VIRGINIA CONSERVATION BRIEFING BOOK 2012

Our Common Agenda



Front cover photos: iStock



0



www.campbellfoundation.org

ANNONYMOUS FOUNDATION THE AGUA FUND, INC. www.aguafund.org S. Wall



www.westwindfoundation.org

TABLE OF CONTENTS

Our Common Agenda

Introduction

About	this	Briefing	Book .						 								•	 . 2	2
		. 0																	

Healthy Rivers

Virginia and the Clean Water Act	•		5	j
Agricultural Best Management Practices			7	1
Nutrient Pollution Trading			9)
Shale Gas Drilling			13	;
Emerging Contaminants in Streams			15	j
Uranium Mining and Milling		• • • •	17	1
Shale Gas Drilling	· · ·	· · · ·		

Green Communities

Smart Growth	. 21
Transportation Funding	. 23
Public-Private Transportation Act	. 25
Intercity Passenger Rail	. 27
Land Conservation	. 29
Civil War Battlefield Preservation	. 31

Clean Energy

Solar Energy	35
Farm and Community Net Metering	37
Offshore Wind Energy	39
Renewable Portfolio Standards	41
Externalities and Energy Planning	43
Mountaintop Removal Mining	45
A Coalfields Job Credit	49
Confronting Climate Change	51

ABOUT THIS BRIEFING BOOK

Virginia Conservation Network

The Voice of Conservation

Representing 125 environmental, preservation and community organizations active throughout the Commonwealth, Virginia Conservation Network (VCN) is the nonprofit, nonpartisan voice of conservation in Virginia.

The network sponsors educational conferences and workshops, including the annual Virginia Environmental Assembly and a General Assembly Preview Workshop prior to each session of the Virginia General Assembly.

VCN monitors state legislation relevant to the environment, keeping members and citizen activists informed through the VCN E-Newsletter, the website www.vcnva.org, and action alerts.



Workgroups

By networking together community-based groups and larger regional or national nonprofits, VCN brings both scientific expertise and community The mission of Virginia Conservation Network is to combine the voices of environmental organizations across Virginia to conserve our Commonwealth's natural resources and ensure its future prosperity.

values to bear in solving some of the toughest questions facing the Commonwealth. Through a special partnership with the National Wildlife Federation, VCN also works on federal environmental policy issues that directly affect Virginians.

VCN workgroups are the cornerstone of the network's policy research and advocacy. The network's five workgroups—air and energy, water, land use and transportation, land conservation, and uranium mining—provide open forums for experts to discuss conservation issues. In addition, the VCN workgroups evaluate proposed legislation and identify policy solutions for the Commonwealth.

Through an open, deliberative process, these workgroups draft white papers, which are reviewed by VCN's legislative committee and board, then compiled in the annual Conservation Briefing Book.

A Common Agenda

The recommendations contained in this Briefing Book have been thoroughly vetted. Scientists, advocates and environmental educators throughout Virginia helped write and review its content.

The Briefing Book lays out a "common agenda" for conservationists. VCN and its affiliated nonprofits put that agenda into action by educating opinion leaders, by monitoring legislation and endorsing or opposing bills when appropriate, and by helping concerned citizens engage the legislative process.

Get Involved

VCN and the Virginia League of Conservation Voters Education Fund jointly administer the Legislative Contact Team (LCT) program, which mobilizes activists to serve as citizen lobbyists, promoting conservation issues to their state senator or

VIRGINIA'S CONSERVATION PRIORITIES

Healthy Rivers

Virginia must provide adequate funding and enforcement to restore the Chesapeake Bay and must protect drinking water from the toxic pollution associated with uranium mining.

- Fully fund agricultural best management (BMP) cost-share and technical assistance to meet demand, which the Department of Conservation and Recreation has estimated at \$70 mil. annually.
- Ensure safeguards for water quality in Virginia's framework for nutrient pollution trading, including the current 2:1 ratio for point-to-nonpoint source trades and new provisions to retire credits.
- Maintain Virginia's moratorium on the mining and milling of uranium; any attempt to develop a regulatory scheme in 2012 is unacceptable.

Green Communities

In order to have thriving communities, Virginia must contain infrastructure costs through better land use, provide transportation choices, and protect natural and historic gems.

- Reform the Public Private Transportation Act to guarantee public benefits and better protect taxpayers; do not allow private companies to tap into general fund revenue streams via the PPTA.
- Maintain Urban Development Areas as a cornerstone of land-use planning that helps contain infrastructure costs, protect natural resources, and maintain rural and agricultural economies.
- Complement the state's model Land Preservation Tax Credit with a combined investment of\$45 mil. per year in the Virginia Land Conservation Foundation, local Purchase of Development Rights programs and the Virginia Civil War Sites Preservation Fund. This is necessary to achieve Governor McDonnell's 400,000-acre goal.

Clean Energy

As Virginia scales up energy efficiency and renewable energy, we protect consumers, create jobs and position the Commonwealth for future competitiveness.

- Foster Virginia's renewable energy industry through a reformed renewable portfolio standard (RPS) that requires in-state production and sets sub-goals for wind and solar power.
- End subsidies for mountaintop removal coal mining.
- Consider public health costs and benefits in long-range energy planning by requiring they be part of utility integrated resources plans.

delegate. To learn more or sign up, visit www.vcnva.org and click "get involved."

Each January, hundreds of concerned Virginians also take part in Conservation Lobby Day. They hear from lawmakers and environmental experts before meeting with legislators to express support for conservation priorities. Sponsored by VCN and the Garden Club of Virginia, the 2012 Conservation Lobby Day takes place on January 23. Visit *www.vcnva.org* for details and registration.

CONTACT

Virginia Conservation Network 422 East Franklin St., Ste. 303 Richmond, VA 23219 804.644.0283 www.vcnva.org





HEALTHY RIVERS

Clean Water for People and Wildlife

VIRGINIA AND THE CLEAN WATER ACT

Statement of the Issue

While the Clean Water Act establishes the states as the primary guardians of America's streams and rivers, it also provides for multi-state collaboration to restore our largest waterways. For example, the water (and pollution) in the Chesapeake Bay comes from six states and the District of Columbia; all of that water will eventually flow through Virginia on its way to the Atlantic Ocean. A succession of Virginia governors has recognized that a multilateral approach is the best way to protect Virginia's multibillion-dollar fishing and tourism industries.

The precedent setting "pollution diet" (or Total Maximum Daily Load) for the Chesapeake Bay is the latest phase in this multilateral approach. This regional pollution diet is to be made up of state-based plans. Virginia was charged with developing its own cleanup plan to manage our own pollution levels, just as the other jurisdictions are in charge of their own plans. Each state Watershed Implementation Plan (WIP) details enforcement provisions, and other programs that will need to be maintained, developed, or enhanced to protect and restore rivers.

This plan is a road map for the pollution reductions that Virginia has agreed to achieve. Success now hinges on Virginia's lawmakers and regulators, who must provide the funding and enforcement necessary to follow the map and execute the plan.

Background

In 1972, the U.S. Congress passed the Clean Water Act with a wide margin of support. The law established state-administered permits as a means of controlling the pollution then choking America's waterways. These state permitting programs were predicated on attaining water quality standards set by the states themselves. States like Virginia went after the biggest polluters first, greatly reducing the pollution being dumped into rivers by requiring that industrial facilities use the "best available technology." The Clean Water Act's technology-based limits established a level playing field for industry.

However, by 1983, when the bill had envisioned all rivers would be fit for human recreation, many of America's waters were still not "fishable and swimmable." That same year, the Environmental Protection Agency released a congressionallycommission report titled *Chesapeake Bay: A Framework for Action.* The report identified nitrogen and phosphorus as the primary pollutants in the Chesapeake river system, citing polluted runoff from farms and cities in addition to wastewater treatment. The Chesapeake Bay Agreement of 1983 was signed later that year, establishing the state-federal Chesapeake Bay Program.

The Clean Water Act was amended again in 1987 to address the lingering cause of dirty rivers nationwide: polluted runoff. The state-administered permit system was expanded to include stormwater from cities and industrial sites. That same year, Chesapeake region governors signed the 1987 Chesapeake Bay Agreement, which included specific quantitative goals and commitments to reduce nutrient pollution to the Chesapeake by 40% by 2000.

When it became clear that efforts would fall short, the American Canoe Association and American Littoral Society filled a lawsuit which alleged that Virginia had done too little to assess waterways and set pollution limits thus the federal EPA was compelled to intervene. An impaired-waters list was prepared, and the lawsuit was settled with a consent agreement in the Federal Eastern District of Virginia in 1999. Under the terms of the agreement, Virginia was to complete a Total Maximum Daily Load (TMDL) for the impaired rivers by May 1, 2010.

The Clean Water Act established the TMDL as means whereby states determine how much pollution a river can safely tolerate. After setting science-based Unfortunately, our waters are suffering the cumulative effects of pollution from lawns, farms, and cities. Polluted runoff carries animal waste and bacteria into streams. It erodes stream banks, degrading habitats and increasing the risk of flooding.

The TMDL for the Chesapeake Bay represents an unparalleled opportunity to apply the lessons of past successes to the lingering problems of polluted runoff and aging infrastructure. By approaching the process with resolve, Virginia can achieve the fishable, swimmable rivers envisioned by the Clean Water Act. It is incumbent upon state lawmakers to make it a priority by:

- Allocating sufficient funding to agricultural best management practices. This allocation must be sufficient to meet the funds needed to pay for the practices Virginia has agreed to implement in its WIP each year. In 2012 this is estimated to be roughly \$40 million.
- Providing \$10 million in financial assistance for local stormwater planning and pilot projects.
- Assisting localities with wastewater treatment plant upgrades with \$300 million in bond authority.

These pollution-reducing activities are critical to restoring the value of our rivers.

"maximum loads," states can adjust permits accordingly and communities can develop plans to address nonrunoff pollution. These permitted Watershed Implementation Plans (WIPs) are critical to any TMDL because they raise community awareness, inform local land use and code enforcement, and help nonprofits and local governments attain funds for projects that reduce runoff pollution.

The 2010 TMDL deadline was foremost in the minds of Virginia's leaders when the time came to renew the multistate-federal restoration compact. The Chesapeake 2000 agreement, signed in June of 2000, established the goal of removing Chesapeake Bay from the impaired waters list by 2010. Pursuant to this goal, Virginia drafted Tributary Strategies, which detailed the steps needed to restore major rivers such as the Shenandoah, Rappahannock, York and James. The state made significant progress on some goals. However, the amount of polluted runoff from developed land continued to increase over the decade.

In 2008, administration representatives from all six watershed states and the District of Columbia as well as state lawmakers formally requested that EPA accelerate the Chesapeake TMDL to take effect no later than December 31, 2010. A lawsuit brought by Chesapeake Bay Foundation subsequently yielded a federal court consent decree that bound the agency to completing the TMDL no later than May 1, 2011.

The Chesapeake Bay Program was tasked with developing pollution limits for each river in the system, and it was left to states to develop companion

WIPs. Virginia completed the first phase of its WIP in November of 2010. To achieve the needed pollution reductions, the WIP outlines several programmatic needs and strategies for major sources of pollution including wastewater, stormwater, and agriculture. Many of these, like expansion of the nutrient credit exchange program, will require significant policy changes and financial commitments.

Success will also require the full participation of local governments, who oversee land use, building codes, stream buffer ordinances and water utilities. With that in mind, the state and EPA invited local governments to participate in the second phase of implementation planning. In 2011, local governments planning district commissions catalogued and existing land cover, stormwater best management practices, on-site septic systems, and other relevant information. They developed custom strategies to reduce pollution, tailored to local conditions, regional economies and citizen priorities such as stream restoration and greenway development. Phase two is scheduled for completion in the spring of 2012.

CLEAN WATER CONTACTS

Jacob Powell Network 804.644.0283 jacob@vcnva.org

Adrienne Kotula Virginia Conservation James River Association 804.788.1119 akotula@jrava.org

AGRICULTURAL BEST MANAGEMENT PRACTICES

Statement of the Issue

Farm runoff contributes significantly to the excess nitrogen, phosphorus and sediment pollution to Virginia rivers and the Bay. Fortunately conservation techniques, also called best management practices (BMPs), can prevent this runoff from leaving fields, and polluting our water.

Many Virginia farmers use BMPs already; however the sometimes substantial cost of implementing them is a major barrier to widespread use. State and federal cost-share programs exist to help farmers pay for conservation practices, but historically such programs have been significantly under-funded. Every year, many Virginia farmers who apply to participate in state cost-share programs are turned away because of a shortage of funds.

Background

Agricultural runoff accounts for much of the nutrient excess entering Virginia's rivers and the Chesapeake Bay. Approximately 20% of the nitrogen, 42% of phosphorus and 41% of the sediment load comes from Virginia agriculture. Farm BMPs including nutrient management plans, forest and grass riparian buffers, stream bank fencing to block livestock access, cover crops, continuous no-till, and many more can prevent these pollutants from reaching surface and ground waters.

Across the Commonwealth, farmers actively seek to adopt these practices, and many have already done so. However, installation costs and adequate technical assistance are major barriers. Unlike other regions of the country dominated by large agricultural production operations, the average Virginia farm size is 171 acres, and the average annual farm income is about \$61,000 per year. Given the inherent risks associated with farming (weather, commodity prices, etc.), farmers do not always have a predictable income; one year's profits may cover future years when the farm operates at a loss. Cost-share is the necessary bridge that farmers need so they can do their part to protect Virginia's water resources.

Furthermore, as part of its obligation to help restore the Chesapeake Bay, Virginia has developed a Watershed Implementation Plan (WIP) which is a road map for achieving necessary reductions in pollution. This plan lays out a timeline for implementing BMPs, and includes specific goals set every 2 years, called milestones. It will be necessary for cost-share funding to match the needs that are outlined in the WIP. If the milestone goals are not met through these voluntary actions, the WIP also outlines possible regulatory action Virginia might be force to take. Avoiding this regulatory action will require adequate cost-share funding and some programmatic changes.



In 2011 the General Assembly passed enabling legislation for Resource Management Plans (RMP), which is one of the programmatic changes the WIP identifies. The RMP was developed to be a vehicle to deliver more BMP implementation. If it and other changes are the vehicles for BMP implementation, cost-share is the fuel. Without it the RMP and the other changes will fail to meet the milestone goals.

AG BMP RECOMMENDATIONS

The future of agriculture in Virginia and the future of the Commonwealth's rivers are inextricably linked. We cannot afford to continue to turn away or discourage farmers from being good stewards of their land and the Commonwealth's water resources. If we provide this much needed help, farmers can help us all protect and restore our rivers, streams, and estuaries.

The Commonwealth should make a strong financial commitment to the state's water quality goals and to the farming community by:

- Allocating sufficient funding to agricultural best management practices. Statewide, this is estimated to be roughly \$67 million in state cost share funds for fiscal year 2013, and \$71 million in fiscal year 2014.
- Providing adequate funding for technical assistance, as it is a role typically performed by state agencies, critical in leveraging landowner willingness.

"Historically state cost-share programs have been funded only when there is a budget surplus. But farmers are expected to protect water quality in good years as well as bad, and Virginians need clean water every day.

With the help of cost-share, last year Virginia farmers installed over 10,000 BMPs and over 2million pounds of nitrogen were prevented from polluting Virginia's waters. However, historically

state cost-share programs have been funded only when there is a state budget surplus. Farmers are expected to protect water quality in good budget years as well as bad, and Virginians need clean water every day. Thus, state cost-share programs must be consistently and adequately funded every year, and not contingent on a budget surplus.

AG BMP CONTACTS

Jacob Powell Virginia Conservation Network 804.644.0283 jacob@vcnva.org Adrienne Kotula James River Association 804.788.1119 akotula@jrava.org

NUTRIENT POLLUTION TRADING

Statement of the Issue

Virginia has operated a nutrient pollution trading program since 2005. The Commonwealth is considering expanding the program as part of its plan to implement the Total Maximum Daily Load (TMDL) "pollution diet" for Chesapeake Bay. Such an expansion carries both potential opportunities and risks. Any legislation proposed in the 2012 General Assembly session to expand the program must uphold the delivery of verifiable, cost-effective pollution reductions that restore and protect water quality consistent with the federal Clean Water Act.

Background

Pollution trading is a market-based strategy intended to more rapidly and cost-effectively meet environmental quality goals. Trading programs establish permanent pollution goals, or "caps," for sources of pollution. The program then allows one source (the "buyer") to meet their regulatory obligation by paying another (the "seller") who has reduced its discharge below their own cap. Trading may involve either the acquisition of "credits" to help comply with a permit cap, or the acquisition of "offsets" to compensate for new pollution that exceeds a cap. Trading allows flexibility to capitalize on differential efficiencies (economic, physical space, time, etc.) among and between sources to help meet pollution goals more effectively. Trading is a supplement to traditional regulatory (e.g., "endof-pipe" limits) and non-regulatory (e.g., federal "cost-share" programs) means to control pollution.

The 2005 Virginia General Assembly established the first pollution trading program in Virginia. It created the Chesapeake Bay Watershed Nutrient Credit Exchange Program (SB 1275, §62.1-44.19:12) to help "point sources" (i.e., municipal and industrial wastewater treatment facilities) meet Chesapeake Bay nitrogen and phosphorus reduction goals in the most cost-effective manner and help the Commonwealth accommodate new facilities that support economic development without harming water quality. This program allows point sources to acquire credits from other point sources to comply with assigned nutrient loading permit caps *and* acquire offsets from point and nonpoint sources (such as farmers and private landowners) to compensate for pollution loads from a new or expanding facility that exceeds a cap.

This program is focused on meeting and maintaining "aggregate" nutrient pollution loading caps in each of the five large river basins that make up the Bay watershed in Virginia, rather than individual facility load caps. The premise here is that the *total* nutrient loading drives the current water quality impairment in the tidal rivers and the Bay.



A "watershed general permit" (9VAC25-820) lists the individual and basin-wide nutrient loading caps and establishes the underlying trading framework. Currently more than 160 point sources are covered by this type of permit, and 46 facilities have signed contracts guaranteeing trades by the close of 2011.

In 2009, the General Assembly authorized a statewide Nonpoint Nutrient Offset Program (HB 2168, §10.1-603.8:1) to help new development activities meet the "no-net-increase in pollution" goal included in stormwater regulations that will take effect in 2014. Developers may acquire offsets from point or nonpoint sources to meet this regulatory requirement when on-site practices

NUTRIENT TRADING RECOMMENDATIONS

Below are principles and recommendations to assist in the evaluation of any nutrient trading legislation during the 2012 General Assembly. These items address rules that should be maintained in the existing program, as well as new concepts that could move forward in legislation.

• Only credits or offsets that constitute quantifiable net pollution reductions may be traded. The existing requirement in statute that new or expanding point sources may only acquire nonpoint source offsets generated by the installation of best management practices that exceed a specified "baseline" level of performance must be maintained. The baseline represents the amount of reductions a source is expected to achieve under the TMDL before it can generate credits by doing more than required. Other states have run into problems by overstating reductions from certain practices and allowing long-standing practices to be sold for new credits. Virginia should avoid such practices as it moves forward. Any revised or new baselines must be established based on consultation with appropriate experts through a formal regulatory process.

Virginia's nutrient credit exchange currently does not result in actual net improvements to water quality. It moves pollution from one area to another. This may serve to address certain types of additional pollution associated with future growth, but the exchange will not address current water quality impairments. Virginia should adopt provisions, similar to those in other states, which require every trade to "retire" a percentage of credits as a way to assist with meeting water quality goals. The credits retired represent a net pollution reduction.

- Protection of local water quality must be paramount. The existing requirement in statute and regulation that requires compliance with "local water quality limitations" must be maintained, and should be enhanced by specifying how this goal will be met by code or appropriate guidance. Trades should be limited to parties in relatively close watershed proximity (e.g., Chesapeake Bay segment-shed or 12-digit HUC) so that no transaction will harm local waters. While trades within river basins may be allowed, preferences should be given to those trading and offset opportunities in close watershed proximity to the sites and facilities initiating the trades. Trades should require an actual demonstration that local water quality will not be degraded. This is particularly important where the buyer is upstream of the seller, in order to ensure the waterway between the two parties is protected.
- Point sources that choose to acquire nonpoint source offsets must acquire two pounds of nonpoint source reduction for every pound they are seeking to offset. As more trades involve nonpoint sources such as farm best management practices (BMPs), it is imperative that Virginia maintain the 2:1 trading ratio that currently exists for trades that include nonpoint sources. This provision is intended to address both the inherent uncertainty of nonpoint source BMPs and the absence of site-specific discharge monitoring. Virginia's current approach incorporates a measure of safety and recognition that BMPs can be affected by several factors. Numerous reports, including the recent National Academy of Sciences report on the Chesapeake Bay TMDL, have highlighted the uncertainty of outcome from agricultural BMPs due to improper installation and

NUTRIENT TRADING RECOMMENDATIONS (CONT.)

maintenance, severe weather impacts, etc. In the absence of providing site-specific monitoring that would approximate the discharge monitoring required of point sources, this 2:1 ratio must be maintained.

- All trades must be transparent to the public, subject to appropriate verification, and fully enforceable. Making Virginia's program more transparent by allowing the public to see what trades and offsets are being offered and made will improve the public's acceptance of the trading program. Virginia should establish a public registry as has been done in other states. It will also be important for state agencies on behalf of the Commonwealth to have sufficient resources to carry out the additional oversight responsibilities associated with an expanded trading program. In this regard, Virginia should adopt an upfront registration fee for all new credits to help defray state program costs. The Commonwealth should avoid leaving all oversight responsibilities to credit generators, credit brokers or permit holders.
- All trades must comply with applicable federal Clean Water Act programs. For example, consultation with EPA and appropriate legal counsel must take place for any proposal that seeks to (1) allow municipal separate storm sewer systems (MS4s) to "bubble" their permit requirements with nearby MS4s or wastewater treatment plants or (2) generate credits or offsets through BMPs installed in a water body ("in-stream treatment"). This is important because the Federal Clean Water Act is the basis for these permits that are administered by the state state law cannot preempt it.
- Provide a reliable and transparent method for determining how new and emerging pollution reduction technologies are allowed to enter the trading marketplace. One benefit of nutrient trading programs is the ability to incorporate new or nontraditional ways of reducing pollution. Several ideas have already been mentioned by Virginia stakeholders, including oyster gardening, algal production, constructed wetlands, etc. While such approaches (also referred to as "assimilation services") may hold promise, greater scrutiny and expertise will be needed to determine the creditworthiness and uncertainty ratios of these approaches. Virginia should establish a rigorous review process based on the best available science to assist state agencies in making these determinations. Establishing a scientific and technical review panel may be a good first step.
- Remove existing loopholes that prevent complete offset of new and expanding pollution loads. The Virginia WIP identified an existing loophole wherein a wastewater treatment facility that discharges greater than 1,000 gallons per day but is expanding to less than 40,000 gallons per day would not be required to offset their entire new nutrient load. Further, the new Virginia stormwater management regulations for new construction allow certain future projects to be "grandfathered" and escape the "no net pollution increase" requirement in the new regulations, thereby, allowing discharges of new pollution loads without offset. Both of these loopholes should be removed.



cannot practicably achieve necessary pollution reductions. A preference for offsets within the local watershed (8-digit Hydrologic Unit Code) is also included. Legislation in 2011 (SB 1102, §62.1-44.19:15D) prescribed some rules for the generation of credits or offsets by animal waste-to-energy and waste reduction projects.

Finalized in 2010, Virginia's Watershed Implementation Plan (WIP) for the Chesapeake Bay envisioned an expanded role for nutrient trading to help achieve pollution reduction goals from challenging pollution sources, such as existing urban development and septic systems built in the past without adequate pollution controls. The 2011 General Assembly passed a senate joint resolution (SJR 334) that directed the Secretary of Natural Resources to study the expansion of the state's trading program and report recommendations to the 2012 General Assembly.

Nutrient trading in Virginia has promise, particularly in its potential to deliver pollution reductions to the Chesapeake faster and less expensively than without trading. However, expansion of the program must be done carefully and with consideration to a number of issues and principles. Without appropriate parameters, an expanded nutrient trading program could (1) fail to meet its goal of assisting the Chesapeake Bay cleanup, (2) negatively impact local water quality, or (3) run afoul of federal Clean Water Act programs that underlie all state water quality programs.

Careful consideration and review of any future legislation is critical to ensure Virginia maintains a nutrient trading program that will help meet water quality goals, reduce costs, provide accountability and transparency, and offer surety for participants that the program can withstand legal scrutiny.

NUTRIENT TRADING CONTACTS

Jacob Powell Virginia Conservation Network 804.644.0283 jacob@vcnva.org

Mike Gerel Chesapeake Bay Foundation 804.780.1392 mgerel@cbf.org

SHALE GAS DRILLING

Statement of Issue

While new technologies in hydraulic fracturing and horizontal drilling are creating a boom in natural gas extraction in the United States, this type of drilling is not yet underway in western Virginia's Marcellus or Uttica shale formations. Citizens, conservation organizations, and local government officials are concerned about the industry's potential risks to public health, natural resources and rural lands and the adequacy of current standards. In Virginia, it is important to preserve the zoning authority of local governments to guide the pace, scale and impacts of the industry in their communities.

Background

Gas drilling by high-volume hydraulic fracturing, or hydrofracking, involves injecting water, sand and chemicals at high pressure to break up shale formations and release natural gas. In Virginia, the Marcellus Shale extends under the Allegheny Mountains, on the west side of the Shenandoah Valley, from Frederick County south to Rockbridge. The Marcellus shale formation has been heavily drilled in Pennsylvania and West Virginia over the past eight years, with significant, documented impacts on local communities and the environment.

Environmental and Community Impacts

Hydrofracking requires up to 5 million gallons of water per well and perhaps more. But water in western Virginia is limited, prompting concerns about the adequacy of the region's supply to accommodate such an intensive industrial use. In addition, sometimes drilling operations withdraw water from small, sensitive streams near wellpads, creating the potential for even more acute local impacts from water withdrawals. Unlike agriculture or domestic water uses, gas drilling does not return fracking fluids to ground or surface supplies without treatment. Roughly one third of the fluid injected into shale gas well returns to the surface as flowback, often mixed with naturally occurring brines and/or radioactive materials. Wastewater must typically be stored on site, and then transported to a wastewater treatment plant or deep underground injection well. In general, local wastewater treatment plants cannot adequately treat the millions of gallons of contaminated wastewater generated by shale gas wells.

Shale gas drilling also poses a risk of groundwater and surface water contamination and air pollution. Marcellus shale drilling has been linked to methane gas pollution in drinking water wells in Pennsylvania. Accidental spills, explosions and improper disposal of shale drilling wastewater have polluted streams and rivers. Also, air quality impacts from pollution leaks during hydrofracking and emissions released during processing and transport can become severe.

Virginia's Marcellus shale lies beneath drinking water sources for more than 260,000 Shenandoah Valley residents, in and around the GWNF and the headwaters of the Shenandoah River. In 2010, three Shenandoah Valley counties and two cities asked the U.S. Forest Service to ban or adopt a moratorium on horizontal drilling and/or hydraulic fracturing on the forest to protect water quality, recreation and other resources and prevent the industrialization of public forest lands. The Forest Service studied the issue as part of its GWNF management plan revision and proposed to prohibit horizontal drilling in any future federal oil and gas leases. This proposal has broad local support.

In the Shenandoah Valley, many residents and local elected officials also are deeply concerned about the potential industrialization of rural land, as hydrofracking creates a large industrial footprint. Farms, forests and public lands are transformed by three-to-ten acre well pads, wastewater storage pits, compression tanks and compressor stations, 24-hour industrial lighting, new access roads and pipelines, and often overwhelming traffic from the hundreds of heavy trucks needed to serve each well. These are issues that lie at the heart of each locality's comprehensive plans and zoning regulations.

The Shenandoah Valley's local governments and private sector have invested for generations in traditional rural land uses—farming, forestry, tourism and recreation—based on the natural, historic and cultural resources most likely to be harmed by widespread natural gas drilling. Local

SHALE GAS DRILLING RECOMMENDATIONS

The heavy footprint of shale gas drilling has the potential to impact local water supply and quality and to compromise traditional rural economic sectors. Local governments have the ability to guide the pace, scale and impacts of hydraulic fracturing in their communities through zoning. Therefore, the zoning authority of local governments over the industry is critical and must be preserved, regardless of any future regulatory action which improves state-level oversight.

States to Virginia's north and west are reviewing and updating their regulatory structures to better manage the new risks and impacts of high volume hydrofracking. In addition, there are several federal studies underway to better understand the impacts of this new practice. Virginians are fortunate to have the opportunity to apply lessons learned from other studies before undertaking our own prudent updates to Virginia's Oil and Gas Act.

governments have also invested heavily in comprehensive plans and zoning rules designed to maintain the quality of their communities. The Valley has no history of, or strategy for, economic development based on heavy industrial energy development in its rural areas.

Regulatory Oversight

The boom in shale gas drilling east of the Mississippi provides a clear case of industry getting ahead of regulatory oversight. In 2005, before the impacts of high-volume hydrofracking were better understood and publicized, Congress exempted fracturing from the Safe Water Drinking Act, the Clean Water Act and other major environmental laws. The potential impacts of fracking, particularly on groundwater, are still not fully understood. Several federal studies are currently underway in response to the host of reported environmental and public health problems.

In the absence of sufficient federal oversight, New York, New Jersey and Maryland placed moratoria on hydraulic fracturing until state agencies develop standards specific to shale gas drilling. Pennsylvania and West Virginia, already feeling heavy impacts from the industry, also are working to develop new drilling standards. Those states also suffered from lack of adequate staffing to applications, inspect drilling review permit operations, and conduct enforcement activities. Some of the reported problems have been the result of widespread drilling in remote areas taking place without adequate regulatory supervision.

There are as yet no shale formation gas wells in Virginia, therefore state agencies and local

governments lack experience overseeing the use of high-volume hydrofracking in deep, horizontal shale wells. The Virginia DMME claims that current state laws and regulations are sufficient, but the rules do not provide comprehensive environmental review nor do they address the full scope of impacts shale gas drilling has on the environment, public health, water quality and local communities. In addition, it is not clear that DMME has adequate staff should a shale drilling boom occur in Virginia. For example, the first shale gas well approved by DMME (but not yet developed) reveals that the current regulations fall short.

DMME granted a permit for a well and associated wastewater holding ponds to be built in a floodplain in the headwaters of the North Fork of the Shenandoah River, upstream of the drinking water intake for the town of Broadway. No emergency management plan will be required, despite the growing number of reports of explosions and other accidents at similar wells in Pennsylvania and West Virginia. Also, there is no formal role for other state agencies, such as VDGIF, DCR and DEQ to contribute their expertise to the process.

SHALE GAS DRILLING CONTACTS

Sarah Francisco
Southern Environ-
mental Law Center
434.977.4090
sfrancisco@selcva.org

Kate Giese Wofford Shenandoah Valley Network 540.987.8155 kwofford@svnva.org

EMERGING CONTAMINANTS IN STREAMS

Statement of the Issue

In 2002, smallmouth bass began experiencing significant skin lesions and spring mortality events in the South Branch of the Potomac River.¹ More recently, such events have been observed in the James, Shenandoah and Monocacy Rivers. Scientists believe that this is an effect of a new broad class of pollutants called emerging contaminants.

In one study, 139 streams were monitored throughout the nation, revealing that 80% of them contained 31 different emerging contaminants. The most common of which were plant and animal steroids, pesticides, caffeine, disinfectants, fire retardants and detergent components.² These chemicals pose a threat to ecological and human health. The full extent of that threat is not yet known, nor is the degree to which various combinations of these chemicals magnify risk.

Background

The Consortium for Research and Education on Emerging **Contaminants** defines emerging contaminants as chemicals that occur widely in water resources and may pose a risk to the environment or human health. This broad definition reflects a high degree of uncertainty about the number and source of these chemicals and their likely effects on people wildlife. and These chemicals originate as pharmaceuticals, personal care products, pesticides and fertilizers or industrial chemicals then make their way into the environment. Many of these compounds are endocrine disruptors, meaning they affect hormone function within the body.

The diversity of chemicals and sources nevertheless yields a common set of concerns. Specifically, scientists are concerned about exposure risks, bioaccumulation and synergistic effects.³ The In one study, 139 streams were monitored throughout the nation, revealing that 80% of them contained 31 different emerging contaminants. The most common of which were plant and animal steroids, pesticides, caffeine, disinfectants, fire retardants and detergent components.²

latter in particular prompts concern regarding the actual risks associated with uncertainty; which is to say, what we do not know about these chemicals and their aggregated effects could in fact do harm.

As there is little known about emerging contaminants, there are rarely controls on their discharge. Without such controls there is also no established method of measuring and accounting for their dispersion. Many of these chemicals enter streams and rivers via treated wastewater. While sewage treatment plants are making significant strides in the removal of nitrogen and phosphorus, pharmaceuticals, detergents, fragrances, and other compounds often remain. Rainwater runoff can transport pesticides, fertilizer and litter, including plastics, into streams. Runoff is also a primary means



EMERGING CONTAMINANTS RECOMMENDATIONS

The potential impact of this issue deserves the attention of Virginia's lawmakers and further scientific study. Massachusetts established the Emerging Contaminant Workgroup in 2006. The program has defined emerging contaminants, established a list of substances and created a framework for screening and prioritizing contaminants. The effort relies on scientific standards, extensive collaboration and outreach programs. Importantly, the initiative considers health risks, the existence of published standards, available toxicological data and significant new sources.⁵ This model provides a framework for Virginia to begin addressing the significant issue of emerging contaminants by establishing an interagency task force or legislative study.

whereby the chemicals found in animal manure, including antibiotics and hormones, enter streams.

Because of the diversity of sources, the presence of emerging contaminants may spike and ebb within a given waterway. The effects of exposure are not immediate and may require prolonged exposure or a trigger such as a pathogen. Analyzing the health of fish populations provides a good method for judging the cumulative effects of environmental stressors. The results of this data are troublesome because fish populations in the Shenandoah and Potomac rivers experiencing increase are an in intersex characteristics, serious skin lesions and mortality. This is consistent with high levels of emerging contaminants in that estrogenic chemicals are believed to disrupt immune system function. In terms of human health, possible concerns include cancer, infertility, intersex disorders, asthma, autism, ADHD, diabetes and thyroid disorders.⁴ Humans can be exposed to emerging contaminants both by direct contact with a river and by consumption of treated technology.

1.V.S. Blazer, et. al. *Mortality of Centrachid Fishes in the Potomac Drainage: Survey Results and Overview of Potential Contributing Factors.* Journal of Aquatic Animal Health. (2010).

2.Kolpin et al. *Pharmaceuticals, hormones, and other organic wastewater contaminants in U.S. streams, 1999-2000: a national reconnaissance.* USGS (2002).

3. William Wombacher. *There's Cologne in the Water: The Inadequacy of U.S. Environmental Statutes to Address Emerging Environmental Contaminants*, 21 Colo. J. Int'l Envtl. L. & Pol'y 521 (2010).

4. Vicki Blazer - USGS. Contaminants of Emerging Concern in Rivers and Streams and Effects on Fish Health. http://dls.state.va.us/groups/water/ meetings/102810/contaminants.pdf

5. MassDEP. *Emerging Contaminants Fact Sheet & Overview*. http://www.mass.gov/dep/toxics/stypes/emercfs.htm.

EMERGING CONTAMINANTS CONTACT

Jacob Powell Virginia Conservation Network 804.644.0283 jacob@vcnva.org

URANIUM MINING AND MILLING

Statement of the Issue

For thirty years, Virginia has maintained a ban prohibiting uranium mining in-state.¹ Virginia Uranium, Inc. (VUI) is now attempting to lift that ban. Much of VUI's efforts have focused on a major uranium deposit in Southside Virginia, known as Coles Hill. The potential for uranium exploration, however, exists statewide.

If uranium is mined and milled in Virginia, the resulting "yellowcake" would have to be shipped out-of-state to an enrichment facility.² What would be left behind in Virginia is the waste, known as tailings. According to VUI, the Coles Hill deposit has an average grade of 0.06 percent uranium oxide.³ In contrast, the average grade of the McArthur River mine, in northern Saskatchewan, is more than 15 percent — 254 times richer than Coles Hill.⁴ This means that Coles Hill would produce significantly more waste than the richest



Canadian deposits per pound of yellowcake produced.

To date, at least twenty-four governmental organizations—cities, counties, towns, and regional councils of government in Virginia and North Carolina—have passed resolutions in support of keeping the ban. These include the town of Halifax, Virginia, Orange County, Virginia, and the City of Virginia Beach. Joining these communities is a wide range of civil rights and environmental organizations: the Virginia State Conference of the NAACP, Virginia Organizing, American Rivers, and the National Wildlife Federation, among many others. You can learn more about the coalition of groups working to "Keep The Ban on Uranium Mining in Virginia" at www.keeptheban.org.

Background

A Threat to Public Health

Peer-reviewed research and government reports confirm that populations living near uranium mines or mills may be exposed to higher levels of uranium in drinking water and locally grown foods due to contaminated soil, water and air.⁵

Higher incidence rates of childhood leukemia, respiratory disease and kidney disease have been recorded in areas close to uranium mine sites. Additional studies show that uranium toxicity may affect bone growth and development and have negative reproductive and developmental effects.

A Threat Downstream

Uranium levels in drinking water have been associated with damage to kidney function that may increase the risk of kidney disease. Communities that depend on waterways close to mining and milling sites are vulnerable to exposure following either acute or chronic failures of tailings containment facilities. These tailings retain about 85 percent of the original radioactivity.⁶"

The City of Virginia Beach has raised important concerns about the Coles Hill site, which sits within the Roanoke River watershed. The City retained the Michael Baker Corporation, a global engineering firm, to research the potential for contamination of Lake Gaston from uranium waste during a major precipitation event, such as a hurricane.

The Baker report concluded that a catastrophic failure of a mill tailings containment cell at the

URANIUM MINING RECOMMENDATIONS

Neither the Coal and Energy Commission nor the General Assembly should even consider legislation on uranium during the 2012 legislative session—to do so would be to renege on the pledge to provide public meetings throughout the state, after release of the NAS prepublication report. Legislators should instead stand firm and "Keep The Ban" on uranium mining in Virginia.

proposed Coles Hill site would be significant for water supplies in Hampton Roads. Released or leaked tailings would move through the river system to the reservoirs downstream, including Lake Gaston, potentially leading to radioactivity concentrations in the river/reservoir system 10-20 times greater than what is allowed by the Safe Water Drinking Act.

As of November, 2011, at least twenty-four governmental organizations—cities, counties, towns, and regional councils of government in Virginia and North Carolina—had passed resolutions in support of keeping the ban on uranium mining in Virginia.

A Threat Statewide

Speaking to legislators and citizens' groups, representatives for VUI have insisted that Coles Hill is the only potential uranium mining site in the Commonwealth. But when speaking to financiers, VUI tells a *very* different story. In London in February 2011, Walt Coles, Jr. told an investors conference:

[A] Canadian company called Marline Uranium ... had made a major discovery in Athabasca called Rabbit Lake, and it was the first major uranium discovery in Athabasca. ... And two years later, that same team made the discovery of Coles Hill, and talking to the lead geologist, he's insistent to this day that Coles Hill is the first of more major discoveries in Virginia that might lead to another Athabasca-style resource play.⁷

Coles' candid assessment is buttressed by Susan Hall, a geologist with the U.S. Geological Survey, who explained, "A common scenario in mineral exploration is that a large discovery such as Coles Hill is followed by an influx of exploration companies who comb the countryside and discover additional deposits."⁸

In the 1970s and 80s, prior to the imposition of the ban, the industry obtained more than 1,200 exploratory leases affecting at least three watersheds: the Roanoke River (providing drinking water to Hampton Roads); the (providing drinking Occoquan water to portions of Fairfax County); and the Rappahannock (flowing to Fredericksburg). Although these leases have expired, they provide an important indication of where exploration would resume if Virginia's longstanding ban is lifted.

A Rush to Judgment

Four independent studies will inform Virginia's decision on whether to maintain our ban on uranium mining. These are:

- the downstream impacts analysis by the City of Virginia Beach;
- a socio-economic study being conducted for the Virginia Coal and Energy Commission by Chmura Economics and

Analytics, a small firm, based in Richmond, with close ties to the coal-mining industry;

- a socio-economic study being conducted for the Danville Regional Foundation by RTI International, a worldwide research institute headquartered in Research Triangle Park, North Carolina. The Danville Regional Foundation is a regional community foundation with no affiliation to the environmental community or pro-mining interests.
- a scientific and technical review being conducted by the National Academy of Sciences (NAS). The NAS has stated emphatically that it will not determine whether mining can be carried out safely in Virginia; that is a policy matter delegated exclusively to the General Assembly.

Although the NAS will release a prepublication report in December 2011, the project will not be complete until April or May 2012. The NAS's contract with Virginia states:

The project timeline and budget includes a five month period after public release and delivery of the report in prepublication form, to allow for publication of the printed reports and extensive public outreach that will include public meetings in Virginia to disseminate the report's findings.⁹

In other words, the contract envisions that from December 2011 through May 2012, members of the Committee will be made available at 'town hall' style public hearings across the state to build public confidence and understanding of the Committee's findings. Yet VUI is now pressing state legislators to lift Virginia's mining ban during this legislative session—before the NAS's project has been completed. 1. The ban was codified in 1982, and can be found at Virginia Code § 45.1-283.

2. Enrichment facilities increase the concentration of Uranium 235 isotopes up to a level that is usable as a fuel for commercial nuclear reactors. There are no enrichment facilities in Virginia; the closest operating plant is one owned by the U.S. Department of Energy in Paducah, Kentucky. Fuel from the Paducah plant is sent to commercial nuclear customers all over the world.

3.Virginia Energy Resources, Corporate Presentation, *at* http:// www.santoy.ca/i/pdf/VAE_CorporatePresentation.pdf

4. Cameco Corp., "McArthur River: Summary," *at* http:// www.cameco.com/mining/mcarthur_river/

5. For example, a study of cattle raised near uranium mining and milling plants in New Mexico found that the uranium concentration in the vegetation was 75 times greater in the exposed area than in control sites. Uranium concentrations in the exposed cattle were 4 times greater for the liver and kidney and 13 times greater for the femur.

6. Michael Baker Corp., A Preliminary Assessment of Potential mpacts of Uranium Mining in Virginia on Drinking Water Sources, Final Report, at ES-2 (Revised Feb. 22, 2011), available at http:// www.vbgov.com/government/departments/public-utilities/ Docments/04.UraniumMiningReport_Final_ Updated20110222_V2.pdf.

7. Walter Coles, Jr., Virginia Energy Resources, Inc., "Building North America's Uranium Supply," Americas' Resources Investment Congress, London, U.K. (Feb. 1, 2011) (transcript on file with Southern Environmental Law Center) (emphasis added).

8. "Virginia uranium debate sparks question: Is there more?," CHAR-LOTTESVILLE DAILY PROGRESS (July 24, 2011) *available at* http:// www2.dailyprogress.com/news/2011/jul/24/virginia-uranium-debatesparks-question-there-more-ar-1193801/.

9. See Fixed Price Subaward Contract between National Academy of Sciences (signed 2/19/2010) and Virginia Polytechnic Institute and State University (signed 2/22/2010), at Appendix A, p.5 (emphasis added).

URANIUM MINING CONTACTS

Cale Jaffe	J.R. Tolbert
Southern Environ-	Sierra Club
mental Law Center	804.225.9113 xtn. 112
434.977.4090	jr.tolbert@sierra
cjaffe@selcva.org	club.org

green communities



GREEN COMMUNITIES Better Places to Live and Work

SMART GROWTH

Statement of the Issue

Despite the recent economic downturn, Virginia continues to grapple with the cost of sprawling development which spread far from existing communities in recent decades. This type of development is costly to taxpayers and has led to rapid loss of rural lands, loss of natural, historic, and cultural resources, harmful pollution, increased traffic, and a deteriorating quality of life for many Virginians. The impact on family budgets from long, costly commutes has also been significant and apparently contributed to the real estate collapse in the outer suburbs.1 When considering very tight federal, state and local budgets, family finances, our dependency, the contribution oil and of transportation emissions to health problems and climate change, smart growth-with its focus on location efficient development-becomes a public policy imperative. Virginia made strong strides to better link land use and transportation in recent years, including legislation in 2007 that can reduce the cost of infrastructure. Unfortunately, during 2011 these state initiatives were weakened, and additional rollbacks are likely to be proposed in the upcoming 2012 General Assembly session.

neighborhoods. A higher quality of life enhances economic competitiveness by helping to attract and retain businesses and workers. Further, a summary of 40 years of fiscal impact studies showed that smart growth-compact and traditional cities, towns and neighborhoods-typically consumes less land, and costs much less for roads, utilities, and housing than does sprawling development.² Moreover, where there are incentives and a focus on redevelopment, the public and private sector can collaborate on the repair and replacement of aging infrastructure in existing communities. Legislators of both parties have recognized this, and have passed a number of measures promoting more sensible growth in recent years-including requirements for Urban Development Areas (UDAs) to focus growth in more compact, walkable communities and for more connected street networks. These approaches will save taxpayers money, strengthen our communities, save energy, reduce traffic congestion, and protect our farmland, health, and environment. They also offer the potential for a new partnership between state and local governments to guide growth more efficiently and effectively.

1. See, for example, Joe Cortright, CEOs for Cities, "Driven to the Brink." http://www.ceosforcities.org/work/driven_to_the_brink

2. See Transportation Cooperative Research Report 39, "Costs of Sprawl," http://www.trb.org/Publications/Blurbs/Costs_of_Sprawl_2000_160966.aspx and TCRP Report 74, Costs of Sprawl—Revisited, http://pubsindex.trb.org/view.aspx?id=540975

SMART GROWTH CONTACTS

Trip Pollard Southern Environmental Law Center 804.343.1090 tpollard@selcva.org Stewart Schwartz Coalition for Smarter Growth 202.244.4408 stewart@smarter growth.net

Background

We don't have to choose between courting growth and curbing sprawl. The market wants more alternatives to sprawl as changing demographics young professionals, empty nesters, retirees, and more and more families—are leading to greater demand for vibrant and walkable cities, towns, and suburbs built more like traditional towns and

Strengthen the partnership between state and local efforts to plan for the future and guide growth. Good planning is as important to our local communities as it is to successful businesses.

- Maintain and continue to implement Urban Development Area (UDA) planning and stop any further efforts to weaken the secondary street connectivity standards. These measures will help reduce statewide infrastructure costs and traffic congestion.
- Strengthen county implementation of UDAs through cooperation with nearby towns and cities, supporting interconnected streets and walkable community designs.
- Ensure property rights while saving tax dollars on infrastructure costs through Transferrable Development Rights (TDRs), Purchase of Development Rights, conservation easements and other tools.

Improve data collection on land development and infrastructure costs.

- Require local governments to estimate and report to the Commonwealth their projected population and employment growth as well as the buildout potential for residential units and commercial square footage under their existing comprehensive plan and zoning.
- Provide state funding and technical assistance to localities, including in measuring residential and commercial growth capacity of vacant and underutilized land in existing communities if (re)developed as compact, mixed-use, walkable development, as well as in estimating long-term infrastructure costs under current buildout projections and under alternative growth scenarios.
- The state and localities should work together to compile estimates of the total maintenance and replacement needs of bridges, roads, water/sewer, schools, libraries, and other facilities.

Target scarce public tax dollars. Prioritize state infrastructure funds to existing communities and UDAs, including economic development, transit/bike/pedestrian/local street investment, schools and water/sewer. Support the revitalization of cities, towns and older suburban communities.

Ensure new development pays a fair share of the costs of infrastructure. During the 2008 General Assembly session, homebuilders sought to significantly reduce contributions to the cost of infrastructure through proffers. The Virginia Association of Counties and the American Planning Association, Virginia Chapter, have argued for conversion to an impact fee approach. The General Assembly should undertake careful development before repealing the proffer system. While not without its problems, the proffer system has been successful in encouraging investment in a range of community benefits and was the product of intense negotiations between developers and local governments. A fair balance must be struck between what the public taxpayer and the private developer each pay toward the cost of infrastructure necessitated by new development. Impact fees must not be limited to education, roads, and public safety but should also cover a range of other community service such as parks and open space, water quality and water supply protections, libraries and other civic institutions. Finally, any system should be constructed so that it creates the incentive to develop within urban development areas.

Oppose actions that would weaken local community planning. Some groups want to weaken or eliminate the role of communities in planning together for the future. The General Assembly should reject efforts to diminish local planning efforts, including comprehensive plans and zoning ordinances that reduce infrastructure costs, protect open space, and encourage compact, walkable communities. Localities must be able to comprehensively adopt reasonable provisions to promote smarter growth, as well as to mitigate any undesirable impacts of facilities such as telecommunications and energy facilities. Existing local land use authority should not be eroded further and for major facilities the state should require comprehensive environmental assessments; studies of need, alternatives and location; consultation with local governments and residents, and context sensitive design.

TRANSPORTATION FUNDING

Statement of the Issue

Transportation funding and VDOT remain at the forefront of policy debates in Virginia. The governor's proposed \$4 billion funding package the General Assembly largely adopted in 2011, a multibillion backlog to fix structurally deficient bridges and repave highways, a drop in the state share of transit funding, and the need to identify a source of funds to operate passenger rail service are among the recent topics of debate. Elected and state officials acknowledge the need to reform VDOT, to better link land use and transportation to reduce the rising costs of transportation, and to provide funding for more transportation choices. Yet the state continues to focus heavily on highway construction and slights both transportation alternatives and land use impacts. This approach is costly to taxpayers, increases energy dependence, destroys natural and rural areas, spurs sprawl, increases air and water pollution, contributes to global climate change, and limits transportation choices, while doing little to relieve congestion in the long run.

Background

Transportation has been a central issue in General Assembly sessions for years, and some important provisions have been adopted that better link transportation and land use planning. Meanwhile, our transportation challenges are increasing. Gas prices are volatile, transit services have been cut and/or fares hiked, gridlock is getting worse, many existing roads and bridges are in poor condition, and transportation and land use decisions are rarely coordinated. Transportation is also the leading- and fastest rising- source of carbon dioxide in the state.

Virginia will spend billions of taxpayers' dollars on transportation this year. This spending and the long range transportation plan continue to focus overwhelmingly on roads. Evidence indicates that new and wider highways generate significant new traffic without providing long-term congestion relief because they cause development to spread out and the amount of driving to increase. Despite significant congestion within the metropolitan areas of the state, VDOT is advancing major rural highways and bypasses that divert scarce resources, increase sprawl, and fail to target areas of greatest need. In addition, VDOT's focus on privatizing highways and tolls is limiting input by the public and by public officials, undermining environmental review, slighting transit, and advancing unneeded projects and speculative development.



Governor McDonnell, Speaker Howell, and General Assembly members of both parties have recognized the need to reform VDOT and to improve our transportation policies. Some positive steps have been taken. But these are relatively minor steps in light of the magnitude of the problems we face, and any benefits they produce will be more than outweighed by proposed new highway projects.

TRANSPORTATION FUNDING CONTACTS

Trip Pollard Southern Environmental Law Center 804.343.1090 tpollard@selcva.org Stewart Schwartz Coalition for Smarter Growth 202.244.4408 stewart@smarter growth.net

TRANSPORTATION FUNDING RECOMMENDATIONS

Support a more balanced transportation system. Any legislation or budget provision that provides or relates to transportation funding should advance four key goals:

- First, use our resources more efficiently by focusing on repairing our existing transportation system and on improving local street networks before spending billions of dollars on major new roads.
- Second, shift funding to alternatives to driving, such as public transit, passenger and freight rail, transit-oriented development, walking, and bicycling. These alternatives are cheaper and can reduce congestion, energy consumption, and pollution; moreover several provide better services for elderly, disabled, and low income citizens. Providing new funds and flexing existing funds to passenger and freight rail improvements in the I-95, I-81, and I-64 corridors should be a particularly high priority.
- Third, tie transportation funding to measurable performance criteria, such as reduced air pollution from vehicles and reduced per capita vehicle miles traveled.
- Fourth, transportation funding allocation formulas need to be changed from a single statewide formula in order to give regions flexibility to determine the funding levels for various transportation modes above certain minimum levels that best meet their needs.

Provide dedicated funding for passenger rail. A dedicated source of funding should be provided for the Virginia Intercity Passenger Rail Operating and Capital fund the Assembly created in 2011. Other changes may be needed to ensure or enhance Virginia's ability to qualify for federal rail funds.

Support transportation process reform. There have been numerous efforts in recent sessions to reform various aspects of state transportation planning. Any action that will reduce the environmental impacts of transportation projects, enhance public involvement in planning, improve the Public Private Transportation Act, or seriously reform VDOT planning and CTB oversight should be supported.

Support stronger performance standards for transportation planning. Expand requirements for the development of performance standards and require VDOT and large metropolitan areas to meet measures that include reduction in per capita vehicle miles traveled and increased mode share for transit, carpooling, walking, bicycling and telecommuting.

Support improving the link between transportation and land use, and providing incentives for smarter growth. Potential measures include: target transportation spending to existing communities and congested areas, tie transportation funding to land use changes that reduce travel demand, target economic development assistance to existing communities and locations with adequate preexisting transportation infrastructure, work with localities to conduct build-out analyses of their land use plans, and provide technical assistance to localities to promote transit-oriented development. Any effort to weaken or rollback recent reforms should be opposed.

PUBLIC-PRIVATE TRANSPORTATION ACT

Statement of the Issue

Virginia's Public-Private Transportation Act of 1995 (PPTA) has become increasingly central to the Commonwealth's transportation program. The PPTA allows private entities to enter into agreements with VDOT to construct, improve, maintain, and operate transportation facilities. Yet experience with PPTA projects and proposals indicates that the statute is seriously flawed and raises significant doubts about how effectively it serves the public interest.

Background

The PPTA is designed to facilitate private investment in public infrastructure and transportation facilities. It allows both solicited and unsolicited proposals, and is viewed by its supporters as a way to make needed improvements and additions to the state transportation system sooner, more cheaply, and more efficiently than with public funds alone. Projects undertaken so far under the PPTA or its predecessor include the Dulles Greenway, Route 28 interchanges, 495 HOT lanes in Northern Virginia, the Pocahontas Parkway (Route 895) and Route 288 in Richmond.

There are numerous additional PPTA proposals currently underway or under consideration by VDOT. The McDonnell Administration has created a PPTA Office, directed some multimodal funds to this office, and made it clear that it views the PPTA as a key element of its strategy for delivering new transportation projects. The governor's proposed multi-billion dollar transportation package the General Assembly largely adopted in 2011 and the most recent Six Year Improvement Program adopted by the Commonwealth Transportation Board contained about \$1.5 billion for PPTA projects.

The track record of PPTA projects thus far calls into question the claims made on behalf of the statute. Among other things, potential costs and liabilities taxpayers have often to been underestimated or not provided to the public. Hundreds of millions of tax dollars are being poured into the Capital Beltway HOT project, for example, which was originally projected to cost taxpayers little or nothing. Similarly, Star Solutions' public pronouncements significantly understated the true cost of its proposal to double the size of I-81. In addition, in the past, bonds for the Pocahontas Parkway were downgraded and placed on a watch list by credit agencies since traffic and toll revenues have been lower than expected.

Although the PPTA could be an innovative tool for getting transportation projects funded and built, there are many problems with the Act and its implementation, including concerns that:

• It undermines sound transportation planning by advancing projects that are not high priorities for the public, moving proposed projects to the head of the list of projects under consideration and making a claim on state revenues at the expense of other projects.



- Opportunities for public input into the PPTA process are limited.
- Environmental review of proposals is circumvented or undermined, among other things due to the prioritization and advancement of a proposal before alternatives have been evaluated.
- Requirements for competitive bidding are inadequate, and have allowed a project

Support PPTA reform. Legislation to improve the PPTA is needed and should be supported. Potential measures include:

- Limiting proposals under the PPTA to projects contained in state transportation plans and to projects with complete, independent environmental studies.
- Requiring greater public and local government input into each proposal (such as traditional public hearings at an early stage of review and a hearing before an agreement is signed).
- Requiring approval of PPTA proposals by the Commonwealth Transportation Board.
- Redefining the process to ensure that bidding is competitive, including requirements for national advertising and a longer response period.
- Giving priority to proposals that include significant private sector equity contributions and to proposals that retain public control of any public asset involved.
- Requiring evaluation of the impacts of proposed projects on land development patterns.
- Requiring projects to incorporate context sensitive design, pedestrian and bicycle facilities, low impact development, and other measures to avoid and minimize adverse environmental impacts in the construction and operation of a project.

Oppose additional taxpayer funding until the PPTA is reformed. The General Assembly should not provide any additional funds for specific projects or for the Transportation Partnership Opportunity Fund it created to support PPTA projects until the PPTA is reformed. Moreover, project developers should not be allowed to receive anticipated future general fund revenues under any circumstance.

proponent or bidder in the first phase of a proposal to establish a sole-source arrangement for later phases.

- Applicants have failed to disclose all necessary information about costs and design, and in the agreement for the Dulles Rail PPTA project, applicants secured the right to destroy information after the project is completed.
- There has been a lack of information about potential costs to taxpayers and potential risk to the state's bond rating, despite recent amendments to the statute aimed at addressing this.
- It creates incentives for sprawl, driving, and environmental damage. The primary concern of PPTA developers is maximizing profit, not the public interest. For example, the previous owner of the Pocahontas Parkway supported a massive new development and an additional interchange

that would increase the amount of traffic (and revenue) on the highway. Most PPTA projects built or proposed thus far have been highway construction that will subsidize sprawl and increase motor vehicle dependence, destroying open space and increasing air and water pollution.

PPTA CONTACT

Trip Pollard Southern Environmental Law Center 804.343.1090 tpollard@selcva.org

INTERCITY PASSENGER RAIL

Statement of Issue

Increased congestion on our roads and in our airways, vulnerability to volatile fossil fuel prices, dependence on foreign oil, and air and water pollution are just some of the problems with our current transportation system that have led many local, state, and federal officials to endorse more sustainable transportation options. Rail plays a critical part in a more sustainable transportation approach, and increased freight and passenger capacity can help maximize the energy efficiency and competitiveness of Virginia's economy, especially in corridors where additional highway projects are prohibitively expensive and/or environmentally detrimental.

High speed intercity passenger rail could link metro regions under 500 miles apart, with commuter and regional passenger rail feeding those regions and public transit serving those regions, giving people alternatives to driving in and between Virginia's metro areas.

The public demand for improved intercity passenger rail is reflected in the increased ridership on both Amtrak and Virginia Railway Express, as well as the high demand for public transit connections to Virginia's passenger trains. Ridership on Amtrak in Virginia exceeded a million riders for the first time in 2008 and grew 25.35% between 2007 and 2010. Moreover, ridership on Virginia's regional trains grew by more than 20% this fiscal year. Virginia Railway Express, the Commonwealth's commuter rail service, saw its ridership grow by nearly half a million riders and exceed 20,000 daily passengers for the first time in its 20 year history during the current fiscal year. Further, a recently launched bus connection between Roanoke and Virginia's Lynchburg regional train is handling five times as many passengers as originally anticipated.

Background

In 1992, the United States Department of Transportation (USDOT) designated five high speed rail corridors, including the Southeast High Speed Rail Corridor, which extended from Washington, D.C. to Richmond, Virginia to North Carolina and Georgia. In 1996, the USDOT added a high speed link to Hampton Roads, and rail other modifications have been made to the Southeast High Speed Rail Corridor while other corridors have been identified. However, due to a lack of federal investment, there had been no significant progress made towards the advancement of high speed rail outside of the Northeast Corridor. This changed with the passage of the Passenger Rail Investment and Improvement Act (PRIIA) in late 2008, which created the framework for federal investment in high speed rail and authorized about a billion dollars over six years for high speed rail.



The American Recovery and Reinvestment Act (ARRA) provided \$8 billion for high speed rail, and Virginia received \$75 million for passenger rail improvements to the Washington-Richmond corridor. Congress then included an additional \$2.4 billion for high speed rail in their FY 2011 federal transportation appropriation, of which Virginia received \$44.3 million complete to the environmental process on the Washington-Richmond corridor.

Federal guidelines require that states who receive high speed rail funding locate a long-term,

PASSENGER RAIL RECOMMENDATIONS

- Provide a dedicated, long-term, sustainable funding source for the Virginia Intercity Passenger Rail Operating and Capital Fund that will allow the Commonwealth to sustain our current services, invest in our rail infrastructure, and match any federal funds that might become available.
- Articulate a long-term vision that integrates intercity rail, freight rail, public transit, roads, and airports to create a sustainable multi-modal system for Virginia's future.

sustainable funding source for passenger rail operations.

Today, Virginia sponsors one daily roundtrip Amtrak regional train along the Piedmont Corridor (Lynchburg, Charlottesville, and Manassas) and one along Virginia's Golden Crescent (Alexandria, Fredericksburg, Richmond, and eventually Norfolk) corridor under a three year demonstration project that ends in October of 2012. In 2013 Virginia will also be required to take over the operational costs of the two Amtrak regional trains serving Williamsburg and Newport News, as well as the two regional trains that initiate and terminate from Richmond's Staples Mill Station in addition to the two daily services it already supports.

However, Virginia does not have a dedicated, long-term, and sustainable funding source to pay for passenger rail operations, which are estimated to cost about \$30 million annually. This lack of funding leaves Virginia vulnerable to losing part or all of its regional passenger rail service.

Nor does Virginia have an adequate mechanism for capital investments in passenger rail. Virginia is investing over \$200 million in state and federal funds to add capacity between Washington and Richmond and to extend Amtrak regional service between Richmond and Norfolk by 2013. Some of the resources currently being invested have come from Virginia's Rail Enhancement Fund- a dedicated source of money for rail infrastructure that receives about \$21 million annually from the car rental fee, but has a 30 percent match requirement. There currently is no state mechanism to match federal funds with Virginia Rail Enhancement Funds, nor fund the operation and expansion of intercity and high speed passenger rail service.

Realizing the need for funding for Virginia's intercity passenger rail trains, the General Assembly requested that Virginia's Department of Rail and Public Transportation review and recommend funding ideas to ensure the continued operation of Virginia's passenger trains. The study led to the Virginia General Assembly creating the Virginia Intercity Passenger Rail Operating and Capital (IPROC) fund in 2011. However, IPROC lacks any dedicated funding source. Funding is needed to begin to answer the question of how Virginia will keep its regional trains operating, match federal intercity and high speed passenger rail funds, and expand regional passenger rail service.

PASSENGER RAIL CONTACTS

Trip Pollard Southern Environmental Law Center 804.343.1090 tpollard@selcva.org

Daniel Plaugher Virginians for High Speed Rail 804.864.5193 vhsr@earthlink.net

LAND CONSERVATION

Statement of the Issue

Successful land conservation requires action and initiative at all levels that is geared toward the protection of a diversity of lands. State agencies, local communities, and private individuals need the right tools to protect working farms and forests, scenic landscapes, natural areas, wildlife habitat and game lands, historic resources, and parks and recreational areas for present and future generations of Virginians. Virginia currently has a variety of programs and approaches that deliver lasting results across the Commonwealth: the Virginia Land Preservation Tax Credit program, state matching funds for local purchase of development rights programs through the Virginia Department of Agriculture and Consumer Services Office of Farmland Preservation, and competitively awarded land preservation funds from the Virginia Land Conservation Foundation.

Without significant and reliable funding for these programs, Virginia will not achieve conservation results at a large enough scale to: maintain the quality of life that attracts businesses and tourists to the Commonwealth, conserve the land base which supports our two largest industries—forestry and agriculture—meet its commitment to restore the Chesapeake Bay, access available federal and private conservation dollars that require matching funds, and ensure that future generations can enjoy the beautiful, diverse Virginia that we know today.

Background

If current trends continue, over the next 40 years Virginia will lose as many acres of farms, forests, and natural lands to development as have been lost in the 400 years since the Commonwealth was settled by Europeans. We are now losing rural land at more than two times our rate of population growth. Vitally important prime farmland is being consumed at the greatest rate, with forestland loss close behind. In addition, we are regularly losing irreplaceable, critical wildlife habitat, important historic sites, and economically valuable scenic resources. Virginians have said repeatedly in surveys, polls, and at the ballot box that they are willing to invest in the protection of open space. Unfortunately, the Commonwealth has failed to consistently provide adequate funding to protect our most important natural, cultural, and historic resources for the benefit of future generations.

Land Preservation Tax Credit

The Land Preservation Tax Credit is Virginia's most successful, dependable land conservation funding program and is one of the best land conservation tax incentive programs in the nation. This program is an efficient and effective way to encourage private voluntary land conservation by providing taxpayers who make gifts of land or conservation easements tax credits equal to 40% of the value of their donated interest. Landowners with lower incomes who are unable to use all of their tax credits may transfer unused but allowable credits to other taxpayers. Before the implementation of the tax credit, just 19 counties had more than 1,000 acres of land protected by conservation easements. Just ten years after implementing this program, that number has rocketed to more than 80 localities with more than 1,000 acres of land protected by conservation easements.

An examination of the donated conservation easements demonstrates that the LPTC program is protecting critically important lands across the Commonwealth. For example, an analysis of the more than 725,000 acres of conservation easements in Virginia shows that:

- 350,000 acres (48%) are acres which are identified by the Department of Conservation and Recreation as ecological core habitat;
- 420,000 acres (60%) are forested lands;
- 219,000 acres (30%) are protecting nationally identified prime agricultural soils;
- over 624,000 acres (86%) are within the Chesapeake Bay watershed and add to the Commonwealth's commitments under the Chesapeake Bay 2000 Agreement;
- 136,000 acres are protecting corridors along state designated Scenic Roads; and
- over 97,500 acres of these protected lands are within state and nationally designated historic districts.

This program is an efficient and effective way for Virginia to encourage private landowners to conserve the most important lands in the Commonwealth. The land conservation community

LAND CONSERVATION RECOMMENDATIONS

Virginia needs to make a substantial financial commitment to land conservation by:

- Continuing the Land Preservation Tax Credit Program in its current form.
- Allocate \$11M per year over the next two years for the State Office of Farmland Preservation's matching fund for local PDR programs.
- Allocate \$31.5M per year over the next two years for the Virginia Land Conservation Foundation.

strongly recommends that the General Assembly make no changes that would reduce the impact and availability of this important land conservation tool.

Purchase of Development Rights Programs

In 2007, Virginia made a commitment to working farms and forestland through an investment of \$4.25 million for farmland preservation at the local level. Localities responded to the state investment by pledging 10 times the amount in matching funds, totaling \$45 million.

The original \$4.25 million investment by the Commonwealth will preserve farmland in 14 localities in Virginia. Since these matching funds became available, 20 localities have adopted local PDR programs. There are now 20 localities that realize the importance of preserving working farmland in Virginia. In order for these localities to keep the PDR programs strong; reliable and consistent funding is needed to maximize the potential of this conservation partnership.

In 2005, the Virginia Farmland Preservation Taskforce set a goal of establishing 30 PDR programs in Virginia by 2010. The taskforce also set a funding goal of \$30 million per year in farmland preservation funding. For the 2011-2012 biennium, Virginia invested \$1.2 million in matching funds for local purchase of development rights programs.

The Commonwealth needs to support its partnership with localities to conserve working farm and forest land through continued consistent funding of local purchase of development rights programs. It is critical that in these difficult financial times, the state continue to make investments in PDR funding to ensure that the Commonwealth's largest industry agriculture and forestry—continue to have the land on which to operate. The matching PDR program requires counties to match dollar for dollar the amount that is granted to them by the Commonwealth. Virginia is receiving at least a 50% return on its investment. For the next biennial budget, the governor and General Assembly should allocate \$11M per year to this program in order to achieve the governor's 400,000 acre land conservation goal. Long term, in order to meet program demand and best preserve incomparable natural resources, the Commonwealth should invest \$30 million annually in the Office of Farmland Preservation's state PDR program.

Virginia Land Conservation Foundation

The VLCF provides state matching grants for the preservation of various categories of special lands in the Commonwealth. These grants are awarded on a competitive basis for the protection of open spaces and parks, natural areas, historic areas, and farmland and forest preservation.

This highly effective program leverages local and federal investment for natural resource conservation by paying no more than 50% of the cost of worthy projects. Grant applications to the VLCF program have consistently far exceeded available funds. Since FY 2000 over \$82 million of grants have been requested of the program while only \$28 million have been available. This represents a lost opportunity for the Commonwealth to capture more than \$50 million in federal, local, and private matching dollars for land conservation.

VLCF was allocated a total of \$4 million over the 2009-2010 biennium, and just half of that for the 2011-2012 biennium. For the next budget, the governor and General Assembly should allocate \$31.5M per year in order to achieve the governor's 400,000 acre land conservation goal.

LAND CONSERVATION CONTACT

Heather Richards Piedmont Environmental Council 540.347.2334, ext. 23 hrichards@pecva.org

CIVIL WAR BATTLEFIELD PRESERVATION

Statement of the Issue

The Sesquicentennial Opportunity

Virginia's abundance of genuine history makes it one of the principal heritage tourism destinations in the United States. With 125 major Civil War battlefields scattered throughout the Commonwealth, its Civil War history ranks second to none. Whether they are Civil War buffs, history enthusiasts or casual visitors, tourists flock to Virginia's Civil War battlegrounds to achieve a great understanding of this critical chapter in the American story. The 150th anniversary of the Civil War provides the impetus for modest investments today to ensure that battlefields escape development and remain accessible to Virginians and tourists 150 years from now.

Background

Tourists Seek Authenticity: Virginia Delivers

The key to successfully courting heritage tourists is to preserve and enhance Virginia's rich and equally authentic Civil War legacy. According to the Virginia Tourism Corporation, visitors to the state's Civil War sites stay longer (3.6 nights versus 2.1 nights) and spend more money (\$311 per visit versus \$145 per visit) than the average visitor to the Old Dominion. They do so because they want to be in the places where our nation's Civil War history took place, and to walk in the footsteps of the Americans who fought and lived here. The Virginia Sesquicentennial of the American Civil War Commission, the best of its kind in the country, recognizes this connection between tourism and historic preservation, and has made battlefield conservation a major part of the state's 150th anniversary commemoration.

Despite the considerable progress that has been

made over the last decade, the Civil War Trust believes there are nearly 50,000 acres of highly significant unprotected battlefield land in Virginia that could be Sesquicentennial preserved during the commemoration. Much of this land is located in Culpeper, Dinwiddie, Hanover, Henrico, Orange, Prince William and Spotsylvania counties, as well as in the Shenandoah Valley. Due to their location in growth areas, the fate of many of these vulnerable sites could be decided before the conclusion of the Sesquicentennial in 2015. Further, because they are centered on the I-95 cities of Fredericksburg, Richmond, and Petersburg in the east and the I-81 corridor in the Valley, these battlefields are readily accessible to millions of interstate travelers who currently pass through the Commonwealth without stopping.

Lasting Legacy of the Sesquicentennial

The Virginia Civil War Sites Preservation Fund was created in 2006 for the purpose of awarding grants to private nonprofit organizations to preserve endangered Virginia Civil War historic sites. It is the result of bipartisan cooperation between the governor and leaders in the General Assembly. Since the program's inception, its funding has helped to preserve more than 1,800 acres throughout the state. At \$2,800 per acre preserved, the Fund was a bargain for Virginia taxpayers, especially given that most of this land is in rapidly-developing, highgrowth corridors. The Fund was formally codified in early 2010 by unanimous passage of legislation by both chambers of the General Assembly. Governor McDonnell joined with Speaker Bill Howell, Senator Edward Houck and Delegate Chris Peace to sign the bill into law on the Chancellorsville Battlefield, April 20, 2010.

A Public-Private Partnership for Preservation

Land conservation initiatives such as the Land Preservation Tax Credit program, purchase of development rights, and the Virginia Land Conservation Foundation are important tools for preserving battlefield land. The Virginia Civil War Sites Preservation Fund is a complement for those programs.

The fund is an excellent example of public-private partnership as it requires a 1-1 match in order for state funds to be expended – thereby increasing the return on the state's investment. The program provides funding for fee-simple acquisitions and

BATTLEFIELD PRESERVATION RECOMMENDATIONS

To capitalize on the increased national attention the Sesquicentennial will bring to Virginia's battlefields, VCN member organizations propose that the Commonwealth adopt a "Virginia Civil War Sesquicentennial Initiative." Seizing this opportunity to save threatened battlefield land will enhance the tourism potential of the Commonwealth's Civil War resources.

The cornerstone for such an initiative would be the allocation of \$2.5 million a year for the successful Virginia Civil War Sites Preservation Fund in each of the next two fiscal years.

In addition, the state should not authorize the sale of lands at Fort Monroe until the Master Plan is complete. Any future sales should be compatible with the Master Plan.

"By protecting these battlefields, we are also protecting wildlife habitats and water quality ... creating open space for community recreation [or] protecting valuable working farm-

> —Virginia Secretary of Natural Resources Douglas Domenech Chancellorsville, April 2010

conservation easements on priority Civil War battlefields in the Commonwealth.

Grants are competitively awarded by the Virginia Department of Historic Resources to nonprofit organizations that can move quickly to preserve key unprotected properties, working with willing sellers. Nonprofit groups that have benefitted from the program are the Civil War Trust, the Central Virginia Battlefields Trust, the Richmond Battlefields Association, the Shenandoah Valley Battlefields Foundation, and the Trevilian Station Battlefield Foundation.

All signs indicate that the upcoming Sesquicentennial will draw to Virginia tourists from across the United States, hungry for the authenticity provided by our state's numerous well-preserved Civil War battlegrounds. By acting now to ensure that those remaining blood-soaked fields are set aside for posterity, we will also ensure that tourists to the Old Dominion—both those visiting for the Sesquicentennial and beyond—enjoy the same unparalleled experience.

Supporting the Chesapeake Bay and Preserving Farmland

As nearly all of the land protected by the Virginia Civil War Sites Preservation Fund is located within the Chesapeake Bay watershed, it delivers multiple benefits for the Bay's endangered natural resources as well as Virginia taxpayers, farm landowners, and communities in the watershed.

Much of the preserved land remains in agricultural production as it was during the Civil War. For example, in the Shenandoah Valley, most of the 3,000 acres protected so far by the Shenandoah Valley Battlefields Foundation, the Civil War Trust, and other partners continues to contribute to the Valley's strong but threatened agricultural economy. Implementation of agricultural best management practices for this land ensures that adjacent waterways in the Bay watershed are protected. And key preserved sites will be opened to the public in the coming years to draw more visitors and educate future generations about our nation's history.

Protecting Virginia's irreplaceable battlefield land not only preserves touch points of our nation's history, it enhances water quality in our communities and in the most important estuary in the eastern United States, and it supports agriculture and tourism, Virginia's two largest economic drivers.

land."

A Success Story at Fort Monroe

A six-year citizen effort to establish a national park unit at Fort Monroe, on Old Point Comfort in Hampton, succeeded on November 1, 2011, when President Obama signed a proclamation declaring 325 acres of Fort Monroe as Fort Monroe National Monument. This was President Obama's first exercise of his powers under the Antiquities Act of 1906, and was accomplished by a remarkable coalition of Republicans and Democrats, citizens and political leaders, and non -profits and the business community. Most critical were the strong support and efforts of Governor Bob McDonnell, Hampton Mayor Molly Ward and Citizens for a Fort Monroe National Park (CFMNP). The President's action was remarkably timely, as it came only 45 days after the Army garrison departed Fort Monroe.

While the National Monument is a major step forward, the effort to preserve and sustain all of Fort Monroe has a long way yet to go. In 2010, the General Assembly amended the governing Fort Monroe legislation, at the behest of citizens, to discourage any sale of Fort Monroe lands to private parties. The state statute, as amended, requires approval of both the governor and the General Assembly to sell any lands at Fort Monroe to private parties. This provision assured the public that state-controlled Fort Monroe lands may only be sold off after great deliberation and manifest need was demonstrated, and comported with state policy to maintain public control over all the precious acreage at this national treasure on the Chesapeake Bay.

There will, however, likely be an effort to relax the land sale provision in the upcoming General Assembly. Citing anticipated difficulties in generating sufficient revenues to cover costs on the remaining state-managed Fort Monroe lands, the Fort Monroe Authority will likely seek to eliminate the requirement for General Assembly



approval of land sales. Citizens, including CFMNP, oppose such a change because planning for the just established National Monument and development of a master plan for remaining state lands has not yet begun, and it is premature to concede that financial sustainability of state-managed lands cannot be achieved without fee simple sales. Further, sales may limit the potential of or even damage the National Monument, by inserting new privately owned development in between its predominately historical and natural areas, while precluding the ability of the National Monument to grow in future years.

BATTLEFIELD PRESERVATION CONTACT

Jim Campi Civil War Trust 202.367.1861 jcampi@civilwar.org





CLEAN ENERGY

Powering Virginia's Future

SOLAR ENERGY

Statement of Issue

Solar energy is the fastest growing industry in the U.S., yet it makes up much less than one percent of Virginia's electricity supply. According to a study by Virginia Tech in 2005, Virginia could meet 16-19% of its annual electrical energy demand with rooftop photovoltaic power alone.¹ Exploiting this potential would create jobs and attract new business to the Commonwealth, in addition to providing our residents with the health and environmental benefits of clean energy.

Virginia should set ambitious but achievable goals that will make solar power—in all its forms, including small and large solar photovoltaic (PV) systems and solar hot water technologies—a significant portion of Virginia's energy economy. With the right policies in place, Virginia could install 2,000 MW of solar photovoltaic capacity by 2030, powering 50,000 homes and businesses.

The central challenge that has prevented solar power from becoming a more substantial component of Virginia's energy economy is the upfront investment coupled with a lack of understanding of the long-term benefits of solar. However, targeted incentives, rebates, tax credits and local real estate tax exemptions have proven to be effective in multiple states in stimulating high-volume solar installments at very attractive payback rates.

In addition to offering financial incentives, Virginia should adopt regulations that encourage third -party financing, and should reject utility efforts to impose burdensome stand-by charges. A streamlined and standardized permitting process would lower installation costs. Finally, demand could be increased through opening up the state's "green power" program to competition, encouraging providers to offer customers in-state solar and wind energy in place of existing utility programs that offer only renewable energy certificates purchased from out of state.

Background

According to the Solar Energy Industries Association, solar energy is currently the fastest-growing industry in the country, with a work force of over 100,000 Americans. The price of solar energy has also declined steeply in recent years, and is forecast to continue this trend. But solar photovoltaic electricity is still more expensive than existing fossil fuel sources in Virginia, and our lack of solar incentives means local companies are struggling. Consequently, we are losing the race for new jobs and economic development in this growing market to neighbor states. New Jersey, Pennsylvania, North Carolina, Tennessee, Maryland and D.C. all have in place stronger solar incentives that lower costs, create jobs and draw in new business.

Rebate programs, tax credits and grants are proven mechanisms that increase solar investments by home and business owners. North Carolina has enacted a 35 percent tax credit for both commercial and residential solar, in addition to rebate programs and incentives and a solar carve-out as part of a mandatory renewable portfolio standards. As a result, Duke Energy has already invested in more than 27 megawatts of solar power in the state, enough for over 3900 homes.

Other states have also been aggressive. Maryland's solar requirement has brought its total installed solar capacity to 10.9 megawatts, more than three times that of Virginia, at 2.8. As of mid-2011, New Jersey's solar mandate has already resulted in more than 10,000 solar installations totaling over 380 megawatts, according to the state's Board of Public Utilities.

Businesses within the solar industry have said they are eager to locate and grow in states that

SOLAR ENERGY RECOMMENDATIONS

The General Assembly should establish a mandatory renewable portfolio standards (RPS) to recognize the benefits of clean energy to the state and rewards investments in solar. In the absence of a mandatory RPS, however, there remain a number of steps the Commonwealth can take that will encourage the growth of solar energy:

- Adopt incentives in the form of tax credits to incentivize/subsidize solar development and installations on commercial and residential homes.
- Lower installation costs by creating a model permitting process and encouraging localities to adopt it • statewide.
- Create a true "green power" program for utility customers by encouraging providers of solar and wind en-• ergy generated within Virginia to compete with utilities that currently offer only renewable energy certificates representing energy generated outside the state; and if necessary, clarify that such competitive green power may provide all or only a portion of the customer's total electric demand.
- Ensure that any "stand-by" charges imposed by utilities on owners of solar arrays reflect a full cost-benefit • analysis, weighing additional utility infrastructure costs against the benefits to utilities and ratepayers from solar distributed generation, including the value of peak generation, reduction of transmission costs, and reduction of pollution.
- Amend the state's existing voluntary renewable energy standard to include more power from solar and • wind energy generated within Virginia. (See the white paper on the Renewable Portfolio Standards.)
- Authorize the State Corporation Commission to consider external costs of fuel sources, such as health and • environmental impacts, to level the playing field for alternative fuel sources like solar.
- Similarly, ensure that the State Corporation Commission and Virginia's investor-owned utilities fully consider • the monetary benefits to consumers of the price stability of renewable energy versus the price volatility of non-renewable energy.

incentivize solar energy through renewable portfolio standards, as well as laws that practices on permitting, interconnection, and net-



mandatory allow third-party financing and follow industry best metering. In the absence of a mandatory renewable portfolio standard, then, Virginia must develop aggressive incentives, tax credits, rebates and grant programs to demonstrate our commitment to solar technology, and must remove barriers to growth.

> 1. www.energy.vt.edu/Publications/Incr_Use_Renew_Energy_VA _rev1.pdf

SOLAR ENERGY CONTACTS

J.R. Tolbert Sierra Club 804.225.9113 xtn. 112 jr.tolbert@sierra club.org

Ivy Main Sierra Club 703.448.7618 ivymain@cox.net

FARM AND COMMUNITY NET METERING

Statement of the Issue

"Net metering" is shorthand for a legislatively imposed policy requiring utilities to offer an electricity purchase program to customers who have their own (usually renewable) generating facility. In simple terms, when a generating facility produces more power than the customer is using, their meter will run backwards because they are putting power into the electric grid rather than removing it.

An agricultural and community net metering law would allow a family farm with multiple meters to aggregate those meters and provide power back to the grid.

Background

Under both federal and Virginia law, a distribution utility must permit a customer generator to interconnect with the local utility and the utility must purchase excess power generated by the customer. HB 441 was introduced in last year's legislative session by Delegate David Toscano. The bill sought to extend net metering from individual customers to eligible community customers and agricultural net metering facilities, neither exceeding two megawatts.

To qualify as agricultural net metering facilities under last year's legislation, the renewable generating facility must have been operated as a part of an agricultural business and have been on land owned or controlled by the agricultural business. The

bill would have permitted multiple meters and multiple sites to aggregate their usage as part of the net metering agricultural facility. For example, this could allow a farm with an ideal location for a solar array to be connected to neighboring farms that lack access to adequate solar exposure and the group would be tied together for net metering purposes. The bill also made eligible a community customer acting on behalf of a group of customers to act collectively to operate a renewable generating facility that would combine their meters to take advantage of a renewable facility. Simply put, HB441 allowed neighbors to join together and share both the cost and benefits of a small renewable energy facility. Current law wouldnot permit a facility to be connected across property lines.

The State Corporation Commission is holding proceedings to determine the reasonableness of the methodology for determining stand by charges for customer generators with systems larger than 10 kilowatts, including renewables. These proceedings must conclude by December 1, 2011.



NET METERING RECOMMENDATIONS

Some energy providers operating in the Commonwealth have resisted expansion of the net metering provision, claiming no benefit to the grid and citing the cost of interconnection and use of their transmission/distribution network. In response to concern from the utilities, there are plans to reintroduce some form of a net metering bill that would allow for a more gradual transition to community scale net metering while accomplishing the agricultural portion upfront. The new bill would allow for a single farm with multiple meters to aggregate those meters and provide power back to the grid. Community based projects (those with multiple owners) would be placed into a pilot program that would provide study findings at the end of the pilot. It is anticipated that anywhere from three to five pilot projects would be sought.



NET METERING CONTACTS

Dan Holmes Piedmont Environmental Council 571.213.4250 dholmes@pecva.org J.R. Tolbert Sierra Club 804.225.9113 xtn. 112 jr.tolbert@sierra club.org

OFFSHORE WIND ENERGY

Statement of the Issue

The United States is one of the largest consumers of energy in the world. According to the U.S. Department of Energy, 83 percent of energy used during 2009 came from fossil fuels. This staggering reliance on fossil energy exacerbates global warming, undermines our national security, and holds our economy hostage to commodities beyond our control. According to the Virginia Energy Plan, Virginians rely on fossil fuels for more than 60 percent of our electricity and 75 percent of total residential energy use. In the transportation sector, reliance on fossil fuels jumps to 97 percent.

The over consumption of energy poses serious risks to Virginia's communities and environment, from rising seas in Hampton Roads to mountaintop removal coal mining in Southwest Virginia. Our addiction to fossil fuels is an unsustainable path.

With the 4th largest wind capacity potential along the east coast, Virginia has an opportunity to move in a new direction. By aggressively improving energy efficiency and tapping our capacity for renewable energy we can move toward a future powered by clean renewable energy. Investing in renewable electricity now is all the more important if automobiles and mass transit are to migrate onto the grid (and off foreign oil) in the foreseeable future.

Offshore wind is one of the best ways for us to move away from fossil fuels. According to the National Renewable Energy Laboratory, Virginia's total offshore wind resource exceeds our entire energy demand. In the near term, wind power off of our coast can provide up to 10 percent of our energy needs, according to a recent study by the Virginia Coastal Energy Research Consortium (VCERC). We have the resources, but now we need the action of our government officials to make it a reality. The Cape Wind project off the coast of Massachusetts took 10 years to permit and will take another two to construct. Meanwhile, Europe has been operating offshore wind farms for almost two decades and China recently brought their first project online. The U.S. is falling behind; but projects off Virginia's coast could easily make our country a leader in offshore wind.

Background

Virginia needs to consume less energy overall and generate more energy from renewable sources. In order to meet our future energy needs without causing environmental harm and health problems for our citizens, we must act quickly.

All energy production has environmental consequences, and renewable energy facilities should be subject to environmental impact assessments consistent with other types of infrastructure and subject to scientific monitoring post construction. Virginia can develop renewable energy responsibly.

Virginia should move now to capitalize on the significant potential for offshore wind energy. In addition to these already available technologies, the state should act to bolster research and development for offshore wind. The latest study from VCERC shows there is over 3,000 megawatts of offshore wind capacity in shallow waters in less than 30 meters in depth. VCERC studied an area about the size of Virginia Beach located twelve miles off the coast. Additionally, Trans-elect, with financing from Google, is developing an offshore backbone transmission line that would run from Virginia to New Jersey under the ocean seabed connecting offshore wind farms along the coastline to the power grid for great access. In the future, improvements in technology and the development of deepwater turbine foundations will further increase the available supply of energy from offshore wind.

Not only is offshore wind abundant, it is competitive. VCERC concludes that offshore wind costs are equal to or better than new nuclear or coalfired generation. Furthermore, unlike fossil fuel sources, offshore wind operating costs are not subject to fluctuations in fuel prices, or to likely increases in costs due to pollution, as will likely result from future carbon restrictions and/or tighter controls on conventional pollutants.

Finally, by investing in offshore wind, Virginia stands to see economic gains in the form of new jobs

OFFSHORE WIND RECOMMENDATIONS

The General Assembly should establish a mandatory renewable portfolio standard (RPS) to recognize the benefits of clean energy to the state and reward investments in offshore wind. In the absence of a mandatory RPS, however, there remain a number of steps the Commonwealth can take that will encourage the growth of renewable energy:

- Amend the state's existing voluntary renewable energy standard to include more power from solar and wind energy generated within Virginia. (See the white paper on the Renewable Portfolio Standards.)
- Continue funding the Virginia Coastal Energy Research Consortium to investigate the state's coastal and offshore renewable resources potential and to assist regulators, private sector investors, local governments and the Department of Defense.
- Authorize the State Corporation Commission to consider external costs of fuel sources, such as health and environmental impacts, to level the playing field for alternative fuel sources.
- Similarly, authorize the State Corporation Commission to consider the benefits to consumers from the price stability and economic development that renewable forms of energy provide.

from manufacturing and installing wind turbines, which are costly to transport. VCERC estimates that a "phase one" development of 500 to 600 megawatts off Hampton Roads would create over 1,000 high-skill jobs. The ship-building trades already based in Hampton Roads, coupled with the region's port infrastructure, make it an attractive location to base wind-energy manufacturing to serve the Eastern Seaboard. In October 2010, Northrop Grumman announced a partnership with Spanish firm, Gamesa, one of the world's largest wind turbine manufacturers, to design and develop the next generation of wind turbines, creating 44 engineering positions in Hampton Roads. A joint venture with Poseidon Atlantic, Fugro and other partners was announced in October 2011 to develop a wind turbine test certification center on Virginia's eastern shore. According to their press release, this site will be the first of its kind in the U.S.

In 2010, The Virginia Offshore Wind Development Authority was created by the General Assembly to assist development of an offshore wind industry in Virginia. While this move is a step in the right direction, Virginia needs to do more to show we are serious about developing offshore wind.

Currently Virginia has only a relatively weak, voluntary renewable energy goal of 15 percent of non-nuclear electric generation by 2025, which translates into about 10 percent of total electric generation by that date. With offshore wind eligible for triple credit, the goal could actually be satisfied with less than five percent of our total electricity coming from renewables. This is one of the weakest renewable energy targets in the nation, and falls far short of what Virginia can attain. As a result, manufacturers and installers of renewable energy are less confident locating businesses in the state, and those renewable energy generators that do, may find the power they generate undervalued in the market for Renewable Energy Certificates (RECs).

The good news is that there is strong support for offshore wind in Virginia. Virginia Beach and other Hampton Roads communities support the development of offshore wind projects and two developers have submitted applications to the Bureau of Ocean Energy Management (BOEM) to lease waters off Virginia's coast, with more developers expressing interest as well.

OFFSHORE WIND CONTACTS

Chelsea Harnish Chesapeake Climate Action Network 804.767.8983 chelsea@chesapeake climate.org J.R. Tolbert Sierra Club 804.225.9113 xtn. 112 jr.tolbert@sierra club.org

RENEWABLE PORTFOLIO STANDARDS

Statement of the Issue

Virginia's renewable energy goals are a modest 15% 2009. In the U.S., we of non-nuclear electric generation (approximately 10% of all generation) by 2025, with double credit given for wind and solar and triple credit for offshore wind. While the goals are only voluntary, Virginia law offers incentives to the state's investor-owned utilities to meet them, and both Dominion Virginia Power and Appalachian Electric Power have indicated an intention to do so.

The law, however, allows utilities to meet the goals by purchasing renewable energy certificates (RECs) from outside the state. In 2010 Dominion purchased more than 1.8 million RECs as part of its RPS compliance plan. These RECs, however, have done very little to encourage new investment in renewable power. The overwhelming majority of REC-supplying power generators (18 out of 28) were from ancient facilities built *before* World War II! Not even one REC was purchased from any facility built this century.

Unfortunately, the result is that all of the money Virginia ratepayers spend on RPS compliance is going to old, existing generators, many of whom are out of state. This denies Virginia businesses the opportunity to participate in this growing sector and create clean energy jobs. In addition, the health benefits associated with generating electricity from renewable energy are not being realized Virginia residents.

The legislature passed the voluntary RPS statute in 2007 because we wanted to see new wind, solar, and clean renewable investments come to Virginia. So far, the law has failed to deliver on that promise. It needs to be revised.

Accordingly, we recommend that the General Assembly amend the Code to provide that the renewable energy used to meet our goals be generated within the Commonwealth of Virginia, or

in the federal waters adjacent to our coast. Additional amendments need to be reviewed to ensure that the law succeeds in growing renewable energy projects in Virginia and creating new jobs here at home.

Background

Renewable energy, and especially wind and solar energy, are enjoying explosive rates of growth within the United States. According to the U.S Energy Information Administration, between 2007 and 2008 wind-generated electricity increased by 61% and again increased by 28% between 2008 and 2009. In the U.S., wind energy increased more than any other renewable source of generation in these years—yet none of Virginia's electricity comes from Virginia wind farms.

Solar continues to be one of the fastest growing sectors of the U.S. economy, employing over 93,000 workers nationwide in 2010, with a projected annual job growth of 26%.¹ New Jersey has installed over 10,000 solar arrays, generating more then 380 MW locally, due in part to legislative framework encouraging renewable energy. HB 1686 passed last year to allow Virginia utility companies to own and operate solar facilities and offer tariffs to assist customer's distributed solar generation. Dominion is now pursuing plans to develop a 4-megawatt solar plant in Halifax, Virginia.

The growth of renewable energy brings with it significant new business opportunities. For example, the National Renewable Energy Laboratory estimates that 1,000 MW of new wind development in Virginia would result in \$2.7 million per year in payments to landowners, \$9.1 million per year in local property tax revenue. 1,645 new jobs during the construction phase, 230 new long-term jobs, an infusion of \$207.4 million into local economies during construction, and \$21.2 million [per year] to local economies long-term. All of these figures are for direct impacts only; by including indirect and induced impacts, the total economic benefit over 20 years would rise to \$1.2 billion.²

Estimates for the benefit of offshore wind in Virginia are similar. The Virginia Coastal Energy Research Consortium (VCERC) estimates that developing just part of Virginia's offshore wind resource could provide approximately 10,000 career -length jobs; the Virginia Economic Development Partnership has produced a similar estimate.

RPS REFORM RECOMMENDATIONS

The Virginia General Assembly should pass a bill requiring that renewable energy be produced within the Commonwealth of Virginia or in the waters off its coast to qualify for a Performance Incentive under the state's renewable energy goal (VA Code § 56-585.2). By encouraging utilities to generate or buy renewable energy produced within Virginia, we can ensure that Virginia's own businesses--as well as it workers, students and ratepayers--all benefit as we increase our use of clean energy.



As these numbers indicate, renewable energy offers huge opportunities to businesses, workers, landowners and local governments. When Virginia utilities purchase renewable energy certificates from out-of-state producers, other states enjoy these economic and job development benefits, but Virginia does not.

Failing to develop renewable energy within our borders also means a lost opportunity for our young people. Without renewable energy development here, students cannot learn the skills that will allow them to participate in a sector of the economy that continues to grow in importance.

Finally, buying RECs from out of state instead of developing renewable energy projects here denies us other benefits, including fuel diversity within the state, the benefits to the transmission grid of locallygenerated electricity, and the price stability afforded by ownership of a wind farm or solar array.

In short, buying out-of-state RECs means we end up paying more for our electricity without enjoying the benefits that accrue from investing in renewable energy here in Virginia.

1. http://www.seia.org/cs/research/industry_data

2. Economic Benefits, Carbon Dioxide (CO2) Emissions Reductions, and Water Conservation Benefits from 1,000 Megawatts (MW) of New Wind Power in Virginia (Fact Sheet). (2008). 2 pp.; NREL Report No. FS-500-43378; DOE/GO-102008-2629.

RPS REFORM CONTACTS

J.R. Tolbert
Sierra Club
804.225.9113 xti
jr.tolbert@sier
club.org

1. 112

EXTERNALITIES AND ENERGY PLANNING

Statement of the Issue

Including Human Health Costs in the Integrated Resource Plan

Although electricity provides well-known benefits, the generation of electricity often has significant adverse effects that are not reflected in its market price. These effects, usually on human health and the environment, are considered "hidden costs" or "externalities." Externalities are real costs that are borne by members of the public rather than by the generator of the electricity.

Under current practice, regulators do not even consider these very real costs when evaluating utilities' plans for meeting demand. As a result, generation resources like fossil fuels that offer low costs to the utility but high costs to society in the form of public health costs tend to be favored over resources like renewable energy that may cost more for the utility but have a lower total cost once the externalities are considered. This distorts the results of the Integrated Resource Plans (IRP) and causes them to fail at meeting their core requirement "to promote reasonable prices and environmental responsibility."

Background

Following re-regulation of the electric utility industry in Virginia, legislation was introduced to require utilities to submit an IRP that forecasts their load obligations for the ensuing 15 years and how they plan to meet those obligations. They are required to update their plan every two years and submit it to the State Corporation Commission (SCC) for approval. Both Dominion Virginia Power and Appalachian Electric Power submitted IRPs in fall 2011.

Following introduction of demand side

management incentives for Virginia's utilities, the legislature updated the Code to require utilities to include demand side resources in their IRPs. Now that the legislature has introduced renewable resource incentives for Virginia's utilities, the legislature should also update the Code to require they be analyzed on a level playing field with all fuel resources by including externalities in the IRPs. This requirement is modeled on a comparable directive of the Delaware Public Service Commission, Order 7628.

When presenting the Integrated Resource Plan, both Dominion and Appalachian Power consider a variety of scenarios that include a base plan, an Environmental Impact Plan (which takes into account new environmental protections) and a Renewables Plan.. The scenarios with large negative externalities show up as cheaper and more



desirable than they in fact are. Environmentally responsible resources that not only have no negative externalities, but also have positive externalities, are unfairly disadvantaged. This fails to satisfy two of the core requirements of the IRP to "promote reasonable prices and environmental responsibility."

How large are the externalities? To answer this question, Congress requested the National Academies "to define and evaluate key energy

EXTERNALITIES RECOMMENDATIONS

The legislature should modify the Code of Virginia to explicitly require utilities to incorporate public health costs in their integrated resource plan analyses. Doing so will level the playing field and enable the integrated resource plan to meet its core requirement "to promote reasonable prices and environmental responsibility."

externalities not included in pricing or not fully addressed by government policies." They published a report in 2010, Hidden Costs of Energy - Unpriced Consequences of Energy Production and Use, which determined the impact of air pollution emissions for each type of generation. The vast majority of damages were health damages, with premature mortality being the single largest health-damage category. The average non-climate damages for coal -generated electricity is 3.2 cents per kilowatt-hour. This is equal to one-third the cost of electricity in Virginia.

The American Lung Association of Virginia reports that more than half of Virginia's jurisdictions earned a failing grade for ozone, and three of our largest jurisdictions earned a failing grade for particle pollution. This results in 2.3 percent of children and 6.9 percent of adults in Virginia who suffer from asthma. The impact is indeed widespread.

Externalities should be monetized, wherever possible, but otherwise described qualitatively. It is anticipated that the formulas used to monetize damages in the National Academy's report could be adapted for use in the IRP analyses.

1. Virginia Code, §56-598

2. http://depsc.delaware.gov/orders/7628.pdf

3. Their model included some environmental regulatory costs that its consultants forecasted would be required within the fifteen year period. These costs, however, are not externalities, by definition, because they will be reflected in market prices.

4. http://www.nap.edu/catalog.php?record_id=12794

5. Newer coal-fired plants generate lower damages than older plants that lack pollution control equipment.

6. http://www.stateoftheair.org/2010/states/virginia/

EXTERNALITIES CONTACTS

Steven Bruckner Sierra Club 703.883.3622 sbruckner@cox.net J.R. Tolbert Sierra Club 804.225.9113 xtn. 112 jr.tolbert@sierra club.org

MOUNTAINTOP REMOVAL MINING

Statement of Issue

Mountaintop removal coal mining is destroying the landscape, waterways, quality of life, and economic viability of Southwest Virginia, the most biologically rich region of the Commonwealth. The process uses massive explosive blasts to destroy mountain peaks and ridges to access coal seams, reducing the height of mined mountains by hundreds of feet and creating a barren and unproductive landscape unable to support native vegetation. The resulting rubble is pushed into the neighboring valleys, permanently burying headwater streams with what the industry terms "valley fills," disrupting natural stream flows and poisoning downstream waterways.

This destruction of our state's mountains has emerged as a top environmental concern of Virginians, now that citizens across the state have become aware of the practice and the extent of the damage, with widespread opposition to the practice throughout the state. ¹

Background

The human and ecological costs of strip mining in Virginia, most of which involves mountaintop removal, are extremely high. To date, strip mines have destroyed 156,000 acres of mountainous terrain in the state. ² An EPA report also found that, in just the 10 years between 1992 and 2002, 1,200 miles of Appalachian streams were destroyed—either buried by valley fills or mined-over—at an average rate of 120 stream miles each year.³ In Virginia, 151 miles of streams were destroyed in this period alone.⁴ Across the region, more than 500 mountains have been destroyed, with 67 of these in Virginia.⁵

Mountaintop removal mines can cover thousands of acres. Their impacts on humans and wildlife, however, extend far beyond the mine sites. The water downstream from valley fills is polluted with both toxic metals and excessive sediment, impacting both human communities and aquatic life downstream, and the permanent destruction and fragmentation of forests has a profound effect on terrestrial wildlife.⁶

Human Impacts

Residents of the coalfields must endure frequent blasting, contaminated drinking water, and severe flooding. The mountains and creeks destroyed by the practice—where residents have hunted, fished, hiked, and swum for generations—are integral to the area's way of life and cultural heritage.

Residents also suffer from dramatically elevated occurrences of birth defects, health problems—such as heart, lung, and kidney disease—and premature death.⁷ Moreover, far from being an economic boon, strip mining is closely associated with economic distress. The Appalachian Regional Commission found that "current and persistent economic distress within the Central Appalachian Region has been associated with employment in the mining industry, particularly coal mining.⁸"

In fact, new studies demonstrate that the strictly economic costs imposed by mining exceed its benefits. A 2009 study focused on Kentucky found that state expenditures supporting coal mining exceeded state revenue from mining by over \$100 million annually. A peer-reviewed 2009 West Virginia University study comparing counties across Appalachia found a strong correlation between coal mining and a host of negative socioeconomic



Mountaintop Removal Mining and Valley Fills

MOUNTAINTOP REMOVAL RECOMMENDATIONS

The state's current policy allowing and subsidizing mountaintop removal permanently desecrates a rich and irreplaceable landscape that is treasured by residents and visitors alike, destroys the region's economic viability, and impedes the development of economic and energy alternatives.

- Valley fills are currently allowed due to a loophole in the regulations enforcing the federal Clean Water Act. The Virginia General Assembly should protect the state's mountains and waterways by enacting legislation to ban the dumping of mining waste in intermittent, perennial, or ephemeral streams or other waters of the Commonwealth.
- Virginia's taxpayers directly subsidize mountaintop removal through approximately \$44.5 million in corporate tax breaks provided by two Virginia statutes. Virginia Code sections 58.1-433.1 and 58.1-439.2 provide subsidies to coal companies and utilities for extraction and consumption of Virginia coal. If used effectively to support job creation in the coalfields, these funds could be a tremendous boon to employment and economic development in the region. The General Assembly should rededicate these funds to support the development of a vibrant and sustainable regional economy in Southwest Virginia. (Please see A Coalfields Job Credit in this Briefing Book.)

indicators, including elevated mortality rates. The study found that the value of the lives lost throughout the region due to mining impacts (the value of statistical life lost) vastly outweighs coal's economic contribution to the region. Of course, mountaintop removal also exacts great economic costs not considered in either of these studies, such as increased healthcare expenses and the value of damaged waterways, lost recreational opportunities, and obliterated viewsheds.

The Virginia General Assembly should protect the state's mountains and waterways by enacting legislation to ban the dumping of mining waste in our streams and waterways.

Finally, mountaintop removal compromises the region's future by greatly diminishing the desirability of the region as a place to live or to locate small businesses and less destructive industries.

Wildlife Impacts

The Appalachian Plateau, including Southwest Virginia, is one of the most biologically diverse regions in the temperate world. Mountaintop removal eliminates native forest and creates a barren landscape unsuitable for their re-growth. This permanent loss of forest—more than one million acres across Central Appalachia—and the fragmentation of an area several times this size—represents a disastrous loss of habitat.⁹

While habitat losses on the mine sites pose the most obvious threat to wildlife, contamination of downstream waters from valley fills and mine runoff has severe impacts on aquatic life, and the affected drainages are among the most biologically diverse freshwater systems in the world. Selenium, one of dozens of toxic metals leached into streams from valley fills, is found downstream of mountaintop removal sites in concentrations far in excess of EPA standards, causing severe deformities in fish.¹⁰ One study showed that mayflies, which account for about half of insects in the Appalachian Plateau's headwater streams, had completely disappeared downstream from some valley fills, a loss with potentially catastrophic

Before Mountaintop Mining

After Mountaintop Mining



consequences for the entire downstream food web and the integrity of entire river systems.¹¹

Mining Reform and Virginia's Energy Future While coal continues to play an important role in Virginia's energy mix, the toll mountaintop removal exacts on our communities, land, and waterways is unacceptable. Moreover, Virginia's coal production and employment are in a precipitous decline.

In 2009, Virginia coal production was down 54 percent from 1990 levels. Mining employment in the state has followed a similar downward trajectory, falling 57 percent - to fewer than 4,600 jobs – in the same period. These declines are expected to continue, with the Energy Information Administration predicting a further drop in central Appalachian coal production of 43 percent by 2020.¹² Southwest Virginia's economic future clearly depends on transitioning from coal to more sustainable industries.

Ending mountaintop removal and valley fills is a critical first step in this direction. The practice is not only rapidly undermining the region's future economic viability; by using explosives and large earth-moving machines to extract coal, it employs many fewer miners than other methods. On the other hand, proposals for wind energy development in the region highlight the promise of renewable energy investment. And a 2009 report by the Appalachian Regional Commission discusses the vast untapped energy efficiency potential in the region and the potential to generate over 77,000 jobs across Appalachia from cost-effective efficiency investments.¹³

While most Virginians consume some electricity generated from mountaintop removal coal, coal makes up less than half of Virginia's energy mix and only approximately a third of the coal extracted in Virginia mined is through mountaintop removal or other strip mining methods. The state, moreover, is a major exporter of coal. Therefore, coal mined using other methods can immediately replace mountaintop removal coal. The state's vast untapped energy efficiency and renewable energy potential can be brought online concurrently, with great benefits to the state's economy and environment.

1. Survey Findings on Mountaintop Removal Strip Mining by Lake Research Partners and Bellweather Research, August, 2011, available at: http://www.appalmad.org/?page_id=307

2. Extent of Mountaintop Mining in Appalachia - 2009. Available at: http://ilovemountains.org/reclamation-fail/details.php

3. Draft Programmatic Environmental Impact Statement on Mountaintop Mining/Valley Fills in Appalachia - 2003, available at: http:// www.epa.gov/region3/mtntop/eis2003.htm

4. Ibid.

5. Extent of Mountaintop Mining in Appalachia - 2009. Available at: http://ilovemountains.org/reclamation-fail/details.php

6. See Palmer, M.A. et al (2010). Mountaintop Mining Consequences, Science, 327, 148-149, available at: http://www.sciencemag.org/ content/327/5962/148.summary 7. Ibid., Ahern, M.M. et al (2011). The Association Between Mountaintop Mining and Birth Defects Among Live Births in Central Appalachia, 1996 -2003, Environ. Res., available at: www.kftc.org/press-room/.../MTMbirth%20defects%20paper.pdf

8. Trends in National and Regional Economic Distress: 1960-2000, Appalachian Regional Commission (2005), available at: http://www.arc.gov/research/researchreportdetails.asp?REPORT_ID=28

9. Extent of Mountaintop Mining in Appalachia - 2009. Available at: http://ilovemountains.org/reclamation-fail/details.php

10. See Palmer, M.A. et al (2010). Mountaintop Mining Consequences, Science, 327, 148-149, available at: http://www.sciencemag.org/ content/327/5962/148.summary

11. Pond, Gregory J. et al (2008). Downstream Effects of Mountaintop Coal Mining, Journal of the North American Benthological Society, 27, 717-737.

12. 2011 Annual Energy Outlook, U.S. Energy Information Administration, Coal Production by Region and Type, Reference case, available at: http://205.254.135.24/oiaf/aeo/tablebrowser/

 $\label{eq:constraint} \ensuremath{\texttt{#release}}\xspace = AEO2011\&\ensuremath{\texttt{subject}}\xspace = 0.4EO2011\&\ensuremath{\texttt{table}}\xspace = 95-AEO2011\&\ensuremath{\texttt{region}}\xspace = 0.02011\&\ensuremath{\texttt{region}}\xspace = 0.02011\&\ensuremath{\texttt{region}}\xspace = 0.02011\&\ensuremath{\texttt{region}}\xspace = 0.02011&\ensuremath{\texttt{region}}\xspace = 0.02011&\ensuremath{\texttt{r$

13. Energy Efficiency in Appalachia, Appalachian Regional Commission (2009), available at: http://www.arc.gov/research/ researchreportdetails.asp?REPORT_ID=70

MOUNTAINTOP REMOVAL CONTACT

Tom Cormons Appalachian Voices 434.293.6373 tom@appvoices.org





A COALFIELDS JOB CREDIT

Statement of the Issue

The economy of Southwest Virginia has traditionally been tied to the coal mining industry. Yet these jobs have been in steady decline for more than two decades. Between 1990 and 2009, Virginia coal mining employment dropped by 57%--to fewer than 4,600 jobs, tracking a 54% drop in coal production during the same period. The Energy Information Administration (EIA) predicts that this precipitous decline will continue as more of the state's most productive coal seams are mined out. For the central Appalachian region as a whole, the EIA projects a 43% decline in coal production from 2009 levels by 2020.

"Land and historic preservation tax credits appear to effectively achieve their goals, while others, such as coal tax credits, do not ... Virginia's coal income tax credits, may not be effectively promoting coal production and employment because changes in coal mining activity appear unaffected by the credits

> –Joint Legislative Audit Review Committee Review of the Effectiveness of Virginia Tax Preferences (draft findings) November, 14 2011

Moreover, data show that counties in Southwest Virginia with the most strip-mining activity (which includes mountaintop removal coal mining) have seen declining incomes over the past twenty years, while neighboring counties without significant strip mining have seen stable or increasing incomes.

As these charts show, the increasing reliance of the coal industry on mountaintop removal coal mining is

neither adding jobs nor improving incomes in counties where this mining is most common. The obvious conclusion is that Southwest Virginia must diversify its economic base beyond coal.

We support economic development programs in the coalfields area, with the long-term goal of diversifying the employment opportunities available to former coal miners, young people just entering the work force, and workers displaced by the economic downturn. From tourism and forestry products to manufacturing and high-tech jobs, the area has significant potential to create thousands of new jobs in diverse industries.

In spite of the fiscal challenges Virginia faces, the funds to pay for an economic program in the coalfields area could be easily obtained by repealing unnecessary tax subsidies for coal companies and utilities, freeing up approximately \$45 million per year.

Background

Coal Subsidies Don't Create Jobs.

Currently, Virginia's taxpayers directly subsidize coal mining through approximately \$44.5 million in corporate tax breaks provided by two Virginia statutes: code sections 58.1-433.1 (for utilities) and 58.1-439.2 (for coal companies). These sections provide subsidies to coal companies and utilities for the extraction and consumption of Virginia coal. The initial purpose of these provisions was to create employment in the coalfield areas of Virginia, but in fact they are only loosely related to employment levels and have not created new jobs; instead, they serve only to favor coal extraction over all other business activities in the Commonwealth.

For coal companies, the credit is initially based on the amount of coal extracted as well as the method used. That credit is then limited or increased based on the "employment factor." The employment factor is a percentage equal to current year coal mining jobs, divided by immediately prior year mining jobs.

So, if the coal company kept employment at the same level and increased productivity, the credit would go up. The credit could even go up if employment went down but production went up, because, for example, 80% of a larger number might be greater than 100% of a smaller number.

The credit for utilities does not take employment into account at all. As with the credit for coal

COALFIELDS JOB CREDIT RECOMMENDATIONS

A far more effective means of increasing employment in the coalfield areas of Virginia would be to redirect some or all of the coal subsidy monies directly to programs that support economic diversification. A portion of that money could continue to be allocated to Virginia Coalfield Economic Development Authority, or it could go to local job programs.

Alternatively or in addition, job creation could be incentivized through a robust jobs credit for employers in the coalfields area. A jobs credit could be narrowly tailored to specific types of employment, such as new manufacturing jobs or it could apply to any new jobs created in the region (including service sector jobs). Opening it to all jobs would cast the widest net possible to attract new businesses.

For example, the legislature could create a credit based on wages paid to each new employee. Whether new employees had been hired could be determined by looking at a base period, perhaps two years, and comparing employment during the base period to current employment levels at the company. To the extent that current employment was greater than base period employment, the employer would get a non-refundable credit against its income tax liability for some portion of the new employee's wages.

The dollar amount of the credit would be set at the level the legislature deems appropriate to stimulate employment. The credit could be limited to first year wages or extended beyond that. Qualifying hires could be limited to current residents of the region or include those who relocate to the coalfields area.

Such a tax credit, narrowly focused on increasing employment opportunities in southwest Virginia, would attract new business and incentivize the expansion of existing businesses, without giving a windfall to one industry (electric utilities) that is already financially robust, and rewarding another (coal companies) that has failed to create jobs.

A budget of \$44.5 million would be sufficient to fund thousands of new jobs for coalfields residents through such tax credits, even if the credits supported fully one-third of the cost of each new employee in the first year, up to a limit of \$15,000 per employee, and phasing out over three years. Since growing companies and new jobs would generate tax revenues for the state, the net cost to taxpayers would be less, even before considering the likelihood of a multiplier effect.

The result would be new jobs in the hard-hit coalfields area, a fairer sharing of the tax burden among the various sectors of Virginia business, and savings for taxpayers--a triple win for Virginia.

companies, the credit merely results in a windfall for corporations. Indeed, current practice is for the utilities sell their tax credits to coal companies, which are permitted to cash them in, sharing a small percentage with the Virginia Coalfield Economic Development Authority (VACEDA).¹ Thus the "credits" not only deprive the Commonwealth of income, but actually result in cash payments to coal mining companies, courtesy of the taxpayers. in the coalfield region of Virginia (Lee, Wise, Scott, Buchanan, Russell, Tazewell, and Dickenson Counties and the City of Norton). These same jurisdictions could be covered by the jobs credit.

COALFIELDS JOB CREDIT CONTACTS

Tom Cormons Appalachian Voices 434.293.6373 tom@appvoices.org Ivy Main Sierra Club 703.448.7618 ivymain@cox.net

^{1.} The Virginia Coalfield Economic Development Authority was established to enhance the economic base for the seven counties and one city

CONFRONTING CLIMATE CHANGE

Statement of the Issue

Earth is experiencing unprecedented climate change and human activities are primarily responsible. Scientists warn that we must take immediate, effective action if we are to avoid passing a "tipping point"—a point of no return for avoiding the most extreme consequences of global climate change. They also stress the need to start preparing for those climate changes we cannot avoid – those consequences "locked in" by our actions to date. VCN's current positions on issues like land use, transportation, coal-fired power plants, and others provide detailed action plans to address both today's challenges and the larger challenge of climate change. This paper looks at the broader climate change issue as it impacts Virginia.

The scientific consensus is overwhelming. In 1979, well before global warming became a hotbutton, political issue, a National Academy of Sciences report concluded, "We now have incontrovertible evidence that the atmosphere is indeed changing and that we ourselves contribute to that change. Atmospheric concentrations of carbon dioxide are steadily increasing, and these changes are linked with man's use of fossil fuels...A wait-and-see policy may mean waiting until it is too late."

In the last 20 years we have seen 14 of the warmest years in history. The Artic Ice sheet is smaller than at any point since human measurements began and is predicted to disappear altogether during the summer in 20- 30 years.. In recent years, the global ocean temperature has risen to the highest ever recorded. The rate of sea level rise has doubled in recent decades. Virginia's Governor's Commission on Climate Change warned in 2008 that climate change will lead to more frequent and severe droughts, floods, heat waves, and storms.

The link between man-made green house gases and these climate change indicators is better studied and understood than most areas of science. This fact highlights the central reality about climate change: we have had plentiful information about the issue for decades; what we have lacked is the political will to implement solutions. It is clearly time to act.

Background

Impacts to Virginia

Virginia is likely to experience some of the worst impacts of climate change of any state along the Atlantic Coast. From Appalachia to the Northern Neck, climate change will significantly alter growing seasons, increase severe precipitation events, and result in summertime droughts, severely threatening agriculture, forestry, fisheries, tourism, and many other economic sectors.

Water levels in the Chesapeake Bay and along Virginia's coastline are expected to rise by 2 to 5 feet this century. The Hampton Roads region is the nation's most populated area at the greatest risk from sea level rise outside of New Orleans. Hampton Roads has the tenth largest set of infrastructure and building assets at risk of inundation in the world.

Virginia Should Lead

Given the high risk of climate change impacts on Virginia, it is imperative for us to take immediate steps to combat climate change. Virginia is a serious contributor to climate change— greater than some individual countries— and its role is increasing. Old Dominion Electric Cooperative is proposing what would be the single-largest coal-fired power plant in Virginia. If built, the ODEC coal plant would emit another 11.7 million tons of CO_2 annually – putting it on the list of one of the top 50 dirtiest power plants in the nation, keeping company with power stations that are several decades old.

Electricity generation is only one part of the problem. Our buildings and transportation account for approximately 75 percent of our energy use and greenhouse gas emissions. Sprawling suburban development and road-centered transportation policies force increased driving and fuel consumption, thus increasing carbon dioxide emissions. Virginia has had one of the largest increases in carbon dioxide emissions from cars and trucks in the nation. Additionally, sprawl destroys

CLIMATE CHANGE RECOMMENDATIONS

We can move Virginia in the right direction by:

- Expanding effective energy efficiency and conservation programs that not only offset peak demand, but also further reduce generation needs 24 hours a day, 365 days a year.
- Rejecting proposals for conventional-style, coal-fired power plants that would significantly increase global warming emissions, thus exacerbating the Commonwealth's contribution to climate change.
- Promoting the responsible development of low- and no-carbon renewable energy sources;
- Reforming Virginia's land use and transportation policies to promote green building in more compact communities, transit and other alternatives to driving, and more efficient, cleaner vehicles.
- Providing local governments and state agencies with the planning tools (e.g. LiDAR data) they need to minimize the effects of climate change on communities and infrastructure.
- Encouraging greater investment in conserving forest, agricultural, and marshlands that can act as carbon sinks.

farmlands, woodlands, and other open space that help store carbon.

Federal Action

In 2009, the U.S. House of Representatives passed a bill, the American Clean Energy and Security Act, which would have established a cap-and-trade program for greenhouse emissions similar to the successful program used to stop the spread of acid rain. Unfortunately, that bill languished in the Senate and eventually died

More positively, the U.S. EPA has responded to a 2007 court order from the Supreme Court of the United States, in Massachusetts v. EPA, and has promulgated regulations that would reduce greenhouse gas pollution from both mobile sources (e.g., car and trucks) and stationary sources (e.g., power plants and factories). The new EPA climate protections are set to go into effect on January 2, 2011. Virginia's Attorney General, Ken Cuccinelli, however, has joined big coal and oil interests in filing a lawsuit challenging EPA's new greenhouse gas initiatives.

State Action

In 2008, the Virginia Commission on Climate Change reported on the need to reduce greenhouse gases and start to prepare for climate change impacts on Virginia. Unfortunately, few of the commission's recommendations were acted upon by the governor or General Assembly. Meanwhile, the governor's 2010 Virginia Energy Plan deleted any mention of "climate" whatsoever.

Legislation has been introduced in recent sessions to limit the ability of EPA to regulate greenhouse gas pollution. With hard work, these bills have been blocked, but we can expect more to come.

Opportunities for Progress

Despite setbacks, there is progress that can be made to combat climate change. Local governments are taking action, including joining the Sierra Club's "Cool Cities" and "Cool Counties" programs and the Virginia Municipal League's "Go Green Virginia" initiative, demonstrating that progress can be made.

Alternative energy investments in Virginia are on the rise. Offshore wind generation in particular presents a great opportunity to generate clean energy cost-effectively and create new Virginiabased jobs fabricating and installing wind turbines. Likewise, energy conservation work puts building trades back on the job, reviving that sagging employment market. Federal stimulus spending and



tax credits will greatly expand the market for home weatherization providers and help Virginia's community colleges establish training programs in that field. Sustaining job growth beyond the twoyear window of the stimulus, however, will require state leadership.

CLIMATE CHANGE CONTACTS

Cale Jaffe Southern Environmental Law Center 434.977.4090 cjaffe@selcva.org Skip Stiles Wetlands Watch 757.623.4835 skip.stiles@wetlands watch.org





Virginia Conservation Network

125 nonprofit and community groups working together for a cleaner, healthier environment.





THE GARDEN CLUB

Bald Eagle Affiliate Members

AUDUBON NATURALIST SOCIETY



FOUNDED 1892 **Cardinal Affiliate Members**



Tiger Swallowtail Affiliate Members





Virginia Aquarium and Marine Science

Virginia Recreation and Parks Society

Virginia Interfaith Center for Public Policy

Center Foundation

Virginia Native Plant Society

Virginia Living Museum

Wetlands Watch

Southern

Environmental Law Center

VIRGINIA LEAGUE OI CONSERVATION VOTERS EDUCATION FUND

Coalition for Smarter Growth Clean Water Action Dan River Basin Association James River Association National Audubon Society **Preservation Virginia** Scenic Virginia **Shenandoah Valley Battlefields**

Foundation Southeastern Rural Community **Assistance Project Spotswood Garden Club The Conservation Fund Trust for Public Land Tuckahoe Garden Club of Westhampton** Valley Conservation Council

Dogwood Affiliate Members

Albemarle Garden Club Alliance for Community Choice in Transportation Alliance for the Chesapeake Bay **Appalachian Voices Arlington Coalition for Sensible** Transportation Ashland Garden Club Association of Energy Conservation Professionals Audubon Society of Northern Virginia Augusta Garden Club **Bike Walk Virginia Blue Ridge Environmental Network Blue Ridge Garden Club Boxwood Garden Club Brunswick Garden Club Cabell Brand Center Cape Henry Audubon Society** Capital Region Land Conservancy **Charlottesville Garden Club Chatham Garden Club Chesapeake Climate Action Network Citizens for a Better Eastern Shore Citizens for a Fort Monroe National** Park **Citizens for Fauguier County Civil War Preservation Trust Clinch Coalition Coastal Canoeists Coastal Conservation Association**

Conservation Park of Virginia Dolley Madison Garden Club Elizabeth River Project Fauquier and Loudoun Garden Club Friends of Daniels Run Park Friends of Dyke Marsh Friends of Norfolk's Environment Friends of Powhatan Creek Watershed Friends of Rockfish Watershed Friends of Stafford Creeks Friends of the North Fork of the Shenandoah Friends of the Rappahannock Friends of the Rivers of Virginia Garden Club of Norfolk Garden Club of the Northern Neck Hands Across the Lake **Highlanders for Responsible** Development **Hunting Creek Garden Club James City County Citizens Coalition** James River Garden Club Last Great Waters Foundation Leesburg Garden Club Lynnhaven River Now Martinsville Garden Club Mill Mountain Garden Club Nansemond River Garden Club **Nelson County Garden Club**

Northern Neck Audubon Society

Northern Shenandoah Audubon Society Northern Virginia Conservation Trust Northumberland Association for **Progressive Stewardship** Partnership for Smarter Growth **People Protecting Watershed** Headwaters People's Alliance for Clean Energy Potomac Conservancy **Public Policy Virginia Preservation Virginia Rail Solution** Rappahannock League for **Environmental Protection** Rappahannock Valley Garden Club **Richmond Audubon Society Rivanna Garden Club Roanoke River Basin Association Rockbridge Area Conservation** Council **Rockfish Valley Foundation Rural Nelson** Scenic 340 Project **Shenandoah Valley Network** Shenandoah valley Pure Water Forum Sierra Club Blue Ridge Group Sierra Club Chesapeake Bay Group Sierra Club Falls of the James Group Sierra Club Great Falls Group Sierra Club Mount Vernon Group

Sierra Club New River Group Sierra Club Piedmont Group Sierra Club Potomac Outing Group Sierra Club Rappahannock Group Sierra Club Roanoke Group Sierra Club Shenandoah Group Sierra Club Thunder Ridge Group Sierra Club York River Group Southeastern Rural Community Assistance Project

The Flora of Virginia Project, Inc. The 500 Year Forest Foundation **Three Chopt Garden Club Upper Tennessee River Roundtable** Virginia Association of Soil and Water

Conservation Districts Virginia Audubon Council Virginia Beach Garden Club Virginia Bicycling Federation **Virginia Bluebird Society** Virginia Council of Trout Unlimited Virginia Eastern Shore Land Trust Virginia Forest Watch Virginia Society of Ornithology Virginia Sustainable Building Network Virginia Wilderness Committee Western Virginia Land Trust Wild Virginia Wildlife Center of Virginia Williamsburg Garden Club Winchester Garden Club



Virginia Conservation Network More than 125 nonprofit and community groups working together for a cleaner, healthier environment.

www.vcnva.org | 804.644.0283