measures related to:

• **Proper Site Selection.** Prioritize and incentivize post-mining land, landfills, brownfields, and other former industrial or commercial sites. Focusing the initial round of development on these sites avoids unnecessary impacts to our forests and agricultural lands, whose highest and best use is to remain green, either for traditional uses or specifically to address climate change. It also ensures that the economic benefits of solar reach communities bearing the environmental and health burdens of these former industrial or commercial sites and helps to diversify the local economy.

• **Minimize Anticipatory Clearing of Forested Lands.** Anticipatory clearing occurs when a landowner clears the forested land in anticipation of submitting an application for a solar project. The clearing of forested land should occur after the application is submitted and reviewed by the appropriate state agencies so that environmental impacts are fully addressed in the permitting process.

• **Local Authority.** Assist localities in developing consistent 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.** Solar developers often include reclamation plans in their operations and maintenance budgets, but this should be required to ensure that decommissioning is done appropriately. In some cases solar panels can be simply replaced, possibly eliminating the need for site reclamation.

• **Minimize Wildlife Habitat Disturbance and Protect Ecology.** Minimize the impacts on habitat disturbance and the movement of wildlife. Ensure
that solar developers are communicating early and often with federal and state wildlife agencies. **Sustainable Grounds Keeping.** Projects should include recognized best management practices. For example, planting native grasses and wildflowers in low maintenance areas can improve erosion control, pesticide avoidance, stormwater infiltration, wildlife habitat, and reduce long-term maintenance costs and emissions.

**CONCLUSION**

Now that Virginia has set the wheels in motion for increased use of utility-scale solar, it is important that policymakers lay 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, grants, rebates, or Renewable Energy Credit-adders.

**Break down barriers to distributed solar so** that it can become a viable option in Virginia (see *Bringing More Small-Scale Solar to Communities*, p. 58)

**Amend the Virginia Code (§10.1-1197.5-1197.11)** to limit the potential for anticipatory clearing of forested lands by discouraging solar applications for sites in which 10 acres or greater of tree clearing has taken place within two years prior to the submission of any solar application to the Department of Environmental Quality.

**Direct Department of Environmental Quality to** develop a list of state-supported best practices, including the utilization of community benefits agreements, and incentives and work with developers and 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 stakeholders such as the Department of Mines Minerals and Energy, localities, industry, non-governmental organizations 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 on brownfields, including recommendations to incentivize solar development on these lands and to maximize local benefits for impacted communities.
ENSURING THE PUBLIC BENEFITS OF CONSERVATION EASEMENTS
Dan Holmes // Piedmont Environmental Council | Nikki Rovner // The Nature Conservancy

INTRODUCTION
Virginia’s conservation easement policies are the envy of many other states. The Virginia Outdoors Foundation, created by the General Assembly in 1966, is one of the country’s largest land trusts, protecting over 850,000 acres. Virginia also has a strong corps of private land trusts working throughout the Commonwealth and important easement programs within the Departments of Forestry and Conservation & Recreation. These programs are underpinned by two foundational laws: the Virginia Conservation Easement Act and the Open-Space Land Act.

As Virginia’s easement programs mature, they face a growing challenge of ensuring adherence to easement provisions after the underlying land changes hands. It is critical that conservation easements are interpreted in a way that reflects the donors’ intent to protect their land in perpetuity and protects the public benefits conferred.

BACKGROUND
Over the last 20 years, the Commonwealth has seen a significant increase in conserved lands, much of which can be attributed to the establishment of the Land Preservation Tax Credit and our conservation grant programs. These programs have resulted in Virginia making notable progress in meeting our obligations under the Chesapeake Bay Agreement, water quality in general, preservation of agricultural and forested lands and in protecting scenic and historic resources. Since the introduction of these tools, we have seen more than a fivefold increase in conservation in the last 21 years as compared to the rate of the 34 years after introduction of the Open Space Lands Act.

When a person newly acquires land that has been placed under a conservation easement, it is critical that they understand the conservation values the easement seeks to protect and how that affects the land uses that are and are not permitted. Land trusts bear the primary responsibility for educating landowners on these provisions, and must make a priority of maintaining productive relationships with landowners. But disputes will inevitably arise in some cases, and when they do it is essential that courts interpret easements to effectuate the intent of the easement donor and the public benefits conferred.

In recent years, there have been several legal cases in which there have been disputes between landowners and conservation easement holders regarding the interpretation of the easements and the protection of resources on the individual properties.

![Image](https://via.placeholder.com/150)

**IT IS CRITICAL THAT CONSERVATION EASEMENTS ARE INTERPRETED IN A WAY THAT REFLECTS THE DONORS’ INTENT TO PROTECT THEIR LAND IN PERPETUITY AND PROTECTS THE PUBLIC BENEFITS CONFERRED.**

The Virginia Supreme Court in the White Cloud (2016) case ruled against the enforcement of the easement terms, stating that restrictions in the use of real property should be construed narrowly. The Court believed that the General Assembly had not spoken to the issue of how to resolve ambiguities in conservation easements. The law is clear, however, with regard to the purpose of the restrictions in a conservation easement, which is to ensure continuation of the public benefits of the conservation values in the lands in perpetuity. It is now time for the General Assembly to make it clear that ambiguities should be resolved in favor of protecting those conservation values.

CONCLUSION
Virginia’s strong conservation policies have led to unprecedented success in the widespread use of conservation easements – most donated as charitable gifts to the Commonwealth or a nonprofit conservation organization. Ensuring that these gifts will persist for the benefit of future generations requires an explicit policy regarding judicial interpretation of easements.

**POLICY RECOMMENDATION**

The General Assembly should enact legislation clarifying that any court interpreting ambiguity in a conservation easement should do so in a way that protects the conservation values enumerated in the easement.
SUNSET OVER FARMLAND IN GREENE COUNTY, VA.

Image credit: Harlow Chandler
HEALTHY, RESILIENT COMMUNITIES AND LANDSCAPES

EXPLORING DEDICATED FUNDING FOR CONSERVATION


3 Id.


11 Fiscal Analytics, supra note 1.


15 Id.


18 Id.
PROTECTING CULTURAL AND HISTORIC RESOURCES

MAXIMIZING BENEFITS AND MINIMIZING IMPACTS OF UTILITY SCALE SOLAR
2 Small solar energy projects are described in 9 Va. Admin. Code §15-60-130 as those with either a rated capacity greater than 500 kilowatts and less than or equal to five megawatts or a disturbance zone greater than two acres and less than or equal to 10 acres.

ENSURING THE PUBLIC BENEFITS OF CONSERVATION EASEMENTS
COVERED SUMMIT - THE HIGHEST POINT IN VIRGINIA ON MOUNT ROGERS IN JEFFERSON NATIONAL FOREST.

Image credit: Izabela Clarke
Last year saw the end of a two-decade battle to create a successful management plan for Virginia’s menhaden. However, there is still much to be done to preserve and enhance our wildlife habitats and fisheries. As population growth continues to expand into new areas of the state, we must ensure that successful wildlife corridor stewardship through the Wildlife Corridor Action Plan protects the health and safety of our aquatic and terrestrial species. We must also continue to meet our Chesapeake Bay cleanup goals by rebuilding its oyster population.
IMPROVING SAFETY FOR WILDLIFE AND PEOPLE THROUGH WILDLIFE CORRIDOR STEWARDSHIP
Virginia made significant steps in 2020 to make its fragmented landscape safer for wildlife and people through bipartisan support of the Wildlife Corridor Action Plan. Virginia should continue this effort by improving data collection, planning, training, and incentive programs to ensure the health and safety of the Commonwealth’s aquatic and terrestrial species and Virginians.

Misty Boos // Wild Virginia // misty@wildvirginia.org
Jenny Oren // Wildlands Network // jenny@wildlandsnetwork.org
Celia Vuocolo // Piedmont Environmental Council // cvuocolo@pecva.org

FINE-TUNING MANAGEMENT OF VIRGINIA’S OYSTER RESOURCES
The Commonwealth has made a significant investment in successful efforts to rebuild the Bay’s oyster population. These efforts have not only supported Virginia’s wild oyster harvest but also Virginia’s efforts to meet the oyster restoration goals of the Chesapeake Bay Watershed Agreement. In addition, these investments have provided multiple economic and ecological benefits including more robust oyster harvests, cleaner water, and more habitat for economically important species such as blue crabs and striped bass.

Chris Moore // Chesapeake Bay Foundation // cmoore@cbf.org
Zachary Sheldon // The Nature Conservancy // zachary.sheldon@tnc.org
THE POSTED BOUNDARY OF A WILDLIFE SANCTUARY IN GRAYSON HIGHLANDS STATE PARK.

Image credit: Nissa Dean
INTRODUCTION
Virginia’s landscape is increasingly fragmented, impacting the health of the Commonwealth’s diverse terrestrial and aquatic ecosystems. Virginia has the third largest state-maintained highway system in the country. Our roads alone cover 70,105 miles and cut Virginia’s landscape into pieces. Wildlife corridors, or connections between patches of habitat, protect public health, reduce wildlife-vehicle collisions, and allow wildlife to move to more suitable habitats making them more resilient in the face of a changing climate. Virginia’s General Assembly took a great step forward in 2020 with the Wildlife Corridor Action Plan. While this plan will improve the identification of wildlife corridors in Virginia and develop a strategy to protect them, there remain connectivity issues that require additional focus.

BACKGROUND
As new patterns of species dispersal emerge, ranges shift, and seasonal movement and migration vary due to changes in climate and land use, animals cross roads in order to adapt. The Virginia Department of Transportation (VDOT) currently uses police report data for project planning and safety evaluations; however, police-reported deer-vehicle collisions represent only 9.4 percent of insurance claims. We need a better understanding of the magnitude and the locations of wildlife-vehicle incidents in order to make good planning decisions.

Like terrestrial species, aquatic organisms need to move safely and efficiently in order to access stream habitat and resources during mating seasons, times of drought, and for genetic dispersal. Road-stream crossings can impede the movement of aquatic species. Problems with passage occur when a stream is fragmented by culverts or low-water fords meant to move cars, but not aquatic life. For example, the Eastern brook trout, Virginia’s official state freshwater fish, can only jump four inches maximum in order to swim through a pipe and are often trapped on one side of a crossing. Flooding, caused by these undersized culverts also damages roadways, erodes streambanks, and washes populations of fish downstream. This is a significant problem, because there are 21,173 culvert structures in Virginia excluding structures owned or managed at the federal level as well as numerous privately-owned structures. One assessment of road-stream crossings in blue ridge headwater streams found that 59 percent of the road crossings assessed were impeding fish movement, and 58 percent of crossings were owned by VDOT. There is a clear need for additional assessments throughout the state. There have been a handful of regional initiatives in Virginia that surveyed road crossings for their impacts to aquatic life, but there has been no statewide effort.

WILDLIFE CORRIDORS, OR CONNECTIONS BETWEEN PATCHES OF HABITAT, PROTECT PUBLIC HEALTH, REDUCE WILDLIFE-VEHICLE COLLISIONS, AND ALLOW WILDLIFE TO MOVE TO MORE SUITABLE HABITATS MAKING THEM MORE RESILIENT IN THE FACE OF A CHANGING CLIMATE.

Wildlife also do not know where one government jurisdiction ends and another begins. Integrating planning for wildlife corridors into state planning documents can help ensure that corridors are protected across jurisdictions. For example, vernal pools are sensitive wetlands that are used by some of Virginia’s most vulnerable amphibian species and provide invaluable benefits to habitat connectivity. Currently, 100-foot vernal pool buffers are not enforced systematically by the US Forest Service (USFS) or the Virginia Department of Forestry (DOF) in forest management applications. Without adequately protecting this “amphibian life zone”, land disturbance may occur right up to the edge of these wetlands and can cause chronic degradation and loss of biodiversity for these valuable systems. Lastly, about 83 percent of the land in Virginia is in private hands, meaning that landowners and Virginians must play a significant role in helping protect both aquatic and terrestrial wildlife corridors.

CONCLUSION
Virginia made significant steps in 2020 to make its fragmented landscape safer for wildlife and people through bipartisan support of the Wildlife Corridor Action Plan. Virginia should continue this effort by improving data collection, planning, training, and incentive programs to ensure the health and safety of the Commonwealth’s aquatic and terrestrial species and Virginians.
POLICY RECOMMENDATIONS

Implement the Wildlife Corridor Action Plan Priority Project List and pursue public-private partnerships for implementation and monitoring.

Require protection of wildlife corridors and integrate identified WCAP corridors into community, county, and state management plans.

Provide incentives for private landowners to protect and restore wildlife corridors.

Require VDOT to standardize methodology for collecting, analyzing, and publicly reporting wildlife collision and carcass data.

Provide resources to the Department of Wildlife Resources (DWR), nonprofits, and federal agencies to help launch a coordinated statewide effort to assess barriers to aquatic connectivity, and allow the survey data to be publicly accessible (example: using the NAACC Stream Continuity Database).

Require VDOT to use the aforementioned database to determine the Aquatic Organism Passage (AOP) status of a road-stream crossing prior to replacement/repair and then use Best Management Practices to enhance connectivity for these and all road-stream crossing projects.

Require enforcement of 100-foot vernal pool buffers in state forest management applications.
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 2020 legislative session the General Assembly authorized a historic investment in efforts to improve the state’s 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 habitat.

BACKGROUND
The Chesapeake (meaning “great shellfish Bay” in Algonquin) Bay harbored historical oyster reefs so expansive that they posed navigation hazards to explorers and watermen. With the ability of each adult oyster to filter up to 50 gallons of water a day, they are a key ingredient to removing pollution and increasing water quality in the Bay and its tributaries. There was a time when the oyster population in the Bay was so vast, the entire 19 trillion gallons of water could be filtered in less than a week, currently our current population would take 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.1

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 Rivers in order to meet the CBP goal of restoring five tributary rivers by 2025. Due to new resource availability, there is currently a focus on the East Branch of the Elizabeth River.

WITH THE ABILITY OF EACH ADULT OYSTER TO FILTER UP TO 50 GALLONS OF WATER A DAY, OYSTERS ARE A KEY INGREDIENT TO REMOVING POLLUTION AND INCREASING WATER QUALITY IN THE BAY AND ITS TRIBUTARIES.

With investments in oyster restoration and replenishment increasing there is a need for additional insight into the distribution and size of the state’s oyster population, and the ability to better gauge restoration success. This will lead to more effective management of the Commonwealth’s increasingly valuable oyster resource and allow oyster restoration practitioners to better focus their efforts as we approach upcoming deadlines for oyster restoration in Virginia’s portion of the Chesapeake Bay included as part of the Chesapeake Bay Watershed Agreement.

CONCLUSION
The Commonwealth has made a significant investment in successful efforts to rebuild the Bay’s oyster population. These efforts have not only supported Virginia’s wild oyster harvest but also Virginia’s efforts to meet the oyster restoration goals of the Chesapeake Bay Watershed Agreement. In addition, these investments have provided multiple economic and ecological benefits including more robust oyster harvests, cleaner water, and more habitat for economically important species such as blue crabs and striped bass.
In order to better gauge restoration success and ensure both restoration and fishery management decisions are made with the best available information the State budget should include funding to design and implement a stock assessment of the Commonwealth’s oyster population, while also continuing to invest in rebuilding oyster populations.
ENDNOTES

IMPROVING SAFETY FOR WILDLIFE AND PEOPLE THROUGH WILDLIFE CORRIDOR STEWARDSHIP


EXPLORING DEDICATED FUNDING FOR CONSERVATION

PELICANS AT MESSICK POINT ON MILL CREED IN HAMPTON ROADS, VA.

Image credit: Randie Trestrail
FALL FROST - FROST IN TREES NEAR BIG CHERRY RESERVOIR, IN BIG STONE GAP, VA.

Image credit: Bill Harris
ENSURING AN EQUITABLE AND INCLUSIVE GOVERNMENT

All of the conservation efforts detailed in this publication cannot be realized without an equitable and inclusive government. Our work cannot be considered a success unless our policies and programs represent and benefit all Virginians and do not cause disproportionate harm to low-income communities and communities of color. In order to accomplish this, we need greater regulatory oversight and robust public participation. Our energy system must be more democratic and fairly regulated. We must also ensure that we are building stewards of nature through equitable and inclusive environmental education.

EXECUTIVE SUMMARIES AND CONTACT INFORMATION

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WORKING TOWARD ENVIRONMENTAL JUSTICE
Virginia’s environmental justice work is not limited to one particular community, pollution site, or infrastructure project. It involves 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 toxic pollution exposure for all, among other concerns, to allow all communities to thrive.

Chelsea Barnes // Appalachian Voices // chelsea@appvoices.org
Kendyl Crawford // Virginia Interfaith Power and Light // kcrawford@vaipl.org
Tyneshia Griffin // New Virginia Majority // tgriffin@newvirginiamajority.org
Kim Jemaine // Chesapeake Climate Action Network // kim@chesapeakeclimate.org
Queen Shabazz // Virginia Environmental Justice Collaborative // qshabazz@vaejc.org

ENHANCING EQUITY AND PARTICIPATION IN REGULATORY OVERSIGHT
Virginia’s public involvement procedures are unreasonably siloed and inaccessible; far from equitable or even useful for professionals and the public alike. Many local governments have continued to make decisions on non-essential matters during the COVID-19 emergency, despite the countless challenges of involving the public during a pandemic. Without legislative fixes, communities will continue to be left in the dark about local projects.

Dan Holmes // Piedmont Environmental Council // dholmes@pecva.org
Kim Jemaine // Virginia League of Conservation Voters // kjemaine@valcv.org
Katlyn Schmitt // Center for Progressive Reform // kschmitt@progressivereform.org
ENSURING ROBUST PUBLIC PARTICIPATION THROUGH VIRGINIA’S REGULATORY BOARDS

In view of the important environmental protection role served by Virginia’s independent regulatory boards, continued preservation and consistent enhancement of the current system, as indicated here, is vital to ensure all Virginians can enjoy, steward, and benefit from the environment and natural resources.

Gustavo Angeles // Sierra Club Virginia Chapter // gustavo.angeles@sierraclub.org
Connor Kish // Sierra Club Virginia Chapter // connor.kish@sierraclub.org
Margaret L. (Peggy) Sanner // Chesapeake Bay Foundation // psanner@cbf.org

CULTIVATING ENERGY DEMOCRACY IN VIRGINIA

An energy system that serves the public interest is one that protects the environment while also promoting economic fairness and social justice. To achieve energy democracy, Virginia must pursue policies that expand community influence over electricity sources, the siting of energy resources, and the costs and benefits stemming from those decisions.

Peter Anderson // Appalachian Voices // peter@appvoices.org

REFORMING ELECTRIC UTILITY REGULATION

The State Corporation Commission must regain its full ratemaking authority to ensure that customers never pay more than they should for electricity.

Peter Anderson // Appalachian Voices // peter@appvoices.org
Will Cleveland // Southern Environmental Law Center // wcleveland@selcva.org
Dan Holmes // Piedmont Environmental Council // dholmes@pecva.org
Lizzie Hylton // Clean Virginia // lizzie@cleanvirginia.org

BUILDING STEWARDS NATURALLY THROUGH EQUITABLE AND INCLUSIVE ENVIRONMENTAL EDUCATION

Equitable and inclusive environmental education is necessary for an environmentally literate population ready to tackle the global challenges ahead. Virginia needs a coordinated, multi-faceted effort to accomplish this goal, led by state leaders in education and natural resources. Strong state funding is also needed to fill funding gaps and provide every student across Virginia, regardless of race or income, a meaningful environmental education.

Daria B. Christian // Friends of the Rappahannock // daria.christian@riverfriends.org
Anna Killius // James River Association // akillius@thejamesriver.org
Helen W. Kuhns // Lynnhaven River Now // helen@lrnow.org
INTRODUCTION
Virginia made environmental justice progress, unprecedented nationally, during the 2020 legislative session. Yet, vulnerable populations continue to be at increased risk for climate change impacts, siting of toxic fossil fuel facilities, and pollution exposure. The Department of Environmental Quality’s adoption of environmental justice directives, codification of the state’s Environmental Justice Council, and the passage of the Environmental Justice Act are key steps towards achieving environmental justice in Virginia. The statewide clean energy economy transition, environmental racism, and the systemic inequalities heightened by the COVID-19 pandemic still require steadfast policy development to protect and secure better livelihoods for all Virginians.

BACKGROUND
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, while the Clinton Administration released Executive Order 12898 to require federal agencies to assess adverse impacts of their actions, policies, and projects on environmental justice communities.1 In 2020, with the passage of the Virginia Environmental Justice Act, environmental justice now has greater meaning in Virginia, being codified in law as “the fair treatment and meaningful involvement of every person, regardless of race, color, national origin, income, faith, or disability, regarding the development, implementation, or enforcement of any environmental law, regulation, or policy.”2 Important federally recognized benchmarks of environmental justice, fair treatment and meaningful involvement, were also defined in law.3 The legislature officially declared it the policy of the commonwealth to ensure environmental justice is achieved and maintained statewide. But, more progress requires a robust process for integrating environmental justice throughout state agencies to ensure impacted communities are properly identified in permitting processes and have mandated influence over infrastructure siting and permitting decisions.

MORE PROGRESS REQUIRES A ROBUST PROCESS FOR INTEGRATING ENVIRONMENTAL JUSTICE THROUGHOUT STATE AGENCIES TO ENSURE IMPACTED COMMUNITIES ARE PROPERLY IDENTIFIED IN PERMITTING PROCESSES AND HAVE MANDATED INFLUENCE OVER INFRASTRUCTURE SITING AND PERMITTING DECISIONS.

Furthermore, with the passage of the Virginia Clean Economy Act, state agencies and the Council on Environmental Justice are empowered to review the impact of the clean energy transition on vulnerable communities and enforce the policy of the Commonwealth to prioritize disadvantaged communities when considering new job training programs and renewable energy projects. These provisions are vital, as communities and workers with fossil-fuel reliant livelihoods will face economic hardship through this transition.

THERE CAN BE NO ENVIRONMENTAL JUSTICE WITHOUT RACIAL JUSTICE
Nationally, police brutality has led to violent murders and physical attacks in Black communities. These acts of violence, connected to racial prejudice, are not tangential to our shared environmental agenda. Policies and practices designed to eliminate institutionalized racism and protect all Virginians’ right to live and safely access and enjoy natural environments without the burden of racial prejudice must be incorporated into Virginia’s permitting processes, environmental regulations, conservation programs, state and local parks, and watershed and land protections. As state agencies begin to view actions through an environmental justice lens, so too their actions must be viewed as a concerted effort to end racial inequities in the development, implementation, and oversight of public policy.

SOUTHWEST VIRGINIA
The residents of Southwest Virginia live with the impacts of coal and gas extraction, 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. The coal industry has abandoned these communities, leaving a hazardous mess of unreclaimed mine...
sites, contaminated soils, polluted waters, and aging housing. Additionally, fossil-fuel power plants in the region will now be shut down in the coming decades, putting more communities at risk. These communities have borne incomprehensible burdens in order to provide fuel to power this nation. Justice requires that we address these legacy impacts and compensate burdened communities. Establishing a Just Transition Office at the state-level to strategically guide and support a community-led and centered transition is one of the first steps to effectively create immediate jobs, attract new residents and businesses, invest in water infrastructure and housing for existing residents, and clean up mine and power plant sites, water, and brownfields.

CHARLES CITY AND CHESAPEAKE
The proposed Header Improvement Project is a natural gas proposal that would build three intrastate pipelines and three new compressor stations in multiple communities of color that are already in proximity to federally recognized superfund sites.

The Gidley Compressor station in the city of Chesapeake is proposed for the middle of a dense neighborhood composed of 65 percent people of color — much higher than the state’s average of 37.4 percent. The neighborhood is also made up of a disproportionately high level of low-income residents — 30.8 percent compared to the state’s average of 25.2 percent. Additionally, the project is slated to feed into the proposed C4GT station, which would be located about a mile from the proposed massive Chickahominy Power Station. Both power plants would be located in Charles City County, another majority-minority community — about 55 percent people of color.

HAMPTON ROADS
Increased flooding related to a changing climate regularly impacts coastal 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 investment in critical infrastructure improvements such as a comprehensive transportation system, flood management control, displacement protections, and climate resilient housing building codes make these residents vulnerable during recurrent storm and flooding events.

CONCLUSION
Virginia’s environmental justice work is not limited to one particular community, pollution site, or infrastructure project. It involves 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 toxic pollution exposure for all, among other concerns, to allow all communities to thrive.
POLICY RECOMMENDATIONS

Pursue policy reform on environmental justice including:

Formally recognize racism as a public health crisis in the Commonwealth.

Amend the Virginia Environmental Justice Act with state agencies directives:

- Require state agencies to develop agency-specific environmental justice policies,
- Require state agencies to determine whether any proposed actions or funding decisions under agency duties are likely to adversely impact environmental justice communities; and,
- Require state agencies to mitigate or eliminate adverse impacts in any action/no-action decision.

Appropriate $100,000 for operational funding to the Environmental Justice Council — this funding is essential for the council to cover costs associated with securing expert consultation, independent studies, facilitators, and offering grants to communities to identify their environmental justice concerns and priorities.

Create an Environmental Justice Office housed in the most appropriate state agency and appoint an environmental justice community ombudsperson.

Incorporate a review of environmental justice impacts in state environmental impact reports for new major projects, such as fossil-fuel infrastructure.

Weigh health impacts and environmental justice as a factor in all siting, rule-making, and permitting decisions.

Establish additional environmental justice staff within the Department of Environmental Quality, Department of Conservation and Recreation, the Virginia Department of Health, and Virginia Department of Agriculture and Consumer Services.

Provide environmental justice training for staff across state agencies.

Require an environmental justice analysis for new energy, industrial, infrastructure, and agricultural (i.e. CAFOs, AFOs) projects.

Further a just transition for fossil-fuel-dependent localities at the state-level by:

Establish a Virginia Just Transition Office coordinated with the Environmental Justice Council that relies on community-based and expert-informed planning processes for individual communities and for state legislation and regulations and appropriate at least $100,000 for its administration (see Building an Equitable Clean Energy Economy for Communities and Workers, p. 44).

Develop equitable strategies for maintaining community safety and protection:

Prioritize approval of community safety policy recommendations that include:

- Tracking and addressing policing in state and local parks and along public trails and sidewalks;
- Preventing biased criminalization of certain pedestrians and people using these facilities; and,
- Increasing the economic accessibility and cultural inclusiveness of state and local park facilities.

Create and appropriate funding for a Racial Justice Council to study and outline potential proposals for providing reparations to African Americans as a part of a greater strategy to remedy historical and contemporary racial injustices.
SUNRISE ON COW CREEK, VIRGINIA BEACH VA.
Image credit: Erik Moore
INTRODUCTION
During the past two decades, Virginia has taken some important steps to enhance community involvement and public engagement in government decision making, such as the passage of the Virginia Environmental Justice Act. The Commonwealth created the state Regulatory Town Hall Website, which aims to facilitate public communication and participation in proposed regulatory actions by Virginia’s regulatory agencies via an online notice and comment portal. Yet, the majority of proposed environmental and natural resource actions, including necessary information and resources for impacted communities to provide adequate public comments, are still missing from the website. On top of this, the landscape for public participation in government decision making remains challenging, if not impossible, to navigate. Compounding these problems, there are deficiencies in the state code allowing local governments to proceed on non-essential matters during a declared emergency. All of this calls into question whether meaningful public participation in environmental regulatory programs exists in Virginia.

BACKGROUND
Virginia’s regulatory system is currently too disorganized and confusing for the public to fully participate, nor is there a strong focus on engaging communities directly impacted by certain actions. Many of the Commonwealth’s major pollution permitting programs, for instance, follow different public notice-and-comment procedures. Likewise, the rules that dictate public involvement do not clearly state whether, and how, communities can request public hearings or extend comment periods; in many cases, agencies are not required to host public hearings, even when requested. Many times, the public misses the chance to participate because they are unable to find the notice, determine how long they have to comment, see when the comment period started, determine whether they can extend a comment period, or request or participate in a public hearing. Even when communities are able to navigate and participate in the complex process, often without all the relevant information, it is not clear that their input is meaningfully considered or given any weight.

Similarly, sometimes notice is posted in a newspaper that does not have an accessible online presence for public notices. In one instance, community members in Hanover County almost missed the opportunity to provide input on a draft water protection permit for a major proposed industrial facility in their area because notice was posted in a different, less local, newspaper. This raises issues of equity for those who may not have access or a subscription to a single newspaper, let alone multiple papers or familiarity on how to navigate the online public notice section of larger papers.

At the local government level, actions like the Governor’s stay-at-home executive orders under COVID-19 forced localities to answer some hard questions about how to move forward on matters like permitting without jeopardizing equitable public participation. An Attorney General Opinion tried to address those questions by stressing the importance of sticking to matters that were essential (i.e. related to the emergency & budget adoptions). But the opinion recognized a glaring loophole: It acknowledged a section in the code (Va. Code sec. 15.2-1413) that allows localities, through the passage of a local continuance ordinance, to pursue non-essential decisions. Localities have taken advantage of this to approve non-essential matters, like permitting new or expanded facilities, at a time when the public was, at best, distracted and, at worst, unable to participate in the process. The fix would be relatively simple: prevent localities from moving forward on decisions not related to the declared emergency, for as long as that emergency lasts.

Likewise, the Virginia Regulatory Town Hall Website is ready-made to be a clearinghouse for public notices, relevant records, and public comment submissions. But it currently only includes information about new, amended, or repealed regulations; petitions for rulemaking; legislative mandates; periodic reviews; and general notices. In terms of Virginia’s pollution permitting programs, what’s missing from these notices are draft individual permits available for public comment, applications for general permit coverage,
and enforcement-related consent decrees. This information is not only essential for members of the public who want to comment, but it allows people to adequately understand the proposed facilities in their communities that may release hazardous pollution. The state should broaden the website -- not to replace the state’s current patchwork of public notice-and-comment requirements -- but to improve online access and participation in regulatory decision processes.

**CONCLUSION**

Virginia’s public involvement procedures are unreasonably siloed and inaccessible; far from equitable or even useful for professionals and the public alike. Many local governments have continued to make decisions on non-essential matters during the COVID-19 emergency, despite the countless challenges of involving the public during a pandemic. Without legislative fixes, communities will continue to be left in the dark about local projects.

**POLICY RECOMMENDATIONS**

- **Expand Virginia’s Regulatory Town Hall**
  Website to allow notice and comment for all relevant proposed permits, notices of intent, and enforcement actions. Additionally, the website should house any relevant documentation to ensure the public has an opportunity to provide informed comments.

- **Require relevant state agencies to update their public participation regulations**
  to clearly and uniformly dictate the length of public comment periods and the steps to extend the public comment process, as well as to request a hearing.

- **Require agencies and localities to develop participation alternatives**
  for affected communities that lack reliable broadband access or may not have access to a newspaper.

- **Address the deficiencies found in Va. Code sec. 15.2-1413**
  limiting decisions made under a continuity of government ordinance to those that are immediate and necessary (i.e. those related to the declared emergency) to create some clarity and consistency for how governmental matters proceed in unprecedented times.

- **Create a public outreach program to**
  underrepresented communities and impacted communities to ensure they are meaningfully engaged earlier on in the approval process. This should include a provision to (a) fund the expenses of those who serve on state committees, commissions and panels, (b) hold meetings convenient via rail and public transit, and (c) work to expand broadband access in rural areas and frontline communities.
INTRODUCTION
From the Piedmont’s rolling hills to the towering forests of the western mountains, from the shores of the Chesapeake Bay to the waters of the Clinch and Jackson Rivers, 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, Virginia’s regulatory boards uniquely ensure that Virginia residents – the people – have a meaningful voice in shaping the rules designed to protect our priceless air, water, lands and communities.

Comprised of non-expert, uncompensated volunteers, members of Virginia’s regulatory boards work hard, often thanklessly, to uphold the law and engage the public in protecting the environment. As with many aspects of governance, there is room for improvement in the areas of transparency, independence, public engagement and representation from frontline communities. Yet, the boards’ inherent value as Virginians entrusted with key decisions about the Commonwealth’s natural resources, and their role as independent reviewers of what is best for these resources and all Virginians, cannot be overstated. It is, therefore, essential that Virginia policymakers refrain from interfering in the boards’ independence, scope or authority.

BACKGROUND
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 maintaining a 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.

Regulatory board members are not necessarily experts in environmental issues (agency staff develops technical information and advises where necessary); instead, they bring 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. They are appointed by the governor for specific, staggered terms, such that each governor will have some, but never complete, control over board composition. Notably, board members are not state employees and should be free to exercise independent judgment without constraint or direction from elected officials. Promoting independent decision-making consistent with law is crucial; the role of the agency and the Office of the Attorney General in Board deliberations should be limited to identifying the range of options available to the Board. A primary consideration of the Board should be the perspectives and concerns of impacted communities.

Proceedings before regulatory boards are also ideally 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 so that the public may attend to learn about matters to be decided. The general public may engage in this work by submitting written comments and testifying to the board on specific agenda items. Virginians are also empowered to bring new perspectives and environmental matters to the board’s attention. The regulatory boards’ procedures for soliciting and considering public comment should not be constrained; if anything, they could be enhanced through greater language accessibility, the addition of an environmental justice community representative, and more accessible public locations for meetings. When Virginians are truly involved, government decisions have greater legitimacy.

A PRIMARY CONSIDERATION OF THE BOARDS SHOULD BE THE PERSPECTIVES AND CONCERNS OF IMPACTED COMMUNITIES.

Public engagement with the regulatory boards ensures a measure of transparent accountability for environmental decisions. Members of the public ask questions of the decision makers and deserve answers, especially for decisions that directly impact their own communities. Ideally, these opportunities help to build the general public’s understanding of the issues, recognition that important perspectives are being taken into account, and trust in the decision making process.
CONCLUSION
In view of the important environmental protection role served by Virginia’s independent regulatory boards, continued preservation and consistent enhancement of the current system, as indicated here, is vital to ensure all Virginians can enjoy, steward, and benefit from the environment and natural resources.

<table>
<thead>
<tr>
<th>POLICY RECOMMENDATIONS</th>
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<tr>
<td><strong>Refrain from legislating or authorizing</strong> any change to the current regulatory board framework that would diminish the boards’ ability to make independent, publicly informed decisions consistent with state law and the duty of protecting the Commonwealth’s invaluable natural resources.</td>
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<td><strong>Consider the addition of an environmental justice representative</strong> to serve on existing boards and to attend and participate in all public regulatory meetings and hearings.</td>
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<tr>
<td><strong>Refrain from enacting legislation 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.</strong></td>
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<td><strong>Require public comments to be made available in their entirety to Board members within a reasonable time in advance of the Board meetings when the issue addressed in the comments will be considered.</strong></td>
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<tr>
<td><strong>Require for all air and water permit applications</strong> that are subject to Board review and approval, that they be posted in their entirety, in both English and Spanish, with minimal use of acronyms, on the DEQ website and Regulatory Townhall website sufficiently in advance of Board consideration to allow for public comment, and to improve public participation and to provide more clarity to the public on the issues that are relevant for Board consideration (see Enhancing Equity and Participation in Regulatory Oversight, p. 122).</td>
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<tr>
<td><strong>Require public regulatory meetings to be held on public, or state governmental property, rather than private property, to promote access to the meeting; prohibit police presence at public hearings, meetings and informational sessions; provide Spanish and ASL translations; consider opening additional opportunities for public engagement beyond meetings, hearings and comment submission.</strong></td>
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A GROUP TURNS THEIR BACKS IN PROTEST AT A VIRGINIA WATER BOARD MEETING.
Image credit: Kenny Fletcher
INTRODUCTION
Energy – especially electricity – is essential for just about everything we do in modern life. Whether it is applying for a job, doing laundry, cooling our homes in the summer, or charging our phones, electric energy is a public necessity; therefore, Virginia’s energy policies should be grounded in the public interest.

Energy democracy is a framework through which ratepayers and policymakers alike can view the energy system we have and analyze the steps required to transform it into the energy system we need.

BACKGROUND
Historically, the use and development of energy resources has resulted in environmental degradation, economic disparity, centralization of power, and social injustice. But new energy technologies combined with informed and transparent decision-making can center a new energy system in our shared values: environmental stewardship, economic fairness, and social equity.

Energy democracy “means bringing energy resources under public or community ownership and/or control, a key aspect of the struggle for climate justice…and an essential step toward building a more just, equitable, sustainable, and resilient economy.”

Virginia can make its energy system more democratic by ensuring that policies give communities greater control over (1) how energy is produced, (2) where energy resources are located, and (3) how much energy costs.

To promote energy democracy, there must be a closer nexus between the people who use and pay for the energy system and the decision makers who manage it. For example, transparent and fair elections for electric cooperative and municipal utility boards should be required under the law. These utilities must ensure that all customers are informed and have ready access to board elections. Utility boards should be prohibited from using proxy forms left blank by customers to vote for their preferred candidates on a customer’s behalf.

Further, any utilities that are regulated as state-conferred monopolies contributing to the campaigns of state legislators who write the laws governing those monopolies. As in democratic forms of government, transparency in decision-making is paramount in a democratic energy system.

HOW IS ENERGY PRODUCED?
Net electricity generation in Virginia in 2018 was fueled mostly by natural gas (31%), followed by nuclear (31%), coal (10%), and renewable resources (7%, mostly biomass). Generation is mostly utility-scale.

However, the people who use and pay for the electricity system tend to favor renewable energy resources. Virginians generally have little influence over the source of their electric generation. Only one percent of Virginia’s electricity comes from solar today; most of that solar is utility scale, meaning far less than one percent of Virginia homes and businesses have been able to install solar. Some Virginians have been allowed to choose a different electric service provider if it provides electricity entirely from renewable sources, but the future of the law allowing this choice is currently uncertain.

While recent changes to Virginia law have loosened some barriers to customer-sited solar, Virginia’s utilities—not their customers—retain most of the authority for choosing sources of electricity generation. Policy makers should look for ways to enable customers to choose and afford renewable energy, including authorization of community solar programs beyond the existing (and limited) pilot programs.

WHERE ARE ENERGY RESOURCES LOCATED?
In order to cultivate a just energy system, more resources should be invested in weatherization and renewable energy facilities in low-income and historically disadvantaged communities. In 2019 the General Assembly established a Low-to-Moderate Income Solar Loan and Rebate Fund and Clean Energy Advisory Board, but the fund currently lacks a budget appropriation. Appropriating money to this fund will allow the Board to direct loans and...
rebates to energy efficiency and solar projects in disadvantaged communities. This could allow historically disadvantaged communities to share in the cost savings and economic development benefits of distributed energy resources.

By contrast, the development of polluting energy resources historically has occurred in communities of color and low-income communities. When new energy infrastructure is proposed, justice requires the full and transparent participation of the impacted community during the permitting process.

Virginia made great strides regarding environmental justice during the 2020 General Assembly session, passing several bills in this area, but more progress is needed. In particular, a robust process for integrating environmental justice throughout state agencies is needed to ensure impacted communities have genuine influence over infrastructure siting and permitting decisions. State agencies should analyze proposed actions to determine potential impacts on fenceline communities and adjust any proposed actions to eliminate adverse impacts on these communities.

**HOW MUCH DOES ENERGY COST? WHO PAYS? WHO BENEFITS?**

The COVID-19 pandemic has further revealed longstanding disparities in Virginians’ ability to afford their energy bills, and due to job losses, it has put many more people under financial strain. Energy burden is defined as the percentage of gross household income spent on energy costs (not including transportation). A widely accepted threshold for what constitutes an affordable energy burden is six percent. Unfortunately, many Virginians’ energy burden is closer to 12 percent.

While Virginia did make significant strides in 2020 by establishing a mandatory energy efficiency standard for the Commonwealth’s investor-owned utilities, the ongoing public health and economic crises underscore the need for further reforms. Virginians need more pathways to manage their energy use and lower their bills, including new tools to help low- and moderate-income people afford the upfront costs of weatherization and efficiency upgrades.

**CONCLUSION**

An energy system that serves the public interest is one that protects the environment while also promoting economic fairness and social justice. To achieve energy democracy, Virginia must pursue policies that expand community influence over electricity sources, the siting of energy resources, and the costs and benefits stemming from those decisions.

**POLICY RECOMMENDATIONS**

**Community control over energy sources**
- Preserve and expand customers’ right to choose 100% renewable energy from a competitive service provider.

**Community ownership of energy resources**
- Appropriate $4 million to the Low-to-Moderate Income Solar Loan and Rebate Fund, including funds for job training, energy efficiency, and solar projects.
- Adopt the recommendations in Bringing More Small Scale Solar to Communities (p. 58).

**Justice for infrastructure siting decisions**
- Adopt the recommendations in Working Towards Environmental Justice (p. 118).

**Good Governance and Transparency in Decision-Making**
- Require electric cooperatives and municipal utilities to hold fair and accessible board elections by ensuring online and mail-in voting options, and by prohibiting the opaque practice of “blank proxy voting.”
- Prohibit political campaign contributions from regulated monopoly utilities.
INTRODUCTION
Electric utilities in Virginia operate as monopolies. They have captive customers and – with some tiny exceptions – no competition.

BACKGROUND
After a flawed experiment with “deregulation,” in 2007, Virginia reestablished retail rate regulation for most customers throughout the state (SB1416/HB3068). Pursuant to that law, Dominion and Appalachian Power, Virginia’s two largest investor-owned utilities, were required to come before the State Corporation Commission (SCC) every two years for a review of their earnings and expenses, known as a “rate case.”
Since neither Dominion nor Appalachian Power has any competition, they are not technically entitled to unlimited profits under the law. Instead, they are supposed to charge rates that would – if the companies operated appropriately – generate enough revenue for them to cover their costs and earn a fair profit. Importantly, the SCC – and not the utility – is supposed to determine how much profit is “fair.”

The 2007 legislation, however, had some hidden provisions that prevented the SCC from doing its job. Under that law, if the SCC determined during a rate case that a utility had collected more revenue than it was entitiled to, the SCC could refund those “over-earnings” to customers. The SCC could not, however, refund all the over-earnings, nor could the SCC reduce rates on a going-forward basis to prevent future over-earnings. In order to do that, the SCC needed to order refunds in two consecutive rate cases, which has never happened thanks to subsequent legislation making it impossible. The legislation also included provisions that allow Dominion and Appalachian Power to impose project-specific surcharges on top of their base rates, known as “riders” or “rate adjustment clauses (RACs”). Unlike normal utility operations, which are supposed to give a utility an opportunity to earn a profit if they operate the company properly, riders have guaranteed profits, regardless of company operations.

In 2013, for instance, Dominion did not technically “over-earn” because Dominion sponsored and ultimately prevailed in passing legislation that changed the accounting rules governing storm-related expenses and early retirements. These costs were so large (roughly $400 million\(^3\)) that, under Dominion’s new accounting practices, they negated what would have otherwise been found to be over-earnings.

Likewise, in 2014, Dominion championed legislation that allowed it to write off (i.e., count as an expense against over-earnings in a single rate case) $323 million in costs to develop the North Anna\(^3\) nuclear unit (which Dominion has now more or less abandoned). Finally, in 2015, using the Obama administration’s Clean Power Plan as a scapegoat, Dominion pushed through SB1349, which was called a “rate freeze” but was in reality a complete suspension of earnings oversight.\(^5\)

In short, Virginia’s legislative history of electric utility regulation has been one long story of over-charging customers and kneecapping the SCC. Since 2007, when Virginia re-regulated, Dominion charged and collected from customers approximately $1.6 billion above its authorized profit margin.\(^6\) Likewise, since re-regulation in 2007, the SCC has never had an opportunity to set electric rates based on the industry-standard cost-of-service method. In fact, the SCC has not actually “set” rates for Dominion since 1992.\(^7\) In other words, the rates we pay are based on what it cost Dominion to serve us a generation ago; the rates have nothing to do with what it costs Dominion to serve us now.

During the 2020 session, bipartisan legislation was introduced to remedy that error. The Fair Energy Bills Act (HB1132) would have empowered the Commission to set fair rates for the first time in almost 30 years. The bill passed the House with broad support in both parties, but it died on a razor-thin margin in the Senate Commerce and Labor Committee.

CONCLUSION
The SCC must regain its full ratemaking authority to ensure that customers never pay more than they should for electricity.
POLICY RECOMMENDATIONS

Enable the SCC to fully review Dominion’s base rates and set them on a going-forward basis using traditional cost-of-service methods.

Remove all limitations on the SCC’s ability to set utilities’ authorized rates of return.

Authorize the SCC to terminate the separate riders and instead roll those costs into base rates.
INTRODUCTION
As a Commonwealth, we are facing pressing environmental challenges and a rapidly changing climate. To respond to these challenges, Virginia needs an engaged populace equipped with the knowledge and motivation to conserve our natural resources and protect our public health and economic welfare. The next generation of environmental stewards begins with meaningful and inclusive environmental education.

Every child must have access to safe and enriching outdoor learning experiences. But for too long, these opportunities have failed to reach low income students and communities of color throughout Virginia. Teachers lack the resources, training, and support to facilitate these experiences, and partner programs are left under-utilized. Research makes clear that successful, equitable, and representative solutions to modern environmental challenges are only possible when all voices, particularly those from environmental justice communities, are included. It is time for Virginia to ensure all children receive meaningful environmental/watershed education experiences (MWEE) to meet the challenges ahead. Meaningful experiences, as defined by the Chesapeake Bay Program, are “investigative or experimental project(s) that engage students in thinking critically.” These experiences are critical to each student’s education throughout all of Virginia’s watersheds.

BACKGROUND
Our personal connection with nature and the environment informs our decision-making, our willingness to take action, and how we value our natural resources. We begin to build those connections as children. Environmental education builds problem-solving skills, encourages civic engagement, and engenders a lifelong appreciation for sustainability. While the evidence for environmental literacy and education continues to grow, support for programming, training, and network building has failed to keep pace. In Virginia, environmental education positions within our natural resource agencies have been defunded, leaving this important work to dedicated, but under-resourced non-governmental organizations.

Organizations host professional development opportunities for teachers and non-formal educators, provide a nationally recognized certificate program for environmental education professionals, and offer meaningful environmental education programs across the state for students, including those from marginalized communities. Despite this work, there are still major gaps in Virginia’s effort to promote and sustain environmental education in the Commonwealth and create an environmentally literate society with the “knowledge, skills and dispositions to solve problems... collectively that sustain ecological, economic and social stability.”

EVERY CHILD MUST HAVE ACCESS TO SAFE AND ENRICHING OUTDOOR LEARNING EXPERIENCES.

Environmental education leadership at the state-level would ensure better coordination between school districts, nongovernmental organizations, teacher certification programs, and state agencies, promoting a more holistic and comprehensive plan for improving environmental literacy throughout the Commonwealth. State leaders should partner with organizations that have experience with promoting environmental education and who are intentional about bringing these educational opportunities to low income communities and communities of color. Additionally, adequate state funding can provide every Virginia K-12 student -- regardless of race, ethnicity, region, sexual orientation, income, faith or disability -- with a quality outdoor experiential learning curriculum. Such an investment will ensure that all communities have a meaningful role in finding equitable and sustainable solutions to environmental challenges, especially those impacting the health and welfare of environmental justice communities.

CONCLUSION
Equitable and inclusive environmental education is necessary for an environmentally literate population ready to tackle the global challenges ahead. Virginia needs a coordinated, multi-faceted effort to accomplish this goal, led by state leaders in education and natural resources. Strong state funding is also needed to fill funding gaps and provide every student across Virginia, regardless of race or income, a meaningful environmental education.
Create two full time positions, one within the Education Secretariat and one within the Natural Resources Secretariat, to coordinate and advance environmental education initiatives across the Commonwealth of Virginia.

Fund and support a state licensure endorsement for teachers for environmental education and ongoing professional development opportunities for teachers to encourage and improve environmental education experiences. Recruit teachers who better represent the diversity in communities that need to be reached with environmental education experiences.

Fund $45 million in competitive grants to provide every student across the Commonwealth -- regardless of race, color, national origin, income, faith, disability or region -- a meaningful environmental education experience. These grants should emphasize the importance of field experiences and practical application, prioritizing schools that receive financial assistance through Title 1, Part A of the federal Every Student Succeeds Act of 2015, and utilize the expertise of non-formal environmental education organizations providing these experiences.

POLICY RECOMMENDATIONS
WORKING TOWARD ENVIRONMENTAL JUSTICE

1 Executive Order 12898 - Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations
2 Virginia Environmental Justice Act of 2020
3 Ibid.
4 Gidley Compressor Station Environmental Justice Analysis | Virginia Natural Gas Improvement Project Proposal

REFORMING ELECTRIC UTILITY REGULATION

1 Old Dominion Power, Virginia’s third investor-owned electric utility was not included in the 2007 legislation and Bremains regulated under the same laws that regulate all other Virginia utilities. Only Dominion and Appalachian Power have this special regulatory scheme.
2 Initially, Dominion and Appalachian Power got to keep an additional 0.5% above their authorized profits. That was later amended to allow them to keep 0.7% above their authorized profits. Additionally, they got to keep 30% of everything above that.
3 Application of Virginia Electric and Power Company - Application for a 2013 biennial review of the rates, terms and conditions for the provision of generation, distribution and transmission services pursuant to § 56-585.1 A of the Code of Virginia, Case No. PUE-2013-00020, Final Order (Nov. 26, 2013) at 9.
5 In fact, the “rate freeze” did not even freeze rates. Dominion retained, and during the “rate freeze” took advantage of, the ability to increase total rates through new surcharges known as “rate adjustment clauses,” “RACs,” or “riders.”
6 Memorandum from Kimberly B. Pate, Director of State Corporation Commission Division of Utility Accounting and Finance, for Delegates Jones and Ware (Jan. 27, 2020).
7 Id.
REFORMING ELECTRIC UTILITY REGULATION

OUR 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 130 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 today and for tomorrow.

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.

Bald Eagle
American Battlefield Trust
Chesapeake Bay Foundation of Virginia
Garden Club of Virginia
Piedmont Environmental Council
Southern Environmental Law Center

Cardinal
Alliance for the Chesapeake Bay • Alliance for the Shenandoah Valley • Appalachian Citizens’ Law Center • Blue Ridge Land Conservancy • Chesapeake Legal Alliance • Community Climate Collaborative • Environment Virginia • Friends of the Rappahannock • Generation 180 • James River Garden Club • Lynnhaven River Now • Natural Resources Defense Council • Potomac Conservancy • Powered by Facts • Shenandoah Valley Foundation • The Nature Conservancy in Virginia • Valley Conservation Council • Virginia Aquarium and Marine Science Center Foundation • Wildlands Network

Tiger Swallowtail Butterfly
Allegheny-Blue Ridge Alliance • Appalachian Trail Conservancy • Appalachian Voices • Audubon Naturalist Society • Audubon Society of Northern Virginia • Center for Progressive Reform • Chesapeake Climate Action Network (CCAN) • Clean Fairfax Council • Clean Virginia • Coalition for Smarter Growth • Edith J. Carrier Arboretum at JMU • Foundation Earth • Friends of the North Fork of the Shenandoah River • Loudoun Wildlife Conservancy • Mothers Out Front • New Virginia Majority • Northern Virginia Conservation Trust • Oceana • Pew Charitable Trust • Potomac Riverkeeper Network • Preservation Virginia • Richmond Audubon Society • Roanoke River Basin Association • Scenic Virginia • Shenandoah National Park Trust • Sierra Club-Falls of the James • SouthWings • Spotswood Garden Club • Trust for Public Land • Tuckahoe Garden Club of Westhampton • Unitarian Universalist Church of Roanoke • UVA School of Law, Environmental and Regulatory Law Clinic • VaULT • Virginia Assoc. of Soil & Water Conservation Districts • Virginia Capital Trail Foundation • Virginia Clinicians for Climate Action • Virginia Environmental Justice Collaborative • Virginia Interfaith Power and Light • Virginia Living Museum • Virginia Native Plant Society • Virginia Urban Forest Council • Virginians for High Speed Rail • Waterkeepers Chesapeake (WKC) • Wetlands Watch

Dogwood
1Planet • Albemarle Garden Club • Ashland Garden Club • Back Bay Restoration Foundation • Black Family Land Trust • Blue Ridge Garden Club • Boxwood Garden Club • Capital Region Land Conservancy • Citizens for a Fort Monroe National Park • Climate Action Alliance of the Valley • Clinch Coalition • Conservation Park of Virginia, Inc. • CVille100 • Drive Electric RVA • Faith Alliance for Climate Solutions • EcoAction Arlington • Fauquier & Loudoun Garden Club • Friends of Accotink Creek • Friends of Dyke Marsh • Friends of the Rivers of Virginia • Garden Club of Norfolk • Garden Club of the Middle Peninsula • Garden Club of the Northern Neck • Goose Creek Association • Hands Across the Lake • Hunting Creek Garden Club • Leesburg Garden Club • Mattapony & Pamunkey Rivers Association • Mill Mountain Garden Club • Nelson County Garden Club • Old Dominion Smallmouth Club • Partnership for Smarter Growth • Rail Solution • Rappahannock League for Environmental Protection • Rappahannock Valley Garden Club • Rivanna Conservation Alliance • Rivanna Garden Club • Rockbridge Area Conservation Council • Rockfish Valley Foundation • Shenandoah Green • Sierra Club • Piedmont Group • Sierra Club — Potomac Region • Sierra Club — York River Group • Sierra Club - Falls of the James Group • Sierra Club-Blue Ridge Group • Sierra Club-Chesapeake Bay Group • Sierra Club-Great Falls Group • Sierra Club-Mount Vernon Group • Sierra Club-New River Valley Group • Sierra Club-Rappahannock Group • Sierra Club-Roanoke Group • Sierra Club-Shenandoah Group • Southside ReLeaf Surfrider Foundation • Virginia Chapter • Virginia Association for Environmental Education • Virginia Association of Biological Farming • Virginia Bicycling Federation • Virginia Chapter of the Wildlife Society • Virginia Composting Council • Virginia Council of Trout Unlimited • Virginia Green Travel Alliance • Virginia Society of Ornithology • Virginia Wilderness Committee • Wild Virginia • Williamsburg Garden Club • Winchester Clarke Garden Club