REPORT OF THE SECRETARY OF NATURAL RESOURCES

CHESAPEAKE BAY AND VIRGINIA WATERS CLEAN-UP PLAN - PROGRESS REPORT

TO THE GOVERNOR AND THE CHAIRMEN OF THE SENATE AGRICULTURE, CONSERVATION AND NATURAL RESOURCES COMMITTEE AND THE HOUSE AGRICULTURE, CHESAPEAKE AND NATURAL RESOURCES COMMITTEE

COMMONWEALTH OF VIRGINIA
RICHMOND
JUNE 2012

COMMONWEALTH of VIRGINIA

Office of the Governor

Doug Domenech
Secretary of Natural Resources

June 15, 2012

The Honorable Robert F. McDonnell
Governor, Commonwealth of Virginia
Office of the Governor
Patrick Henry Building, 3rd Floor
1111 East Broad Street
Richmond, Virginia 23219

The Honorable Emmett W. Hanger, Jr.
Chair, Senate Agriculture, Conservation and
Natural Resources Committee
P.O. Box 2
Mount Solon, Virginia 22843-0002

The Honorable Beverly J. Sherwood
Chair, House Agriculture, Chesapeake and
Natural Resources Committee
P.O. Box 2014
Winchester, Virginia 22604

Re: Report on the cleanup of the Chesapeake Bay and Virginia's waters designated as impaired by the U.S. Environmental Protection Agency

Dear Governor McDonnell, Senator Hanger, and Delegate Sherwood:

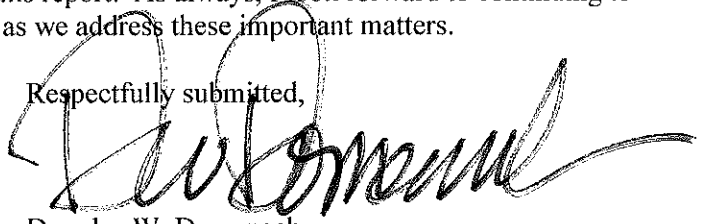
I am pleased to submit the attached report in accordance with §62.1-44.117 and §62.1-44.118 of the Code of Virginia. This semiannual report focuses exclusively on Clean-Up Plan implementation whereas the last semiannual report dated January 3, 2012, consolidated additional annual reporting requirements. This report extracts Chapter 3 of the January report and, where information was available, provides year-end progress reports and brief updates of accomplishments over the last few months. This report has been prepared with information provided by the Department of Environmental Quality and the Department of Conservation and Recreation, with contributions from the Department of Mines, Minerals and Energy, the Department of Forestry, and the Department of Health.

Six years have passed since the General Assembly adopted the Chesapeake Bay and Virginia Waters Clean-Up and Oversight Act of 2006. The original plan was developed in January of 2007 with updates in 2008 and 2009. While this plan has not been updated in recent

years, Virginia has completed development of Watershed Implementation Plans in support of the Chesapeake Bay Total Maximum Daily Load (TMDL). In addition to the Watershed Implementation Plans, the Chesapeake Bay TMDL planning and accountability framework calls for the development of detailed milestone implementation plans every two years and annual progress reporting. An opportunity exists to better align the Chesapeake Bay and Virginia Waters Clean-Up and Oversight Act planning and reporting elements with the Chesapeake Bay TMDL planning and accountability framework. During 2012, agency staff will explore these opportunities and develop recommendations about how better alignment can be accomplished.

I encourage you to contact me directly should you have any questions or need additional information regarding the contents of this report. As always, I look forward to continuing to work with members of the Legislature as we address these important matters.

Respectfully submitted,



Douglas W. Domenech

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Executive Summary

This report was developed to comply with water quality reporting requirements stipulated in § 62.1-44.118 of the Code of Virginia. This section of code requires the Secretary of Natural Resources to submit semiannual progress reports May 1 and November 1 regarding implementation of the impaired waters clean-up plan as described in § 62.1-44.117. Pursuant to § 62.1-44.118, the May 1 progress report focuses exclusively on clean-up implementation whereas the November 1 report consolidates additional annual reporting requirements.

A noteworthy achievement during this reporting period was the completion and submittal of the Phase II Watershed Implementation Plan (WIP) developed as part of the Chesapeake Bay Total Maximum Daily Load (TMDL) requirements. In addition, continuing progress was made in reducing point source discharges from sewage treatment plants, installing agricultural best management practices, reducing the phosphorus content of poultry litter through effective dietary management of poultry, enhanced compliance with state erosion and sediment control regulations, and working towards the July 1, 2014 local implementation target for the revised Stormwater Management Regulations. As noted in the November 1 report, several of the goals and objectives identified in the initial Chesapeake Bay and Virginia Waters Clean-up Plan have been essentially achieved.

Introduction

This report is submitted to fulfill the progress reporting requirements of § 62.1-44.117 and 62.1-44.118 of the Code of Virginia which calls on the Secretary of Natural Resources to plan for the cleanup of the Chesapeake Bay and Virginia's waters designated as impaired by the U.S. Environmental Protection Agency (EPA). This progress report is organized to provide the status of the goals and objectives contained within the Chesapeake Bay and Virginia Waters Clean-up Plan. As such, it contains the detailed goals and objectives within each subsection, but it does not repeat the detailed strategies and background information that can be found in the January 2007 Chesapeake Bay and Virginia Waters Clean-up Plan and in subsequent updates in 2008 and 2009.

Wastewater

Updates on grants from the Water Quality Improvement Fund will be included in the fall version of this report as required by the Code of Virginia. The waste water discharger goals in the Tributary Strategies have been met and are now superseded by the allocations contained the Chesapeake Bay WIP. With the next update, this plan will incorporate the goals of the WIP and therefore future reports will describe accomplishments of the wastewater sector in the context of meeting WIP load allocations and schedules.

Discharges from Boats

Performance measurement: Report semi-annually on outreach efforts and No Discharge Zone (NDZ) designations being pursued

The Department of Environmental Quality (DEQ) is currently focusing on tidal creeks fringing Virginia's Northern Neck (the peninsula of land separating the tidal Potomac and Rappahannock Rivers). This area was selected based on need (22 bacteria TMDLs, covering over 90 individual shellfish impairments, completed since 2000), high density recreational boat traffic, and stakeholder support expressed at public meetings. Working in collaboration with the Northern Neck Planning District Commission, DEQ completed boat-based shore reconnaissance and boat traffic estimates for the area's shoreline in fall 2010. The four NDZ applications scheduled in this project have been completed, presented to stakeholders during four public meetings, and advertised using a public notice and public comment process. The bodies of water affected by these applications are listed in Table 1. DEQ anticipates submitting the first applications to EPA by the summer of 2012, with the project scheduled to be complete by spring of 2013.

Table 1 Completed applications for Federal No Discharge Zone Designations

Bodies of Water	Affected Location
Farnham Creek, Lancaster/Morattico Creek	Richmond County
Mulberry, Deep, Greenvale, Paynes, Beach, Whitehouse, Town, Myer, Moran, Taylor, Carter, Mosquito, Oyster, Windmill Point Resort Boat Basin, Antipoison, Davenport, Tabbs, Dymer, and Indian Creeks, and East and West Branches of the Corrotoman River	Lancaster County
Jarvis Creek, Prentice Creek, Dividing Creek, Cloverdale Creek, Great Wicomico River, Little Wicomico River and Ingram Bay, Cod Creek, Coan River and the Glebe, Judith Sound, Yeocomico River	Northumberland County
Bonum Creek, Jackson Creek, Gardner Creek, Ragged Point, Branson Cove, Lower Machodoc Creek, Glebe Creek, Cabin Point Creek, Nomini Creek, Poor Jack Creek, Currioman Creek, Cold Harbor Creek, Mattox Creek, Monroe Bay, and Rosier Creek	Westmoreland County

A NDZ application for Rudee Inlet and Owl Creek in Virginia Beach continues to be under development by the Lynnhaven River Now organization. The Middle Peninsula Planning District Commission, which represents the peninsula of land separating the Rappahannock and York Rivers, and the Go Green Committee of the Gloucester County Board of Supervisors each requested a list of impaired streams for potential NDZ designation in their respective geographic ranges. DEQ provided the list and associated maps in the fall of 2011.

There are currently three federally approved NDZs in Virginia. These NDZs are listed in Table 2.

Table 2: Approved Federal No Discharge Zone Designations

Bodies of Water Affected	Location
Broad and Jackson Creeks and Fishing Bay	Middlesex County
Lynnhaven Bay	Virginia Beach
Smith Mountain Lake	Bedford, Roanoke

TMDL Development

To meet the 1999 Consent Decree (CD), Virginia completed TMDLs covering approximately 225 shellfish and 375 non-shellfish CD impairments, and approximately 198 non-CD impairments. In addition, Virginia completed TMDLs for 28 CD waters and 18 non-CD waters covered under the EPA-lead Chesapeake Bay TMDL. Virginia has also received credit under the CD for an additional 145 delisted or re-categorized impairments.

Virginia continues to develop TMDLs and it is estimated that more than 1100 waters will require TMDL development in the coming years. To accommodate this increase in TMDL development with level funding, Virginia has moved to a large watershed approach for managing multiple impairments. This approach allows watersheds with similar characteristics to be combined under a single TMDL analysis. It also establishes a structure to combine TMDLs and Implementation Plans (IPs) for cost efficiency.

Virginia anticipates completing TMDLs for approximately 100 impaired segments by September 1, 2012, and an additional 50 impaired segments by September 1, 2013. For additional information on Virginia's TMDLs and associated efforts please visit:

http://www.deq.virginia.gov/Programs/Water/WaterQualityInformationTMDLs/TMDL.aspx

The impact of nonpoint sources of pollution on water quality is a major focus of TMDLs. The Department of Conservation and Recreation (DCR) coordinates the implementation of best management practices (BMPs) designed to curb nonpoint sources, and DEQ tracks the progress of these efforts through monitoring and assessment. Promising results have been observed throughout the state:

- Elevated fecal coliform levels in Virginia Beach's Lynnhaven Bay, Broad Bay and Linkhorn Bay violated Virginia's bacteria water quality standard in shellfish-supporting waters and prompted the Virginia Department of Health (VDH) to close these waters for shellfish harvest in 1998. As a result, DEQ listed these three waterbodies on Virginia's 1998 303(d) List of Impaired Waters for fecal coliform. Virginia Beach and its partners implemented numerous best management practices that reduced fecal coliform bacteria and allowed the impaired waters to achieve the standards for shellfish waters in portions of these water bodies.

- Agricultural and residential activities in the Middle Fork Holston River watershed in southwestern Virginia have caused the river to become impaired by sediment and fecal coliform bacteria. Urban and agricultural activities, including targeting failing septic systems and excluding livestock from streams, have helped reduce fecal coliform values to creeks draining into the river, resulting in a 50 percent reduction of bacteria water quality violations in one of those creeks.

- Runoff from agricultural and residential activities along with livestock stream access have contributed to water quality impairments to Virginia's Muddy Creek and Lower Dry River in the Shenandoah River Valley. Both waterbodies violate the state water quality standard for bacteria, and excess sediment and phosphorus loads have further degraded aquatic life in Muddy Creek. These water quality problems placed Muddy Creek and the Lower Dry River on Virginia's 303(d) List of Impaired Waters. Over four years, project partners installed a number of agricultural and residential BMPs that helped mitigate many of the causes of water quality degradation. Bacteria counts have significantly declined in both streams since 2001. The Lower Dry River is close to meeting bacteria standards. Improvement in the integrity of benthic communities has also been observed in small tributaries to the Lower Dry River.

- Batie Creek was listed on Virginia's 303(d) List of Impaired Waters in 1998. The creek was listed because of low dissolved oxygen levels, caused by inflows of anoxic leachate due to a lumber company's improper disposal of sawdust. The low dissolved oxygen levels negatively affected a population of endangered cave isopods (a type of crustacean) in Batie Creek's headwaters. With help from an array of partners, led by the Karst Program of the Virginia Department of Conservation and Recreation's Division of Natural Heritage, the company removed and reused most of the decomposing sawdust. Dissolved oxygen levels have rebounded, prompting the removal of Batie Creek from the Impaired Waters List.

- Numerous implementation actions had occurred to address the Willis River impairment, including: (1) 18 miles of livestock exclusion stream fencing installed, resulting in removal of 2,577 livestock from having direct stream access, (2) one loafing lot management system for a dairy was installed, (3) ten septic tanks have been pumped out, and an additional three are contracted for, (4) one septic system has been repaired and three repairs are contracted for, (5) one septic system has been replaced and two more are contracted for, and (6) an alternative waste treatment system is contracted for. As a result of these actions, the bacteria standard violation rate has been reduced to 10% or less for significant portions of the Willis River resulting in a partial de-listing from the Impaired Waters List.

Discharges of Toxic Substances

Performance Measurement: Report semi-annually on TMDL clean-up plan development and implementation or waters impacted by toxic contamination

Polychlorinated Biphenyl (PCB) TMDLs

The following bulleted items represent the current status of TMDL development and implementation relating to PCB:

- Elizabeth/Tidal James River: PCB source investigation work is on-going in these waterbodies. As part of TMDL development, PCB point source monitoring was requested from those VPDES permits identified as possible contributors to fish impairments. Efforts are also underway to more accurately account for regulated storm water inputs as well as contaminated site loadings. The TMDL is scheduled to be completed in 2013.

- Roanoke (Staunton): This TMDL was approved by EPA in early 2010. The Roanoke TMDL monitoring identified three significant PCB sources. TMDL implementation has been initiated and includes monitoring requirements for an extensive list of VPDES permits. Pollutant Minimization Plans have been submitted to DEQ from the known active point sources and will be required for newly identified facilities that discharge elevated levels of PCBs.

- Levisa Fork: This TMDL was completed in April 2010. Since TMDL monitoring has not revealed a viable source(s) of the contaminant, this particular TMDL was submitted to EPA as a phased TMDL. As a phased TMDL, a monitoring plan to collect additional data and a commitment date to reopen the TMDL was included.

- New River: PCB source identification has been initiated. Ambient river water PCB monitoring has been completed while monitoring requirements for VPDES permits is on-going. The TMDL is targeted for completion in 2014.

Mercury TMDLs:

The following bulleted items represent the current status of TMDL development and implementation relating to mercury:

- North Fork Holston River: This TMDL was completed in 2011. A fish consumption advisory for mercury extends approximately 81 miles from Saltville, Virginia to the Tennessee state line. While most of the river mercury originated from the Olin plant site, this contaminant has been distributed throughout the floodplain downstream. The TMDL identified that most of the current mercury loadings originated from the former plant site and have been distributed throughout much of the watershed and floodplain. In order to meet the TMDL loadings, mercury reductions will be needed from all contributors.

- South and Shenandoah Rivers: This TMDL was completed in 2010. The South River has a fish consumption advisory that extends about 150 miles from Waynesboro to the confluence of the Shenandoah and Craig Run. The primary source of mercury deposited in the floodplain occurred during the 21 years of DuPont facility operations. Atmospheric deposition was not identified as a significant mercury source. Fish tissue from a reference site above a dam contained elevated amounts of mercury. Unfortunately, mercury levels in fish tissue from this portion of the river have not shown a decline since the use of mercury was eliminated by DuPont in 1958.

Onsite Sewage Disposal

The Virginia Department of Health (VDH) database, the Virginia Environmental Information Systems (VENIS), is the main record keeping tool for all VDH environmental health programs. The database includes records of on-site sewage disposal system repair permits. There are no updates available for the reporting period. Fiscal year updates will be available for the November 1 report.

Repair permits are issued for basic items such as replacing septic tanks and distribution boxes, but also include complete system replacement such as installing wastewater treatment systems and pressure dosed drip irrigation fields. Currently, the VDH database does not track the different types of repairs nor does it recognize any nitrogen reducing

technologies; so VDH does not have the ability to report this information. Efforts continue to modify the database so that Virginia can begin reporting BMPs for on-site systems that are recognized by the Chesapeake Bay Model. That effort is expected to be completed in 2012.

Agriculture and Forestry

GOAL: Widespread adoption of cost-effective agricultural best management practices

Objective: Implement to the maximum extent practicable effective agricultural BMPs to significantly advance the Commonwealth's nutrient and sediment pollution reduction goals by 2025 and beyond

Performance Measurement: Pounds of nitrogen and phosphorus reduced through the implementation of key agricultural BMPs

Implementation of agricultural BMPs continues to be a core area of focus for the Commonwealth as it endeavors to achieve its water quality goals. Agricultural conservation practices are highly effective at reducing excessive nutrients. State financial incentives for BMP implementation are administered by the Agricultural BMP Cost-Share Program at the Department of Conservation and Recreation. Estimated Nutrient Reductions for key practice implementation, through December 31, 2011 are listed in Table 3.

Table 3 Estimated Nutrient Reductions for Key Practices

Practice	Level of Implementation	Total Nitrogen Pounds Reduced	Total Phosphorus Pounds Reduced
Nutrient Management	759,448 acres	319,727	38,596
Cover Crops	21,293 acres	360,925	75,482
Livestock Exclusion	121,463 linear ft.	31,597	6,515
Stream Buffers	123 acres	1,287	267
Continuous No-Till	665 acres	3,616	665

Resource Management Plans (RMPs)

In 2011, the General Assembly passed legislation requiring the promulgation of regulations for the development and implementation of agricultural RMPs. Proposed regulations have been drafted based on the input of a Regulatory Advisory Panel (RAP) established for this purpose, and were presented to the Virginia Soil and Water Conservation Board on March 29, 2012. A 60-day public comment period on the proposed regulations is targeted to begin in mid-July and final regulations are expected to be completed in late 2012 and implemented in early 2013.

The RMP regulations set forth specific criteria for the implementation of a suite of agricultural BMPs as needed to reduce pollution runoff and will serve to promote greater

and more consistent use of agricultural practices across the state. The RMP regulations, though voluntary utilization of agricultural BMPs by land owners will provide a consistent level of pollution reduction goals or "certainty" related to the Chesapeake Bay TMDL for the duration of the land owner's certification provided they remain compliant with their plan. The RMP may also be used as a baseline for participation in the expanded nutrient credit exchange program. By incentivizing such practices, the RMP program can serve as a mechanism for localities to implement their agricultural strategies and BMPs. DCR will continue to work with the RAP and Soil and Water Conservation Districts (SWCDs) to identify strategies that could incentivize the program. For example, the targeted use of agricultural cost-share dollars for RMPs will be evaluated.

GOAL: Implement nutrient management on lands receiving poultry litter

Objective: Revise the current poultry litter management program to assure that all land application of poultry litter will be in accordance with prescribed nutrient management planning practices

Performance Measurement: Number of acres of nutrient management plans written and implemented and tons of litter and nutrients transferred

Efforts continue to be pursued relative to this objective. As of December 2011, DCR had written 139,616 acres in nutrient management plans. Private sector plans written during the period July 1, 2010 to June 30, 2011 total 276,975 acres within the Bay watershed and 21,200 in the southern rivers watershed.

The Department of Conservation and Recreation (DCR) and the Virginia Poultry Federation (VPF) have a cooperative effort to cost-share the transport of poultry litter from areas of concentrated poultry production in the Shenandoah Valley to areas where soil analyses indicate that crops need additional phosphorus outside of the Chesapeake Bay watershed. The DCR and the VPF each contribute equally in litter transport cost-share funding. The program pays $15 per ton of poultry litter transferred from either Page or Rockingham counties. Nutrient management plans submitted with applications for this program are reviewed by DCR staff, and all litter that has been transferred under this program has been applied in accordance with these plans. The goal is to transport 5,000 tons annually. In 2011, almost 6,335 tons of transported poultry litter was approved for payment utilizing the program.

GOAL: Significantly reduce the phosphorus content of poultry, swine, and dairy manures through aggressive diet and feed management

Objective: Reduce the phosphorus content in poultry litter by 30% and swine manure by 35% through wide-spread adoption of feed supplements throughout Virginia's poultry and swine industries and achieve a 10% phosphorous content reduction in dairy manure through improved diet and feed management

Performance Measurement: Percentage reduction in phosphorus content of sampled poultry litter and swine manure

Memorandums of Agreement were signed with six poultry integrators in November, 2007. These signings established a goal of achieving a 30% reduction level in phosphorus excreted in broiler and turkey litter for each integrator (as compared to baseline data) by December 31, 2010. Monitoring of each poultry integrator's phosphorus reduction began on July 1, 2008, and continued annually throughout the Memorandums' three year life span. Reductions were calculated using baseline poultry litter analyses conducted in years before the use of the phytase enzyme in poultry feed was implemented. Differing clean-out practices were also figured into the calculations. DCR staff met with each integrator individually to inform them of the results of the monitoring and discuss with them any needed adjustments for them to achieve full compliance with the 30% reduction goal. Although some integrators and/or complexes have not met their individual goals, the poultry industry as a whole has met the 30% phosphorus reduction goal overall for 2011 with a composite average reduction of 34.67%.

DCR is investigating working with the primary swine integrator in Virginia, Murphy Brown, LLC, to evaluate phosphorus reduction levels achieved to date in swine feed and manure. Efforts to establish a Memorandum of Agreement with Murphy Brown and other swine integrators in Virginia to reduce phosphorus levels further will be pursued if a 35% reduction goal has not already been reached.

Performance Measurement: Percentage of dairy animals in the Chesapeake Bay in dairy operations utilizing diet and feed modification technology

The Department of Conservation and Recreation funded a Dairy Precision Phosphorus Feeding program to help reduce phosphorus in dairy feed. DCR contributed $400,000 of Water Quality Improvement Fund (WQIF) funds to create this pilot incentive program for dairy producers. An additional $880,000 in federal grant funds was leveraged through the use of these state funds. Farmers who met performance targets for phosphorus in their rations were eligible to receive incentive payments. Producers who participate in the program also received free feed and manure analyses.

The program had 163 herds complete sufficient sampling to generate an annual summary of phosphorus feeding levels. There was a reduction of phosphorus fed and thus excreted of 2.65 lbs. per cow per year or 32.6 total tons per year in the 24,522 cows in these herds. A 19% reduction in excess phosphorus fed was achieved in these herds. In addition, approximately $126,804 was approved for incentive payments to Virginia dairy farms, and $166,804 was used for 7,047 lab analyses in support of better feeding management to reduce environmental pollution potential from dairy farms.

A newsletter was prepared for all farm participants summarizing results from the project. In addition, results were shared via newsletters and magazine articles. Programs were conducted highlighting impacts of the project.

GOAL: Protect surface water resources through the implementation of silvicultural regulation and Department of Forestry programs

Water quality is important to all Virginians. Studies have shown that the cleanest water comes from forested watersheds. These watersheds are critical sources of pure drinking water, habitat for important fisheries, and areas that are treasured for their recreational value and purity of life. Two of the Department of Forestry's important measures involve water quality. One focuses on Best Management Practices on forest harvesting operations and protecting streams from sediment. The other focuses on improving and protecting watersheds through management and land conservation.

The Virginia Department of Forestry (VDOF) has been involved with the protection of our forested watersheds since the early 1970s with the development of our first set of BMPs for Water Quality. The Department is now utilizing the fifth edition of those guidelines which came out in 2011. The backbone for the Department's water quality effort is the harvest inspection program, which began in the mid-'80s. This program has provided for one-on-one contact between VDOF and the harvest operators and a welcomed opportunity to educate the operators on BMPs and the latest in water quality protection techniques. In fiscal year 2011, VDOF field personnel inspected 5,905 timber harvest sites across Virginia on 248,165 acres or a 43% increase in the number of harvested acres inspected over FY2010.

Another main focus of the VDOF water quality program is logger education. Since the development of the first BMP Manual for Virginia, the VDOF has been involved in the training of harvesting contractors in water quality protection techniques ranging from harvest planning, map reading, and the use of GPS units, to BMP implementation. This occurred through training that the agency sponsored and, more recently, through VDOF participation in the Sustainable Forestry Initiative SFI ®, a forest industry sponsored certification program called SHARP (Sustainable Harvesting and Resource Professional) Logger Training Program. This program requires all harvesting professionals that desire to provide wood to SFI Companies to attend regular training through the SHARP Program. The core training for this program consists of modules in BMPs for Water Quality Protection, safety, and sustainable forestry. This program is fully supported and paid for by the forest industry in Virginia, and VDOF provides all of the instructors for the BMP portion of the program as well as other modules during the training process. Since 1997, this program has enabled VDOF to assist in training 6,807 harvesting professionals in 215 different programs relating to water quality protection. For fiscal year 2011, there were eighteen training programs offered with 483 attendees present. Six of these courses were in the core area with 199 attendees, and the remaining twelve courses were for logger continuing education and had 284 attendees.

In July 1993, the General Assembly of Virginia – with the support of the forest industry – enacted the Virginia Silvicultural Water Quality Law, §10-1-1181.1 through §10.1-1181.7. The law grants the authority to the State Forester to assess civil penalties to those owners and operators who fail to protect water quality on their operations. Virginia continues to be the only state in the southeastern United States that grants enforcement

authority under such a law to the state's forestry agency. In fiscal year 2011, the VDOF was involved with 249 water quality actions initiated under the Silvicultural Law. This is a reduction in 11% over FY2010. Of these actions, 12 resulted in Special Orders being issued for violations of the law, and 3 involved the issuance of Emergency Special Orders (Stop Work Orders). None of these proceeded to the issuance of civil penalties. All penalties collected under this law are placed in the Water Quality Penalty Fund, which is a non-reverting fund to be used for education, demonstration and research.

A state-wide audit system has been in place since 1993 to track trends in BMP implementation and effectiveness. Results from the calendar year 2011 data show that overall BMP implementation on 240 randomly selected tracts is 84.5 percent. That represents an increase of two percentage points over the previous audit cycle. The audit results also show that 98.7 percent of the sites visited had no active sedimentation present after the close-out of the operation, a 1 percent increase over the previous audit cycle. The information compiled using this audit process will be the basis of reporting for the Commonwealth's WIP. Since the information is captured through GIS technology, it can be compiled spatially for reporting on those forestry operations that occur within the boundaries of the Bay watershed. This whole BMP Implementation Monitoring effort has been automated over the past year to be compatible with the VDOF's enterprise database system known as IFRIS (Integrated Forest Resource Information System).

The VDOF continues to offer cost-share assistance to timber harvest operators through a unique program offered through the utilization of funding from the Commonwealth's Water Quality Improvement Fund. This unique program cost-shares the installation of forestry BMPs on timber harvest sites by harvest contractors.

Watershed Protection through Forest Conservation

Forests provide the best protection for watersheds. Because of this, one of the department's goals is to increase the amount of forestland conserved, protected, and established in Virginia's watersheds. The focus is on practices that most effectively improve water quality. These include practices that conserve land permanently, establish and maintain riparian buffer zones, result in trees planted on non-forested open land, and increase urban forest canopy through planting trees. All of these activities are closely related to meeting water quality goals associated with the Chesapeake Bay restoration and watersheds for Virginia's southern rivers.

The Department and other state agencies have been very active and have made significant progress in promoting land conservation that will protect watersheds and other forest benefits. In FY 2011, land permanently protected through purchase or private land conserved through a VDOF-held easement totalled 4,428 acres.

Virginia's forestry BMPs that address harvesting have been highly successful. One of the most valuable BMPs for water quality is the uncut or partially cut streamside management zone. This voluntary measure assures an unbroken forest groundcover near the stream as well as shade for the water and wildlife corridors. Landowners can elect to

receive a state tax credit for a portion of the value of the uncut trees in the buffer. By doing so, they agree to leave the buffer undisturbed for 15 years. The number of landowners electing this option is increasing, and in FY 2011, 31 landowners participated in this watershed protection option by retaining timber valued at $745,804.19 in the streamside areas of their property.

Forests provide superior watershed benefits over every other land use. Because of this, the Department is encouraging planting of open land with trees and establishing new riparian forested buffers where none previously existed, and providing protection of existing riparian forests through a tax credit. In the 2011 season, trees were established or protected on 3,292 acres of land.

Developed and Developing Lands

During the 2011 Virginia General Assembly Session, House Bill (HB) 1831 was passed. This legislation advances many of the strategies identified in Virginia's Phase I WIP to reduce the nutrients used in the urban setting. The legislation includes, among other provisions, a prohibition on the sale, distribution, and use of general lawn maintenance fertilizer containing phosphorus, effective December 2013. Several manufacturers have already implemented the formulation changes, making phosphorus free lawn fertilizers available in many retail stores.

GOAL: Implementation and compliance of erosion and sediment control (ESC) programs state wide

Objective: By the end of 2010, 90% of the 164 local erosion and sediment programs will be consistent with the requirements of the Virginia Erosion and Sediment Control Law

Performance Measurement: Number of local program reviews completed annually and percentage of programs reviewed in compliance with state standards

At the end of FY11, 154 of 164 programs (93.9%) had been found consistent with the Virginia Erosion and Sediment Control Law and Regulations. All of the programs were reviewed over the preceding 5 years. Programs that were found to be inconsistent at the time of the review will be provided continuing assistance by the Virginia Soil and Water Conservation Board and DCR Regional Offices until they are found to be consistent.

From July 2010 through June 2011, the local ESC program review process was under revision. Therefore, no program reviews were performed during the July 1, 2010 – June 30, 2011 period. Local ESC program reviews were continued in FY 2012. So far this fiscal year, reviews have been initiated on twenty-four local programs.

GOAL: Implement revised stormwater management program

Objective: Complete the revision of Virginia's stormwater management regulations and implement the regulations statewide with maximum local government adoption.

Performance Measurement: Upon completion of the regulatory revision process, progress will be tracked semi-annually through future revisions to the Clean-Up plan as follows:

- Number of localities with a Virginia Soil and Water Conservation Board approved stormwater program
- Number of construction sites that require the stormwater general permit that have obtained permit coverage
- Number of DCR and locality inspections of permitted sites

Revised stormwater management regulations were approved and were effective on September 13, 2011 with implementation to occur effective July 1, 2014. Until such time as local implementation occurs, all Virginia Stormwater Management Program (VSMP) permitting is DCR's responsibility.

In 2012, the General Assembly passed HB1065 and SB407, requiring all localities, except towns that do not operate a municipal separate storm sewer system, to adopt local ordinances consistent with the new stormwater regulations. Once the Virginia Soil and Water Conservation Board has approved the local programs developed as a result of HB1065 and SB407, local government stormwater management programs and the VSMP permitting process will be synchronized forming a 'one-stop-shop' for stormwater permitting and compliance at the local level. The expected date for local program implementation is July 1, 2014.

There are presently no localities with Board approved stormwater programs under the new law and regulations. All VSMP coverages were issued by DCR for the present reporting period. DCR issued 2,029 VSMP permits during the reporting period, including 205 VDOT permits and 1,824 non-VDOT permits.

DCR has initiated an extensive outreach effort that began in November 2011 to communicate with localities regarding the implementation of local stormwater management programs, the specific criteria of the revised regulations, and the tools and assistance the state will provide to local programs.

DCR has also initiated a "Stormwater Regulation Roll-Out" process that will include the development of a comprehensive, multi-phased education and training program for local government staff and private sector engineers. It will also include developing a tool box for local governments to use in the establishment of their local stormwater programs. This tool box will include a model ordinance, checklists of minimum local program provisions, and template plan review checklists, among other items. In addition, the agency is identifying funding sources to assist with local government program development costs.

DCR has convened a Stormwater Local Government Advisory Committee (SWLGAC) which held its first meeting March 29, 2012. The SWLGAC will assist DCR in the evaluation and improvement of the tool box, provide feedback on local government needs, and better inform DCR outreach efforts including regional meetings through Planning District Commissions (PDCs) and Soil and Water Conservation Districts (SWCDs) as well as individual locality meetings.

Implementation of these regulations will result in stormwater management criteria being consistently implemented by local governments across the state, thereby significantly increasing the amount of post construction stormwater treatment provided for new development and re-development.

The local implementation of the stormwater regulations and Municipal Separate Storm Sewer System (MS4) permitting are the key vehicles that will be used by the localities to implement BMPs and other strategies that are included in the Phase II WIP.

GOAL: Incorporate specific water quality protection measures into local land development codes, ordinances, and processes.

Objective: Conduct Tidewater locality code and ordinance review by DCR staff by December 2010. Review will determine the extent to which the Tidewater localities are implementing measures to protect water quality, particularly requirements to reduce impervious cover, minimize land disturbance, and maintain indigenous vegetation

Performance Measurement: Number of local governments compliant with BMP maintenance, septic pump-out, and Phase III requirements

As of March 2012, code and ordinance reviews have been completed for 66 of the 84 Chesapeake Bay Preservation Act localities, with an estimated completion date for the remainder of June of 2012. These code and ordinance reviews are part of a larger initiative to ensure that Phase III of the Chesapeake Bay Preservation Act regulations is being adequately administered by local governments. Phase III requires the Tidewater local governments to review local land development ordinances, and revise them if necessary, in order to ensure their ordinances adequately protect the quality of state waters. An important element of Phase III is the requirement for local ordinances to have specific standards to ensure that development in Chesapeake Bay Preservation Areas minimizes land disturbance, preserves indigenous vegetation, and minimizes impervious cover (three performance criteria), as well as six specific requirements for approved plats and development plans. Phase III also involves the identification and resolution of obstacles and conflicts to achieving the water quality goals of the Chesapeake Bay Preservation Act within local programs and ordinances. Although DCR cannot yet quantify the level of accomplishment achieved by the local code changes, progress has been made in this area.

To assist local governments in reviewing local ordinances, DCR developed two checklists. The Plan and Plat Consistency Review Checklist will determine if a locality has developed/reviewed the six plan and plat provisions that must be contained in local ordinances, as they are specifically required by the Regulations. The Checklist for Advisory Review of Local Ordinances is being used to determine if there are adequate provisions to include the three performance criteria and contains numerous examples of requirements that may be contained within a locality's land development ordinances. From September of 2009 through June of 2012, DCR staff has been working with local government staff to evaluate local ordinances and processes to determine the extent to which specific provisions exist to enable the locality to implement the requirements of the regulations described above. Based on this review, localities may choose to modify ordinances and processes to address development standards that benefit water quality.

Compliance with the Phase III provisions is currently being evaluated through the advisory code and ordinance reviews discussed above and the current round of compliance evaluations. As of March, 2012, 15 of the 84 local programs were reviewed for compliance with these provisions and presented to the Chesapeake Bay Local Assistance Board. Beginning July 1, 2012, the evaluations will become a function of the Virginia Soil and Water Conservation Board. This round of compliance evaluations will proceed through 2016, at which point, all 84 localities will have been reviewed for compliance with all provisions of the Chesapeake Bay Preservation Act regulations.

GOAL: Land conservation efforts

Objective: The Commonwealth will, in conjunction with private and public partners, conserve 400,000 acres of land statewide by January 2014

Upon taking office in January 2010, Governor McDonnell reaffirmed his ambitious goal to conserve an additional 400,000 acres in Virginia by the end of his four-year term. This land conservation goal builds upon the previous bipartisan effort of Governor Kaine and Speaker Howell to also conserve 400,000 acres. This accomplishment contributed towards the Baywide goal of protecting 20 percent of the lands in the Chesapeake Bay watershed by 2010. As of March 15, 2012, the Commonwealth reported that the current status of land conservation in the Bay area of Virginia stood at 19.53 percent (or 2,700,771.33 acres). Governor McDonnell's 400,000-acre statewide goal furthers both the Chesapeake Bay commitment and conservation of important lands in Virginia's southern river watersheds. In addition to meeting water quality objectives, protecting land helps to meet conservation goals related to working lands, outdoor recreation, natural areas, and quality of life.

Protecting land, particularly riparian lands, was a critical element of Virginia's Chesapeake Bay Tributary Strategies and will help restore and protect waters statewide. Permanently conserving land not only benefits water quality, but it also protects Virginia's natural, historic, recreational, scenic, and cultural resources and helps reverse the loss of working landscapes like forest and farms. As of March 15, 2012, even in this

tough economic climate, more than 114,100 acres has been conserved towards the Governor's goal
Strategy:

- Maximize the use of existing state land conservation tools and incentives including the Virginia Land Conservation Foundation, the Virginia Outdoors Foundation, the Department of Historic Resources, the Virginia Land Preservation Tax Credit program, the Virginia Coastal Program, Farmland Preservation, and the Clean Water Revolving Loan Fund
- Continue coordination among state agencies and private, federal, and local partners on land conservation priorities
- Support currently established local purchase of development rights programs and encourage the creation of new programs where they currently do not exist
- Employ geographic information based systems to identify lands with multiple conservation values to maximize water quality and other benefits

Performance Measurement:

- Number of acres conserved by 2014 as reported every other month and annually by the Department of Conservation and Recreation within the Chesapeake Bay and Southern Rivers watersheds (www.dcr.virginia.gov/land_conservation/index.shtml)

Resource Extraction

GOAL: Reduce water quality impacts associated with former resource extraction activities by proper site planning and best management practice implementation.

Objective: Reduce erosion on abandoned or orphaned mined land. Include water quality goals in prioritization of areas for reclamation activities.

Orphaned lands are those areas disturbed by the mining of all minerals, except coal, which were not required by law to be reclaimed or have not been reclaimed. Funds for the reclamation of orphaned mines are obtained from interest monies earned from a state managed industry self-bonding program. Mine operators participating in the program make payments into the Mineral Reclamation Fund based on the acreage disturbed by their operations. The fund assures that active mines will be reclaimed and participation is mandatory under Virginia's Mineral Mining Law. Updates regarding implementation activities through this fund will be available in the November 1 report.

Local/State Coordination

GOAL: Fully achieve local government compliance with septic maintenance and pump-out requirements and BMP monitoring and inspection requirements of the Chesapeake Bay Preservation Act

Objective: Achieve 100% compliance by Tidewater localities with septic pump-out requirements of the Chesapeake Bay Preservation Act by 2010. – This objective has been achieved

Objective: Achieve 100% compliance by Tidewater localities with the urban best management practice (BMP) maintenance requirements of the Chesapeake Bay Preservation Act by 2010. – This objective has been achieved

Objective: Establish voluntary septic tank pump-out maintenance programs in localities outside the Chesapeake Bay Preservation Act area, both within the Chesapeake Bay Watershed and Southern Rivers portion of the Commonwealth

Performance Measurement:

- **Number of localities in compliance with local septic pump-out programs**
- **Number of localities in compliance with BMP maintenance requirements**
- **Number of systems pumped with estimated resulting nutrient reductions**
- **Numbers of BMPs installed along with pollutants removed and acres treated**

As of September 30, 2011, 100% of the 84 Tidewater localities were found by the Chesapeake Bay Local Assistant Board (CBLAB) to have met the septic tank pump-out requirements. In addition, as of September 2011, 100% of the Tidewater localities remain compliant with the BMP maintenance requirements of the Chesapeake Bay Preservation Act regulations. The Chesapeake Bay Preservation Area Designation and Management Regulations (Regulations) require all Bay Act localities to submit an annual report outlining the implementation of their Bay Act programs. As part of the required annual report of Bay Act implementation, localities are also required to track the number of water quality BMPs that have been installed for the previous fiscal year, as well as the acres treated by those BMPs. Therefore, updates regarding pump out implementation will be available in the November progress report.

Chesapeake Bay and Southern Rivers Water Quality Strategic Efforts

GOAL: Chesapeake Bay Total Maximum Daily Load report and implementation plan development

Objective: Work with EPA Chesapeake Bay Program and program partners to establish the Chesapeake Bay TMDL and State Watershed Implementation Plan

Virginia's Phase I Watershed Implementation Plan (WIP) was submitted and approved by EPA on December 29, 2011. The Phase II WIP was developed and submitted to the U. S. Environmental Protection Agency (EPA) on March 29, 2012. These plans were developed as part of the Chesapeake Bay Total Maximum Daily Load (TMDL) requirements. Pursuant to formal guidance communicated by EPA released in March of 2011, the Phase II WIP addresses the following elements:

- Divides the Bay TMDL allocations into local area targets.
- Communicates expected local contributions to and responsibilities for meeting the TMDL allocations.
- Describes how partners will help to reduce loads delivered to the Bay
- Identifies resources, authorities, and other forms of assistance needed to implement actions that achieve TMDL allocations.
- Provides additional demonstration of reasonable as.surance.
- Identifies local, state, and federal partners who will assist with achieving nutrient and sediment reductions.
- Describes how the state is working with its key partners.
- Identifies state strategies to help facilitate implementation of local strategies.
- Establishes clear quantifiable goals.
- Defines systems for tracking, verifying, and reporting progress.
- Involves federal agencies.

The Commonwealth has met these Phase II WIP objectives identified by EPA by undertaking the following:

- Virginia Department of Conservation and Recreation (DCR) staff subdivided the TMDL allocations from a segment shed to a local government level and communicated the resulting local area targets to localities through meetings that were facilitated by regional Planning District Commissions (PDCs) during the spring and summer of 2011.

- During PDC meetings with local government elected officials and staff, Virginia DCR staff explained how the model represented local land use, BMP implementation levels, and loadings from each of the land uses which resulted in these local decision makers gaining a greater understanding of pollutant loadings from the land uses within their jurisdictions. In communicating its desired deliverables to localities, the Commonwealth encouraged local governments to be active partners in improving the TMDL and WIP by updating modeled land use with more accurate local information, updating local BMP implementation progress, and most importantly, providing local BMP scenarios that met local goals and objectives.

- The Commonwealth also asked localities to identify resource needs and strategies to advance the identified BMP scenarios.

The Commonwealth of Virginia's local engagement initiative succeeded in working with our local partners to help them better understand their contribution to, and responsibility for, meeting TMDL allocations. The plan includes strategy tables that clearly articulate ways localities can reduce pollutant loadings in their communities. The state received submittals from 95 percent of localities within Virginia's Bay watershed and has tabulated close to 500 strategies that have been aggregated. Both the high response rate and the number of meaningful strategies submitted by local governments is a clear

indication of an effective outreach strategy and that Virginia localities understand their contribution to and responsibility for addressing the TMDL. However, the timeline provided by EPA for completion of the Phase II WIP did not allow for sufficient vetting, participation from the public prior to submission, endorsement from local stakeholders, and approval by elected officials of strategies submitted by the localities.

The Phase II WIP document describes in detail the local engagement process that has been used to date, how the same successful model will be used going forward, and supplements the strategies and commitments included in Virginia's Phase I WIP approved by EPA on December 29, 2010. Additionally, the Commonwealth submitted final milestones for 2012-2013 to EPA on January 6, 2012. These milestones represent the first set of two-year milestone commitments associated with the Bay TMDL. They provide additional detail on anticipated strategies and implementation. Virginia is committed to working within the accountability framework for the Bay TMDL established by EPA, including adaptive management and the development of future milestones.

Since the submittal of the Phase I WIP, the Commonwealth has implemented several important initiatives that will provide significant progress in meeting nutrient reduction goals. These initiatives include nutrient credit expansion, promulgation of regulations for the development and implementation of agricultural Resource Management Plans (RMPs), revised comprehensive stormwater management regulations, Stormwater Program Improvements and MS4 Permitting, and urban nutrient management. Collectively, these initiatives will serve to advance a significant number of the identified local strategies and provides additional assurance that the actions proposed in Virginia's WIP can be achieved.

Moving forward, the Commonwealth will continue its work to assist stakeholders with planning, capacity building, implementation, tracking/reporting, and innovative activities. Next steps include:

- Refinement and development of new local strategies.
- Targeting implementation to reduce local water quality impairments and the Bay.
- Development of tracking systems to adequately track and report new BMPs for all sectors.
- Provide technical assistance, tools, and guidance to advance local strategies.
- Provide input into future milestone planning efforts.
- Identification of funding opportunities.

For additional information on the Chesapeake Bay TMDL and associated efforts please visit:

www.dcr.virginia.gov/vabaytmdl/index.shtml

www.deq.virginia.gov/vpdes/NutCrdExStudy.html

http://www.deq.virginia.gov/Programs/Water/WaterQualityInformationTMDLs/WaterQualityStandards/RulemakingInfo.aspx#James_Chl_A_study

GOAL: Development of Total Maximum Daily Load reports, implementation plans, and implementation projects

Objective: For each impaired water body a TMDL study must be conducted that identifies the maximum pollutant load allowable and the level to which each pollutant must be reduced to maintain water quality standards. The process includes: developing TMDL reports, developing TMDL implementation plans designed to reduce pollution in order to meet standards, implementation of pollution reduction strategies, and water quality monitoring

Performance Measurement: Number of water bodies removed from the list of impaired waters

To meet the 1999 Consent Decree (CD) that resulted from a settlement by EPA with plaintiffs regarding enforcement of the TMDL provisions of the Clean Water Act, Virginia, under a subsequent memorandum of agreement with the Environmental Protection Agency, completed TMDLs covering approximately 225 shellfish and 375 non-shellfish CD impairments, and approximately 198 non-CD impairments. Virginia has received credit under the CD for an additional 145 delisted or re-categorized impairments.

TMDL Implementation Plan Development

In FY11, DCR and DEQ, along with other agency and non-agency partners, continued to develop TMDL implementation plans and to execute these plans throughout Virginia. Once a TMDL is developed (Table 4) the study report is submitted to EPA for approval. Virginia state law (1997 Water Quality Monitoring, Information, and Restoration Act, §62.1- 44.19:4 through 19:8 of the Code of Virginia), or WQMIRA, requires the development of a TMDL implementation plan (IP) after a TMDL is developed and approved. There is not a mandated schedule for implementation plan development; however, local or state agencies, as well as community watershed groups, can take the lead in developing TMDL implementation plans. The implementation plan describes the measures that must be taken to reduce pollution levels in the stream and includes a schedule of actions, costs, and monitoring. In FY2011, DCR and DEQ completed 9 implementation plans covering 51 impaired segments, and started an additional 3 implementation plans covering 44 impaired segments (Figure 1) that were completed by the end of the calendar year. Since 2000 through calendar year 2011, Virginia has completed 56 implementation plans, covering over 208 TMDL impaired stream segments and 231 impairments.

Table 4: 1999 – 2012 TMDL Development Status

Year	1999 - 2010 CD TMDL	1999 - 2010 Non-CD TMDL	Post CD TMDL Schedule	Totals
2000	11	0		11
2002	24	0		24
2004	91	8		99
2006	170	36		206
2008	132	82		214
2010	172	72		244
2011			120	120
2012			71	71
Totals	**600**	**198**	**191**	**989**

TMDL Implementation

From January 1, 2011 thru June 30, 2011, there were 26 active implementation projects jointly funded by Federal EPA §319(h), state Water Quality Improvement (WQIF) funds, and state Virginia Natural Resources Commitment Funds (VNRCF). Collectively, these projects spent $2,963,203 of cost-share funds implementing 162 agricultural and residential BMPs. This included 116 BMPs funded with 319(h), 21 BMPs funded with VNRCF, and 26 BMPs funded thru WQIF. This implementation resulted in over 112,515 feet of stream exclusion and the reduction of 8.18^{E15} colony forming units (CFU) of fecal coliform bacteria, 21,792 pounds of nitrogen, 1,794 pounds of phosphorous, and 3,880 tons of sediment. Table 5 provides detailed information regarding TMDL watershed implementation projects.

Table 5: 2011 Status of TMDL/ Watershed Implementation Projects

Watershed Area	TMDL Segment	Status	Year Implementation	Lead Agency	Funds Used
A. Projects received 5-7 years of continuous funding from 319(h) administered by DCR. These projects are no longer receiving 319 funds, but may continue to receive funding from other sources.					
1. -Middle Fork Holston River	VAS-O05R	Moderate Improvement	2001-2007	DCR	§319(h)
2. Upper Blackwater River	LAW-L08R	Some Improvement	2001-2007	DCR	§319(h)
3. North River	VAN-B21R, B22R, B27R & B29R	Improvement	2001-2008	DCR	§319(h
4. Holmans Creek	VAV-B45R	Some Improvement	2005-2008	DCR	§319(h
5. Catoctin Creak	VAN-A-02R	Improvement	2005-2009	DCR	§319(h)
B. Projects are being funded by Federal 319(h) as well as State WQIF and VNRCF administered by DCR (for select projects)					
1. Willis River	VAC-H36R	Improvement, Delisted 3 Segments	2005-2012	DCR	§319(h) & VNRCF
2. Lower Blackwater River	VAW-L09R, L10R and L11R	Some Improvement, Delisted	2006-2011	DCR	§319 & VNRCF
3. Thumb, Great, Carter & Deep Runs	VAN-E01R, E02R & E10R	Some Improvement	2006-2012	DCR	§319(h) & VNRCF
4. Big Otter River	VAW-L23R, L25R, L27R, & L28R	Improvement, Delisted	2006-2012	DCR	§319, VNRCF, RFP
5. Cook Creek and Blacks Run	VAV-B25R, B26R	Some Improvement	2006-2012	DCR	§319, RFP, NFWF
6. Mill and Dodd Creeks	VAW-N20R & N21R	No Improvement	2007-2011	DCR	§319 & VNRCF
7. Little and Beaver Creeks	VAS-O07	No Improvement	2007-2012	DCR	§319, RFP, VNRCF
8. Hawksbill and Mill Creeks	VAN-B38R, B39R	Too early to note improvement	2008-2012	DCR	§319(h) & VNRCF
9. Looney Creek	VAW-I26R	Too early to note improvement	2009-2013	DCR	§319 & VNRCF
10. Hazel River	VAN-E03R, E04R, E05R	Too early to note improvement	2009-2013	DCR	§319, WQIF RFP, VNRCF
11. Slate River and Rock Island Creek	VAC-H17R, H21R, H22R	Too early to note improvement	2010-2014	DCR	§319, VNRCF
C. Projects have received some WQIA RFP funds (and other funds as well)					
1. Moore's Creek	VAV-H28R	Too early to note improvement	2005+	N/A	WQIF RFP
2. Guest River	VAS-P11R	Too early to note improvement	2005+	N/A	WQIF RFP
3. Smith Creek	VAV-1347R	Too early to note improvement	2008+	DCR	NFWF, NRCS, §319 *
4. Stroubles Creek	VAW-N22R	Too early to note improvement	2006+	N/A	WQIF RFP

NFWF=National Fish and Wildlife Fund grant, NRCS – USDA Natural Resource Conservation Service, VNRCF=Virginia Natural Resource Commitment Fund

Figure 1 indicates the progression of TMDL implementation projects since 2002. The large increase in projects in 2007 is primarily attributed to the targeted use of WQIF resources to initiate additional projects aimed at water impairments where agricultural sources are a primary causal factor.

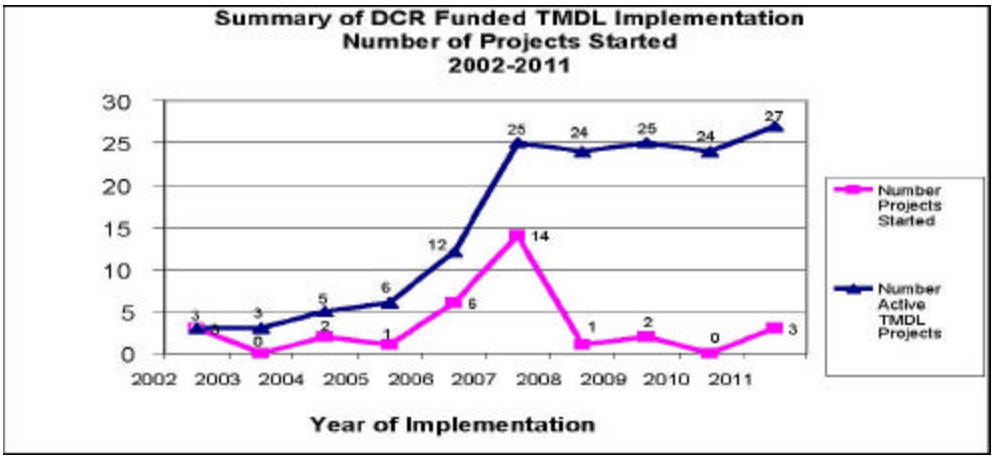


Figure 1: DCR Funded TMDL Implementation

The following tables indicate sources of cost-share funding for TMDLs (Table 6) and a summary of pollutants reduced during FY11 (Table 7).

Table 6: Summary of Targeted TMDL Cost-share Funds Spent (7/1/2011 - 12/31/2011)

	Federal 319(h)	State VNRCF	State WQIF	Total
Cost-Share Paid	$106,307.70	$333,400.26	$423,398.88	$863,106.84
Other Match Funding	$19,906.58	$36,981.02	$61,907.59	$118,795.19
Tax Credit Issued	$116.00	$21.00	$26.00	$163.00

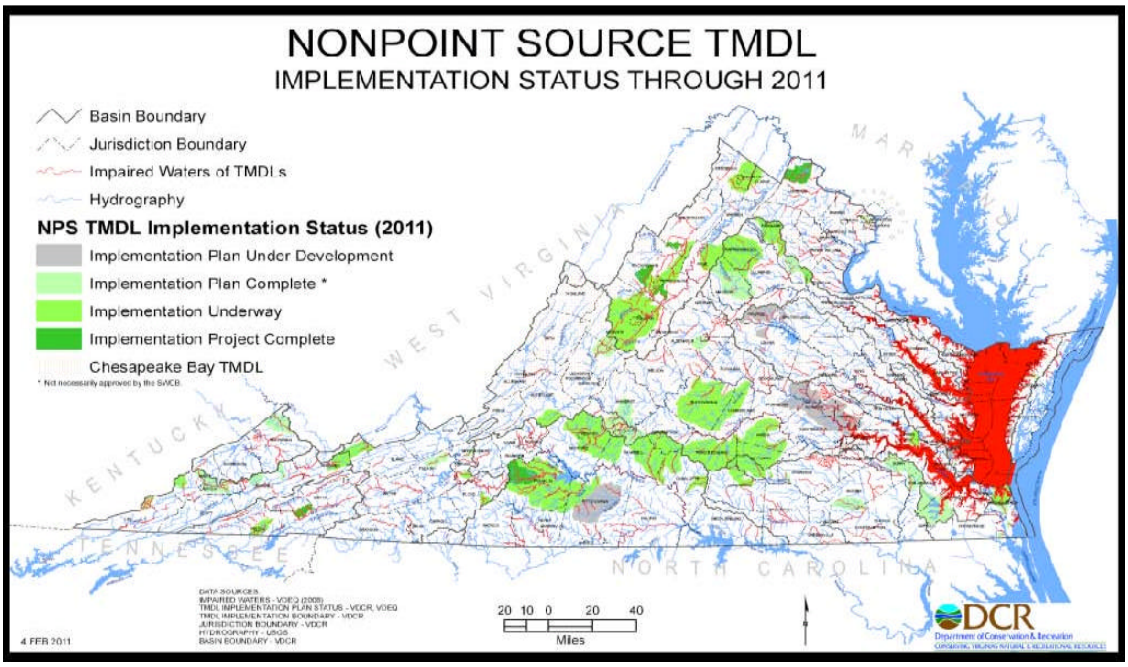
Since the TMDL Implementation program began in 2001 (VA FY02), a total of 32 individual TMDL implementation projects have been funded over the last 10 years as summarized in the following table. A total of 2,791 BMPs have been installed utilizing a total of $13.06 million in federal and state funds spent on cost-share. This activity has resulted in a total of nearly 21,792 pounds of nitrogen reduced, 4,194 pounds of phosphorus reduced, and 3,880 tons of sediment reduced (Table 7). A summary of the BMPs utilized in FY11 for TMDL projects is provided in Table 8.

Table 7: Summary of Pollutants Reduced thru Targeted TMDL Implementation (7/1/2011 - 12/31/11)

Data	Federal 319(h)	State VNRCF	State WQIF	Grand Total
Total Pounds Nitrogen Reduced	3,688.27	4,635.04	13,468.52	**21,791.83**
Total Pounds Phosphorus Reduced	631.43	794.31	2,768.14	**4,193.89**
Total Tons Sediment Reduced	551.71	852.03	2,475.83	**3,879.57**
Total of Bacteria Reduced	5.63E+14	4.47E+15	3.14E+15	**8.18E+15**

Table 8: Summary of BMP implementation for Targeted TMDL Projects (7/1/10-6/30/11)

Practice Code	Name of Practice	# of BMPs installed	Amount Installed	Unit of BMP
LE-1T	Livestock Exclusion with Riparian Buffers for TMDL Imp.	36	99,635	Linear Feet
LE-2T	Livestock Exclusion with Reduced Setback for TMDL Imp.	4	4,922	Linear Feet
RB-1	Septic Tank Pumpout	94	94	System
RB-2	Connection to Public Sewer	1	1	System
RB-3	Septic Tank System Repair	11	11	System
RB-4	Septic Tank System Replacement	4	5	System
RB-4P	Septic Tank System Installation/Replacement with Pump	1	1	System
RB-5	Installation of Alternative Waste Treatment System			System
SL-1	Permanent Vegetative Cover on Cropland	2	40	Acres
SL-6	Stream Exclusion With Grazing Land Management	1	0	Linear Feet
SL-6T	Stream Exclusion with Grazing Land Management for TMDL Imp.	5	2,453	Linear Feet
SL-7T	Support for Extension of CREP Watering Systems - TMDL			Acres
SL-8B	Small Grain cover crop for Nutrient Management			Acres
WP-2T	Stream Protection - TMDL	1	5,505	Linear Feet
WP-3	Sod waterway			Acres
WP-4	Animal waste control facilities	1	1	System
WP-4B	Loafing lot management system	1	1	System



Virginia's Healthy Waters Initiative

The Healthy Waters Initiative continues to gain momentum at the state, regional, and national levels. Significant additional resources dedicated to support this conservation priority were evident in 2011. At the state level, the Healthy Water Initiative continues to grow due to interest from local governments, planning district commissions, soil and water conservation districts, and non-governmental organizations. At the federal level, EPA continues to support the advancement of the Virginia Healthy Waters Initiative. Virginia received funding for Healthy Waters conservation to support the expansion of data collection into the Chowan Watershed, a resource shared with North Carolina. Through this funding a partnership with the Albemarle-Pamlico Sound National Estuary Program, the State of North Carolina Department of Natural Resources, the North Carolina Coastal Management Program, and The Nature Conservancy will work to identify and protect resources in this valuable area. The Chowan contains significant stands of healthy timber and exceptional water resources and opportunities to protect both.

The Virginia Healthy Waters Initiative is also planning to expand to include the resources in the Clinch and Powell watersheds of southwest Virginia. This will also be done through a partnership with The Nature Conservancy as they are currently a strong local ally in this effort. The Nature Conservancy has been successful in engaging local staff and officials in steps to identify and protect areas in these watersheds. A State Code review has been conducted to identify specific areas of the Code that may be modified to include language that supports efforts.

As part of the Chesapeake Bay Program's Maintaining Healthy Watersheds Goal Implementation Team, the strategic plan has been initiated to advance such areas as

outreach and communication, developing a crediting system that could be considered as part of the Chesapeake Bay WIP process, and assessment of a shared fish assemblage strategy with Maryland to improve the robust nature of the data as it relates to the Chesapeake Bay. This work plan will help advance conservation of healthy watersheds across the Chesapeake Bay Watershed. This effort continues to be part of the Chesapeake Bay Action Plan.