

US EPA ARCHIVE DOCUMENT

**REPORT OF THE DEPARTMENT OF CONSERVATION AND
RECREATION**

**VIRGINIA WATER QUALITY IMPROVEMENT
FUND AND THE COOPERATIVE NONPOINT
SOURCE POLLUTION PROGRAM**

And the

**FEDERAL CLEAN WATER ACT SECTION 319
NONPOINT SOURCE POLLUTION
MANAGEMENT PROGRAM**

**TO THE GOVERNOR AND THE GENERAL ASSEMBLY OF
VIRGINIA**



DRAFT

**COMMONWEALTH OF VIRGINIA
RICHMOND
MARCH 2007**



L. Preston Bryant, Jr.
Secretary of Natural
Resources

Joseph H. Maroon
Director

COMMONWEALTH of VIRGINIA
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March 27, 2007

The Honorable Timothy M. Kaine
Governor, Commonwealth of Virginia
Patrick Henry Building, 3rd Floor
1111 East Broad Street
Richmond, Virginia 23219

Members of the Virginia General Assembly
General Assembly Building
Richmond, Virginia 23219

DRAFT

Dear Governor Kaine and Members of the General Assembly:

I am pleased to submit this annual report, *Virginia Water Quality Improvement Fund and Cooperative Nonpoint Source Pollution Program and the Clean Water Act Section 319 Nonpoint Source Pollution Management Program* in accordance with provisions of the Virginia Water Quality Improvement Act of 1997 (WQIA). In §10.1-2127 D, the Department is directed to report to the Governor and the General Assembly on whether cooperative nonpoint source pollution programs, including nutrient reduction programs, developed are being effectively implemented to meet the objectives of the Act. Additionally, in §10.1-2134, the Department is directed to report the amounts and recipients of grants made from the Virginia Water Quality Improvement Fund (WQIF) and the specific and measurable pollution reduction achievements to state waters anticipated as a result of each grant award, together with the amounts of continued funding required for the coming fiscal year under all fully executed grant agreements. This report also fulfills the annual reporting requirement under Section 319(h)(11) of the Federal Clean Water Act for reporting accomplishments of Virginia's Nonpoint Source Pollution Management Program.

This report describes the WQIF and Section 319 nonpoint source pollution management program activities undertaken by DCR during 2006. The efforts to address nonpoint source pollution highlighted in this report reflect the Commonwealth's commitment to protecting and restoring water quality in rivers, streams, lakes and the Chesapeake Bay. This annual report describes anticipated pollution reductions achieved through agricultural cost share assistance and water quality improvement cooperative NPS grant projects. In addition, the report describes pollution prevention accomplishments related to implementation of the Nonpoint Source Pollution Management Program.

***State Parks • Soil and Water Conservation • Natural Heritage • Outdoor Recreation Planning
Chesapeake Bay Local Assistance • Dam Safety and Floodplain Management • Land Conservation***

WQIF activities include development of WQIF guidelines, agricultural cost-share funding allocations, and support for the Conservation Reserve Enhancement Program, and nonpoint source programs and projects. In enacting the WQIA, the General Assembly pronounced that the restoration, protection, and improvement of the quality of state waters is a shared responsibility among state and local governments and individuals, and to that end, established the authority for cooperative programs related to nutrient reduction and other types of nonpoint source pollution. In order to accomplish this, DCR assists local governments, soil and water conservation districts, and individuals with technical and financial assistance made available through WQIF grants and other funding sources.

The activities identified in this report set the stage for continuing Virginia's ambitious water quality improvement agenda. The Department of Conservation and Recreation will continue its partnership with landowners, soil and water conservation districts, local governments, the agricultural community, the development community, conservation organizations, and staff from other Natural Resources agencies, including the Department of Environmental Quality.

The water quality improvements accomplished through the cooperative watershed initiatives and through funding identified in this report help ensure that Virginia meets its responsibilities to protect and restore the Chesapeake Bay and rivers and streams throughout the Commonwealth. Virginia has much to be proud of in this arena but we also have considerable work ahead in order to meet our state goals.

We look forward to working with you to improve Virginia's water quality.

Respectfully submitted,

Joseph H. Maroon
Director

cc: The Honorable L. Preston Bryant, Jr.

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EXECUTIVE SUMMARY

This report fulfills the Department of Conservation and Recreation's (DCR) legislative requirement under § 10.1-2134 of the *Virginia Water Quality Improvement Act of 1997* (WQIA) and § 319(h)(8) and (11) of the Federal Clean Water Act (33 USC 1329). This report describes the nonpoint source pollution management program activities undertaken by DCR and cooperating agencies during 2006. These activities include nonpoint source pollution management program implementation, submission of project proposals and selection of grant awards, agricultural cost-share funding allocations and BMP implementation, support for the Conservation Reserve Enhancement Program (CREP), FY2006 grant awards for nonpoint source programs and projects, and planned use of recent funding. Chapter 21.1 of Title 10.1 of the *Code of Virginia* requires that an annual report be submitted to the Governor and the General Assembly specifying the amounts and recipients of grants made from the Water Quality Improvement Fund (WQIF) and pollution reduction achievements from these grants. WQIF grants awarded to date are provided along with pollutant reductions achieved.

Section 10.1-2127.D., Chapter 21.1 of Title 10.1 of the *Code of Virginia* also directs DCR to report each year to the Governor and the General Assembly on the implementation of cooperative nonpoint source pollution programs in Virginia. In enacting the WQIA, the General Assembly pronounced that the restoration, protection, and improvement of the quality of state waters is a shared responsibility among state and local governments and individuals, and to that end, established the authority for cooperative programs related to nutrient reduction and other types of nonpoint source pollution. In order to accomplish this, DCR assists local governments, soil and water conservation districts, and individuals with technical and financial assistance made available through WQIF and 319 grants and other funding sources. As required by the WQIF this report includes a report on the cooperative nonpoint source program activities.

Section 10.1-104.1 of the *Code of Virginia* states that DCR shall have the lead responsibility for the Commonwealth's nonpoint source pollution management program (as related to CWA Section 319). This section also assigns responsibility for the distribution of assigned funds, identification and establishment of priorities of nonpoint source related water quality problems, and the administration of a statewide nonpoint source advisory committee.

There were no deposits to the Water Quality Improvement Fund for fiscal years 2002, 2003, and 2004. In fiscal year 2005 a deposit of \$9,417,500 was made to the fund. Additional funding became available through WQIF for nonpoint source implementation in FY 2006. The General Assembly amended budget included \$7,500,000 and a General Assembly 2005 action allocated an additional \$22,664,600 for a total of \$30,164,600. The General Assembly allocated another \$39,608,800 in FY2006 Supplemental funds as a mandatory budget surplus deposit. The majority of FY2005, FY2006, and FY2006 Supplemental implementation funds are being directed to the Agricultural BMP Cost Share and Conservation Reserve Enhancement Programs. Implementation funds are also being used to support competitive grants for cooperative nonpoint source programs with localities, strategic nonpoint source water quality initiatives, and programs offered by the Virginia Department of Forestry and Virginia Polytechnic Institute and State University. DCR is charged in assisting in the development of local cooperative NPS pollution

programs, in accordance with the Water Quality Improvement Act, Section 10.1-2124.B. of the *Code of Virginia*. The purpose of the programs is to maintain and restore water quality in stream segments where nonpoint source (NPS) pollution is a significant factor. The outcome of cooperative NPS pollution programs has been a combination of existing efforts and new opportunities that address specific water quality impairments and improvements, supported by the public and numerous stakeholders. DCR reaffirmed existing partnerships and continued to pursue new relationships through cooperative watershed initiatives. DCR's eight watershed offices, throughout the Chesapeake Bay Watershed and the Southern Rivers Watersheds, continued establishing and solidifying conservation partnerships during 2006 with local governments, state and federal agencies, conservation organizations, volunteers, landowners, and local industries and businesses.

In continuing to provide assistance to cooperative watershed roundtables, DCR staff has been working closely with key partners to arrange a statewide meeting of watershed roundtable chairs and other invited guests. A statewide roundtables meeting was held in conjunction with the Environment Virginia Conference in Lexington, Virginia in April 2006.

In cooperation with the other Chesapeake Bay states and the United States Environmental Protection Agency, Virginia agreed to basin level allocations for nutrients and sediments. The Department of Conservation and Recreation, under the guidance of the office of the Secretary of Natural Resources, completed coordination of a year-long public participation planning process to develop tributary strategies. The strategies set the amount of reductions needed to remove the Chesapeake Bay and its Virginia tributaries from the list of impaired waters. Public comment drafts were released in April 2004. The final statewide tributary strategy was released in early February 2005 with individual basin strategies released shortly thereafter.

Estimating future funding needs is a complex endeavor that requires extensive information about the health of waters throughout the Commonwealth. Within the Chesapeake Bay watershed, the Virginia tributary strategies offer a guide to implementation efforts, as well as a best available estimate of implementation costs. In concert with the Tributary Strategy efforts, another significant funding need will be the implementation of TMDL projects to remove waters from the Virginia Department of Environmental Quality's impaired waters list. A cooperative nonpoint source pollution control program, with a watershed-based approach, is expected to increase interest from localities to apply for grant funds to implement water quality improvement projects.

The Commonwealth of Virginia has made progress in protecting and restoring the health of its rivers, streams, lakes, and the Chesapeake Bay through a substantial infusion of state and federal funding resources. With improving budget forecasts of potential increases being provided to the Water Quality Improvement Fund, significant water quality improvements can be achieved. In order to meet the difficult challenge of restoring the health of impaired waters and the Chesapeake Bay, the Commonwealth will have to maintain and build on the progress made in recent years.

CHAPTER 1: NONPOINT SOURCE POLLUTION MANAGEMENT PROGRAM

The Virginia Water Quality Improvement Act of 1997

The *Virginia Water Quality Improvement Act (WQIA)* was passed during the 1997 legislative session of the Virginia General Assembly and signed into law on March 20, 1997. The Act established the Water Quality Improvement Fund (WQIF) to provide funding for water quality improvements throughout the Commonwealth. The fund is the principal source of state cost-share money to implement the nutrient and sediment reduction “Tributary Strategies” prepared pursuant to the Chesapeake 2000 Agreement and the *Code of Virginia*. The fund also provides grants for on the ground practices to control nonpoint source pollution in watersheds in Virginia that drain to waters other than the Chesapeake Bay, called the “Southern Rivers”.

Federal Clean Water Act – Section 319 – Nonpoint Source Pollution

Section 319 of the 1987 Federal Clean Water Act requires that states develop and implement nonpoint source pollution management programs. Section 10.1-104.1 of the Code of Virginia designates the Virginia Department of Conservation and Recreation (DCR) as the lead agencies for the Commonwealth’s nonpoint source pollution management programs. This section also assigns responsibility to DCR for the distribution of assigned funds, identification and establishment of priorities of nonpoint source related water quality problems, and the administration of a statewide nonpoint source advisory committee.

Nonpoint Source Pollution Management Program

Virginia’s Nonpoint Source Pollution Management Program is a diverse network of state and local government programs. The majority of DCR soil and water conservation efforts are devoted to controlling nonpoint source pollution to prevent degradation of the Commonwealth’s waterways. Nonpoint source pollution is water pollution caused by diffuse runoff not confined to a single discharge point such as wastewater treatment plants or industrial discharge pipes and includes runoff from developed lands, agricultural lands, abandoned mines and other sources. Collectively, these programs help prevent water quality degradation and restore the health of our lakes, rivers and bays by promoting and funding state and local watershed planning efforts, water quality monitoring, education and outreach, stream and wetland restoration, and other measures to reduce, prevent and track nonpoint source pollution loads.

Statewide nonpoint source pollution control programs and services support both individual natural resource stewardship and assist local governments with resource management. These statewide programs are funded through state agency budgets, through non-general fund revenues and through federal granting programs. DCR staffs administer nonpoint source pollution control programs required by state and federal law. These programs include erosion and sediment control, stormwater management, nutrient management, agricultural best management practices, shoreline erosion control, floodplain management, dam safety, and public beach conservation as well as the administrative, technical and financial support provided to soil and water conservation districts (SWCDs). Services are delivered to local governments, interest groups and citizens by staff members located in eight regional offices. Central office staff in Richmond serve as support and a resource for field staff.

In implementing the nonpoint source pollution management program, DCR receives advice from the Nonpoint Source Advisory Committee (NPSAC), a state and federal interagency committee. The mission is to serve as a forum to facilitate effective nonpoint source pollution reduction and prevention programs that support the achievement and maintenance of beneficial uses of water throughout the Commonwealth. In addition to DCR, NPSAC is comprised of representatives from the Department of Agriculture & Consumer Services, the Department of Environmental Quality, the Department of Forestry, the Department of Game and Inland Fisheries, the Department of Health, the Department of Mines, Minerals, and Energy, the Department of Transportation, Virginia Cooperative Extension, the Virginia Marine Resources Commission, the U.S. Department of Agriculture Farm Services Agency, the U.S. Forest Service, the U.S. Department of Agriculture National Resources Conservation Service, the U.S. Environmental Protection Agency, and the U.S. Geological Survey.

CHAPTER 2: WQIF PROGRAM ACTIVITIES

Water Quality Improvement Fund Guidelines

Section 10.1-2129.B of the Water Quality Improvement Act directs the Secretary of Natural Resources to develop written guidelines that (i) specify eligibility requirements; (ii) govern the application for and distribution and conditions of WQIF grants; and (iii) list criteria for prioritizing funding requests. The guidelines that covered FY2006 WQIF grant awards were issued in September 2005. Due to substantive amendments to the Act made by the 2006 General Assembly and appropriations language in the approved State biennial budget (both of which became effective on July 1, 2006), the Guidelines were revised. The amendments to the Act only affected the Point Source Grant Program; therefore, no changes were proposed to the Non-Point Source Grant Program guidelines. The Public Comment Draft of the revised WQIF Guidelines was issued July 24, 2006, for a public review and comment period, which ended on September 25, 2006.

The Nonpoint Source Program section of the Guidelines clarify the eligible categories of activities for NPS funding support as: Agricultural Best Management Practices Cost-Share Program, Conservation Reserve Enhancement Program, Water Quality Initiative Projects, and Cooperative Nonpoint Source Pollution Program Projects with Local Governments. The Guidelines specify eligible activities within the Chesapeake Bay watershed and the Southern Rivers watersheds, and also state matching fund requirements, grant review criteria, and grant agreement requirements.

Funding Summary

For fiscal year 2005 and 2006, and including fiscal year 2006 Supplemental funds as part of the caboose bill to close the fiscal year operating budget based on a mandatory budget surplus deposit, a total of approximately \$70 million was available through the Water Quality Improvement Fund for nonpoint source implementation. The Table 1 below summarizes available WQIF funding.

Funding Source	FY2005	FY2006	FY2006 - Supplemental
Governors Budget WQIF*	\$ 1,917,500	\$ -	
WQIF General Assembly 2005 Actions*	\$ -	\$ 22,664,600	
WQIF General Assembly Amended Budget	\$ 7,500,000	\$ 7,500,000	
WQIF Mandatory Budget Surplus Deposit*	\$ -	\$ -	\$ 39,608,800
Subtotal	\$ 9,417,500	\$ 30,164,600	\$ 39,608,800
* Reserved for "Rainy Day Fund" (Typically 15%)	\$ (287,625)	\$ (3,399,690)	\$ (5,712,250)
TOTAL WQIF AVAILABLE FUNDING	\$ 9,129,875	\$ 26,764,910	\$ 33,896,550

Planned Use of Available Funds

As outlined in the WQIF Guidelines this funding is made available for four categories of nonpoint source pollution control projects. The majority of the funding allocation has been made to support the first two categories, the Agricultural Cost-Share Program and the Conservation Reserve Enhancement Program. From FY2005 and FY2006 WQIF allocations, including the FY2006 supplemental funding, over \$53.6 million went to supporting the Agricultural BMP Cost Share Program and \$5.3 million to support the Conservation Reserve Enhancement Program.

The planned use of available WQIF funds also includes over \$10.7 million in funding for other nonpoint source implementation projects. The project funding is made available for NPS programs, projects, and competitive grants through two programs described in the WQIF Guidelines: Strategic Water Quality Initiative Projects and Cooperative Nonpoint Source Pollution Program Projects with Local Governments. A portion of the funding for project categories was awarded through the FY2006 WQIF Request for Grant Applications process, for which further details are provided in the following sections of this report, and the remaining balance will be allocated during an upcoming 2007 competitive grant application process. Summaries of FY2005, FY2006, and FY2006 Supplemental WQIF funding allocations and planned uses are outlined in the Table 2 below.

WQIF Program Funding	FY2005	FY2006	FY2006 Supplement
Agricultural BMP Cost Share Program	\$ 5,629,875	\$ 20,000,000	\$ 53,629,875
Conservation Reserve Enhancement Program	\$ 2,000,000	\$ 2,514,910	\$ 5,374,910
NPS Programs, Projects, & Competitive Grants	\$ 1,500,000	\$ 1,250,000	\$ 1,500,000
Cooperative NPS Local Programs	\$ -	\$ 3,000,000	\$ 3,536,550
TOTAL FUNDING ALLOCATIONS	\$ 9,129,875	\$ 26,764,910	\$ 33,896,550

Agricultural Cost-Share Agreement and SWCD Allocations

Virginia’s Agricultural Best Management Practice Cost-Share Program provides financial assistance as an incentive for the voluntary installation of Best Management Practices (BMPs) to improve water quality. Agricultural BMPs are significant components of all the Chesapeake Bay Tributary Strategies and many Total Maximum Daily Load (TMDL) requirements for impaired streams. DCR relies on Soil & Water Conservation Districts (SWCDs) to implement this program. The Virginia Agricultural BMP Cost-Share Program started in 1984 as a demonstration program that focused on educating farmers about the benefits, both financial and environmental, that various soil and water conservation practices provide. With increased funding levels, DCR is focusing on widespread and targeted implementation of cost-effective BMPs.

Momentum has built for agricultural BMPs because they promise nutrient and sediment reductions and cost-effectiveness as we near 2010. In order to target implementation funding, DCR has established funding priorities for practices recommended by the Chesapeake Bay Commission in their report “Cost Effective Practices for the Bay”. These practices include cover crops, conservation tillage and nutrient management. DCR has also prioritized two other practices with proven water quality benefits: livestock exclusion (fencing livestock out of streams) and the establishment of riparian buffers. These five priority BMPs are emphasized with SWCD program year funding allocation in order to accomplish the most cost effective BMPs for nutrient reduction.

A consistent approach is utilized statewide for FY2006 and FY2006 Supplemental WQIF program year funding allocations for agricultural BMPs. Each SWCD receives a “base” level of funding to implement any of the roughly 30 practices contained within the Ag BMP Program Manual. Each SWCD also receives an allocation of funding for the five priority practices mentioned above, and this amount is specified within the DCR/SWCD Cost-Share grant agreements. Each SWCD also receives an allocation to sign up farmers for specific multi-year “contractual” BMPs that include cover crops, and nutrient management plan development and implementation. In funding emphasis is also targeted to address TMDLs that are attributed to nonpoint source pollutants from agricultural sources. A breakdown of the 2007 program year allocations to SWCDs through grants for agricultural BMP cost-share funding is provided in Appendix A. The overall plan for distribution of the FY2006 and FY2006 Supplemental WQIF for agricultural BMPs is provided in Table 3. In addition, Table 4 provides a summary listing of the TMDL areas receiving targeted WQIF cost-share.

CHESAPEAKE BAY WATERSHED	FY06	FY07	FY08	FY09
Base – All practices	\$ 4,000,000	\$ 4,000,000	\$ 4,000,000	\$ -
Priority practices	\$ 2,000,000	\$ 3,000,000	\$ 3,000,000	\$ -
Contractual FY07-09	\$ -	\$ 2,000,000	\$ 2,450,000	\$ 2,850,000
Targeted TMDL	\$ -	\$ 750,000	\$ 750,000	\$ -
Chesapeake Bay Sub-Total	\$ 6,000,000	\$ 9,750,000	\$ 10,200,000	\$ 2,850,000
SOUTHERN RIVERS WATERSHEDS	FY06	FY07	FY08	FY09
Base – All practices	\$ 3,000,000	\$ 3,000,000	\$ 3,000,000	\$ -
Priority practices	\$ -	\$ 1,000,000	\$ 1,000,000	\$ -
Contractual FY07-09	\$ -	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000
Targeted TMDL	\$ 1,000,000	\$ 1,900,000	\$ 2,300,000	\$ -
Southern Rivers Sub-Total	\$ 4,000,000	\$ 6,900,000	\$ 7,300,000	\$ 1,000,000
TOTAL COST-SHARE PROGRAM	\$ 10,000,000	\$ 16,650,000	\$ 17,500,000	\$ 3,850,000

**Table 4: WQIF TMDL Targeted Agricultural Cost-Share
TMDL Implementation Projects**

River Basin	HU	TMDL Name	Sub Watershed	City or County:	SWCD	Pollutant(s):
Shenandoah	B08	Opequon Creek	Opequon Creek	Clarke, Winchester	Lord Fairfax	E. Coli, Sed.
	B09	Abrams Creek	Abrams Creek	Frederick, Winchester	Lord Fairfax	E. Coli, Sed.
	B10	Middle River	Middle River	Augusta	Headwaters	E. Coli, Sed.
	B13	Moffett Creek	Moffett Creek	Augusta	Headwaters	E. Coli, Sed.
	B14	Christians Creek	Christians Creek	Augusta	Headwaters	E. Coli, Sed.
	B14	Middle River	Middle River	Augusta	Headwaters	E. Coli
	B15	Middle River	Middle River	Augusta	Headwaters	E. Coli, Sed.
	B15	Polecat Draft	Polecat Draft	Augusta	Headwaters	E. Coli
	B19	Mossy Creek	Mossy Creek	Rockingham	Headwaters	E. Coli/Benthic
	B24	Long Glade Run	Long Glade Run	Rockingham	Headwaters	E. Coli
	B28	Naked Creek	Naked Creek	Augusta	Headwaters	FC
	B30	South River	South River	Augusta	Headwaters	E. Coli
	James River Basin	J02	Appomattox River Watershed	Spring Creek	Prince Edward	Piedmont
J03		Appomattox River Watershed	Little Sandy Creek	Prince Edward	Piedmont	E. Coli
J04		Appomattox River Watershed	Busch River	Prince Edward	Piedmont	E. Coli
J05		Appomattox River Watershed	Briery Creek	Prince Edward	Piedmont	E. Coli
J06		Appomattox River Watershed	Sayers Creek	PE & Amelia	Piedmont	E. Coli
J08		Appomattox River Watershed	Flat Creek	Amelia	Piedmont	E. Coli
J09		Appomattox River Watershed	Nibbs Creek	Amelia	Piedmont	E. Coli
J11		Appomattox River Watershed	Deep Creek & West Creek	Nottoway & Amelia	Piedmont	E. Coli
Chowan River	K14	Chowan River	Nottoway River & Big Hounds Creek	Lunenburg, Nottoway & PE	Southside	E. Coli
	K15	Chowan River	Little Nottoway River	Nottoway	Piedmont	E. Coli
	K16	Chowan River	UT-Hurricane Branch	Nottoway	Piedmont	Benthic
Roanoke River Basin	L13	Pigg River Watershed	Old Womans Creek & Leesville Lake	Pittsylvania	Pittsylvania	E. Coli
	L14	Pigg River Watershed	Upper Pigg River & Story Creek	Franklin	Blue Ridge	E. Coli
	L15	Pigg River Watershed	Big Chestnut Creek	Franklin	Blue Ridge	E. Coli
	L16	Pigg River Watershed	Lower Pigg River	Franklin	Blue Ridge	E. Coli
	L17	Pigg River Watershed	Snow Creek	Pittsylvania	Pittsylvania	E. Coli
	L18	Pigg River Watershed	Pigg River	Pittsylvania	Pittsylvania	E. Coli
	L34	Falling River Watershed	Falling River	Campbell	Robert E. Lee	E. Coli
	L36	Turnip Creek	Turnip Creek	Charlotte	Southside	E. Coli
	L37	Club Creek	Club Creek	Charlotte	Southside	E. Coli
	L39	Ash Camp Creek Watershed	Ash Camp Creek and Twittys Creek	Charlotte	Southside	E. Coli/Sed.
L40	UT-Buffer Creek	UT-Buffer Creek	Charlotte	Southside	E. Coli	
New River Basin	N36	New River Basin	Bluestone River	Tazewell	Tazewell	E. Coli, Sed.
	N37	New River Basin	Laurel Fork	Tazewell	Tazewell	DO/E. Coli/Sed.
Clinch-Powell	P01	Clinch River Watershed	Clinch River	Tazewell	Tazewell	Sed.

Measurable Results – Agricultural Cost-Share Program

A summary of the agricultural BMP implementation activities for July 1, 2005 through June 30, 2006 is provided in Table 5 below. This includes data for number of farmers receiving funding, number of practices installed, acres benefited and estimates of tons of soil loss reduced, pounds of nitrogen reduced, pounds of phosphorus reduced and tons of waste treated.

BASIN	No. Farmers	No. Practices	Acres Benefited	Tons SL (soil loss) Reduced	Lbs N Reduced	Lbs P Reduced	Tons Waste Treated
POTOMAC	83	148	3,409	14,658	79,742	13,435	555
SHENANDOAH	229	497	14,446	39,878	216,935	50,684	8,540
RAPPAHANNOCK	112	329	9,041	19,730	107,333	20,759	3,630
YORK	108	594	18,751	25,474	138,581	27,309	
JAMES	209	864	33,087	67,028	364,630	77,436	14,160
BAY COASTAL	66	376	12,975	12,305	66,941	16,556	586
OCEAN COASTAL	31	203	7,648	5,690	30,953	7,751	500
ALBEMARLE SOUND	17	72	2,911	1,801	9,797	1,857	
CHOWAN	197	1,497	44,061	21,201	115,334	31,070	
ROANOKE	234	491	8,168	60,950	331,568	74,047	226,741
YADKIN	8	18	272	1,115	6,067	1,115	
NEW	120	296	5,985	49,026	266,704	47,582	2,950
CLINCH/POWELL	52	56	4,440	14,124	76,837	14,921	
HOLSTON	124	189	3,378	24,746	134,616	27,062	6,487
BIG SANDY	22	25	160	651	3,539	651	
Total	1,612	5,655	168,734	358,378	1,949,577	412,234	264,148

Table 6 contains a summary of the cost share expenditures for these practices.

BASIN	Total Cost (\$)	State C/S (\$)	Other C/S (\$)	Farmer Input (\$)
POTOMAC	\$ 823,277	\$ 599,375	\$ 500	\$ 223,402
SHENANDOAH	\$ 2,288,622	\$ 1,033,543	\$ 412,622	\$ 842,457
RAPPAHANNOCK	\$ 872,065	\$ 712,027	\$ 186,544	\$ (26,506)
YORK	\$ 968,591	\$ 789,310	\$ 19,259	\$ 160,022
JAMES	\$ 2,492,155	\$ 1,409,196	\$ 36,716	\$ 1,046,243
BAY COASTAL	\$ 458,413	\$ 443,634	\$ -	\$ 14,779
OCEAN COASTAL	\$ 198,835	\$ 173,481	\$ -	\$ 25,354
ALBEMARLE SOUND	\$ 119,960	\$ 109,285	\$ -	\$ 10,675
CHOWAN	\$ 1,429,995	\$ 711,245	\$ 3,015	\$ 715,734
ROANOKE	\$ 2,402,883	\$ 1,549,080	\$ 193,237	\$ 660,565
YADKIN	\$ 31,831	\$ 25,718	\$ -	\$ 6,113
NEW	\$ 1,450,808	\$ 606,133	\$ 241,372	\$ 603,304
CLINCH/POWELL	\$ 651,875	\$ 406,875	\$ 47,476	\$ 197,525
HOLSTON	\$ 1,676,623	\$ 694,817	\$ 494,742	\$ 487,064
BIG SANDY	\$ 73,339	\$ 34,601	\$ 18,675	\$ 20,062
Total	\$ 15,939,272	\$ 9,298,320	\$ 1,654,158	\$ 4,986,794

Conservation Reserve Enhancement Program

The Virginia Conservation Reserve Enhancement Program (CREP) aims to improve water quality and wildlife habitat by offering financial incentives, cost-share and rental payments to farmers who voluntarily restore riparian buffers, filter strips and wetlands. CREP is an enhancement to the federal Conservation Reserve Program (CRP), a U.S. Department of Agriculture Farm Services Agency program, which was established in 1985. CRP was established to provide a cost-effective means to address priority agricultural resource problems by targeting federal and state resources to specific geographic regions of particular environmental sensitivity. CREP applications are accepted by the Farm Service Centers within CREP eligible areas until December 31, 2007.

The Virginia CREP program is divided into two regions. The Chesapeake Bay CREP targets Virginia's entire Chesapeake Bay watershed (approximately 60% of the Commonwealth) and calls for the installation of 22,000 acres of riparian buffer and filter strips as well as 3,000 acres of wetland restoration. The Southern Rivers CREP targets watersheds outside the Chesapeake Bay drainage basin and aims to establish 13,500 acres of riparian buffer and filter strip plantings and 1,500 acres of wetland restoration. Statewide, these programs are expected to reduce annual nitrogen loads to waterways by more than 710,000 pounds, phosphorus by more than 114,000 pounds and sediment by more than 62,000 tons.

State cost-share payments for the CREP program, with funding from the Water Quality Improvement Fund, are administered through local Soil and Water Conservation District offices. The state reimburses up to 25 percent, not to exceed \$200 per acre of restored buffer or wetland, of conservation practice cost deemed eligible by the local SWCD. A 25 percent state income tax credit is available for out-of-pocket expenses. Federal reimbursement is made through the Farm Service Agency for up to 50 percent of a participant's eligible expenses for implementing best management practices. After the installation of conservation practices, the Commonwealth will pay an additional \$1000 / acre for the recordation of a permanent open space easement to protect buffers in perpetuity.

FY2005, FY2006, and FY2006 Supplemental WQIF funding for the CREP program was provided for the Southern Rivers watershed to add an additional 5000 acres to its original goal of 10,000. To accelerate CREP enrollment in the Chesapeake Bay watershed, additional funding from WQIF is being offered to landowners for a CREP bonus of \$100 / acre for 100 foot wide buffers. This program will enhance opportunities for securing permanent riparian buffer easements. This initiative is intended to achieve roughly 50% (7,000 acres) with 100-foot buffers. A wetlands bonus payment of \$ 200 / acre is also being offered to Virginia landowners for approximately 4,000 acres in the Chesapeake Bay watershed. Funding will also be used to accelerate and promote signup and implementation of CREP in the Chesapeake Bay watershed through assistance provided to SWCDs. A summary of CREP cost share assistance to farmers for the period of July 1, 2005 through June 30, 2006 is provided in the chart below. Table 7 summarizes acres of buffer restored and miles of stream buffered as well as estimated reductions for the tons of soil loss, pounds of nitrogen, and pounds of phosphorus.

**Table 7: Virginia CREP Tracking Summary By Basin (Summarized as of 10/26/2006)
Reporting Period July 1, 2005 - June 30, 2006**

BASIN	No. Farmers	No. Practices	Acres of Buffer Restored	Miles of Stream Buffered	Tons SL (soil loss) Reduced	Lbs N Reduced	Lbs P Reduced	Total BMP Cost (\$)	State CREP Amount (\$)	Other Payment Amount (\$)
BAY COASTAL			97.4	17.2	210.1	1,142.7		\$ 23,722	\$ 7,190	\$ 9,306
JAMES	3.0 45.0	7.0 139.0		30.2	425.8	2,316.1	277.3	\$ 690,994	\$ 61,390	\$ 312,767
OCEAN COASTAL			258.9 38.0	5.4	32.6		381.5	\$ 12,760	\$ 3,717	\$ 7,256
POTOMAC	3.0 13.0	10.0 37.0		14.3		177.6 1,277.1		\$ 164,071	\$ 27,528	\$ 72,238
RAPPAHANNOCK	14.0	48.0	105.5 148.0	8.7	234.8 1,571.1	8,546.7	188.8 1,341.0	\$ 268,702	\$ 45,521	\$ 124,420
SHENANDOAH	39.0	107.0		20.2	768.9	4,182.8		\$ 644,714	\$ 67,923	\$ 306,862
YORK	9.0 126.0	22.0 370.0	122.3 1,034.1	5.4	281.9 3,525.0	1,533.3	239.9 3,343.7	\$ 157,938	\$ 29,094	\$ 52,800
Chesapeake Bay Total				101.4		19,176.2		\$ 1,962,902	\$ 242,362	\$ 885,648
ALBEMARLE SOUND	4.0	12.0	34.4	6.6	22.6	123.0	33.2	\$ 11,727	\$ 4,577	\$ 4,604
BIG SANDY								\$ -	\$ -	\$ -
CHOWAN	15.0	67.0	328.8	56.7	203.1	1,104.8	297.5	\$ 98,513	\$ 41,315	\$ 25,371
CLINCH / POWELL	27.0	96.0	226.6	15.4	944.6	5,138.5	945.7	\$ 543,476	\$ 68,783	\$ 273,560
HOLSTON	39.0	126.0	38.0	11.6	181.6	987.6	197.5	\$ 413,676	\$ 15,650	\$ 191,570
NEW	21.0	78.0	145.9	20.8	870.2	4,734.1	866.8	\$ 481,517	\$ 40,589	\$ 209,127
ROANOKE	21.0	84.0	193.6	12.5	2,187.3	11,899.0	2,658.5	\$ 427,021	\$ 55,596	\$ 330,610
YADKIN			4.9	0.6	24.5		24.5	\$ 14,647	\$ 1,348	\$ 6,936
Southern Rivers Total	1.0 128.0	3.0 466.0		124.1	4,433.9	43,296.5	133.3	\$ 1,990,576	\$ 227,855	\$ 1,041,777
Statewide Total	254.0	836.0	2,006.3	225.5	7,958.9	43,296.5	8,367.5	\$ 3,953,478	\$ 470,217	\$ 1,927,425

Nonpoint Source Programs and Project Support

DCR allocated \$5,725,000 in FY2005 and FY2006 WQIF funding to support nonpoint source pollution reduction projects and programs. An additional \$5,036,550 was allocated from the FY2006 supplemental funding for a total of \$10,786,550 for NPS project grants. All of these funds have been allocated through grant agreements with the exception of approximately \$4.5 million expected to be allocated to new DCR priority initiatives and/or for projects selected for funding through a 2007 WQIF Request for Proposals.

Two programs in the WQIF guidelines relate to nonpoint source programs and project support: 1) Strategic Water Quality Initiatives, and 2) Cooperative Nonpoint Source Programs with Local Governments. These programs and the current DCR grant agreements are described under each of the two sections that follow. Projects awarded funding under the Strategic Water Quality Initiatives Program are selected based on either priorities established by the DCR Director with approval from the Secretary of Natural Resources or through a competitive selection process. All projects funded under the Cooperative Nonpoint Source Programs with Local Governments are selected through a competitive process. Total project funding awards are split with a maximum allocation of 60% of funded activities in the Chesapeake Bay watershed and a minimum of 40% awarded to the project activities in the Southern Rivers watersheds.

On October 14, 2005, DCR issued the FY2006 Water Quality Improvement Fund, Request for Grant Applications. DCR promoted urban best management practice projects on urban, suburban, and rural developed lands through this competitive grant process. At the December 15, 2005, deadline for submitting project proposals DCR had received 102 proposals requesting over \$10 million with proposed match exceeding \$14 million. A list of projects submitted was provided in the 2005 WQIF Annual Report. Projects selected for funding with estimated nutrient reductions are provided in the appropriate sections below. Proposed funding awards were posted for the required public comment period and grant agreement start dates for most projects was set at July 1, 2006. All projects selected facilitate reductions in nonpoint source pollution and water quality improvements in Virginia's streams, lakes, rivers, and the Chesapeake Bay. Priority implementation initiatives include those highlighted in the Virginia Tributary Strategies as well as Total Maximum Daily Load implementation or restoration plans.

Strategic Nonpoint Source Water Quality Initiatives

All project awarded funding under the Strategic Nonpoint Source Pollution Water Quality Initiatives were made as a result of the competitive process of the FY2006 WQIF Request for Grant Applications. The seventeen (17) projects selected for funding are listed in Table 8 below and total \$2,370,000. Current grant agreements awarded with funding through the WQIF Strategic Nonpoint Source Water Quality Initiatives program include:

- **Virginia Tech Department of Dairy Science, *Precision Phosphorus Feeding: Targeted Environmental Solutions for Virginia Dairy Farms (\$400,000)***. The impact of intensive animal production on soil and water has been identified as a primary source of impairment of Virginia's rivers. The increasing imbalance in nutrients applied to land is due largely to the escalation in imported feeds high in nutrients. Through this project incentive payments are

offered on a per cow basis for farms that reduce the phosphorus levels in feed. To encourage participation, a scaled incentive program is used, with payments of \$6 per milking cow per year for farms overfeeding phosphorus by 15% or less, and \$12 per milking cow per year for farms overfeeding by less than 5%. Incentive payments will be offered for two years, not to exceed \$4,800 per farm per year (\$9,600 over the lifetime of the three year farm contracts). Producers receiving the payment will be expected to continue the practice at their own expense in year 3 of the contract.

- **Virginia Department of Forestry (DOF), *Water Quality Improvement Fund Grant Allocations (\$500,000)***. This project supports two forestry nonpoint source pollution programs. A pilot silvicultural best management practice cost-share program is being offered and targeted to watersheds containing TMDL stream segments and other priority watersheds. Funding is available to Virginia loggers for 50 percent of actual cost (not to exceed \$2,000) for approved stream crossings. If the stream crossing includes the purchase of a portable bridge, the 50 percent funding level increases to a maximum of up to \$4,000 of the actual costs. DOF expects to fund up to 125 logging BMP projects. DOF is also offering an open request for proposals for a Regional Grants Program to fund urban canopy demonstration projects; streamside restoration including riparian forest buffer plantings, riparian forest buffer plantings where the Conservation Reserve Enhancement Program is not eligible; and vegetative stormwater mitigation projects such as “rain gardens”. The funding range for projects is \$1,000 to \$10,000. The application deadline for this program is February 23, 2007.
- **U.S. Department of Agriculture Natural Resource Conservation Service (NRCS), *Technical Assistance Support Services for Total Maximum Daily Load Program (\$600,000)***. This project provides for technical assistance support services for effective implementation of Virginia agricultural conservation practices with emphasis on the Virginia Total Maximum Daily Load program. NRCS will provide dedicated staff to train Virginia Soil and Water Conservation Districts (SWCDs) in activities including: training of SWCD technical employees to prepare conservation plans and install agricultural conservation practices targeted to TMDL watersheds, conducting land owners and producer recruitment activities and group meetings, and coordination with DCR and SWCD Boards of Directors implementing targeted projects on their TMDL accomplishments.
- **U.S. Department of Agriculture Natural Resource Conservation Service, *Engineering Support Services for Virginia Agriculture BMP Cost-Share Program (\$900,000)***. NRCD will provide staff resources to train Virginia SWCD employees for “job approval authority” to effectively assist farmers through the agriculture BMP cost-share program, and engineering services for BMPs in an appropriate manner for compliance with state law. On-the-job training and assistance will be provided in the lay out, survey, calculations and design of high priorities practices. This project is expected to increase implementation levels of two BMP practices: SL-6, Grazing Land Protection and WP-4, Animal Waste Control Facilities; resulting in increased NPS reductions of 42,750 tons soil loss, 230,000 pounds nitrogen, 45,000 pounds phosphorus, and 8,800 tons of waste.
- **Nineteen (19) grants awarded through the FY2006 WQIF Request for Grant Applications total \$1,798,000**. The chart below provides the project name, sponsor, funding amount, and estimated NPS reductions for projects selected for grant awards.

Table 8: FY 2006 Water Quality Improvement Fund – Strategic Nonpoint Source Water Quality Initiatives

Chesapeake Bay Watershed					
Name of Project	Sponsor	Funding	lbs/year Nitrogen	lbs/year Phosphorus	lbs/year Sediment
Riparian Buffer Restoration Initiative	Albemarle County	\$ 159,000	1,101	246	17
Dawn Decentralized Wastewater Treatment / Septic Connection	Caroline County	\$ 200,000	2,700		
Low Impact Design Project	Chesterfield County	\$ 169,000	50	10	2
Enhancing City Programs for Stream Health: Blacks Run / Cooks Creek	City of Harrisonburg	\$ 144,500	173	115	576,625
Winters Branch SWM Enhancement and Stream Valley Restoration	City of Manassas	\$ 134,000	980	99	
Lewis Creek Watershed Stormwater Nutrient & Sediment Removal	City of Staunton	\$ 76,500	5	1	
Water Quality Enhancement Project & Community Conservation Partnership	City of Virginia Beach	\$ 175,000	27,930	34,038	
Community Conservation Partnership Incentive Program	James City County	\$ 150,000	75	15	3
Restoration of Stream Water Quality in Priority Watersheds	Prince William County	\$ 100,000	2,560	160	
Implementing the Strategy: The Rappahannock River Starts Here	Rappahannock County	\$ 90,000	10,650	1,600	440,000
Implementation of the Stafford County Rappahannock Watershed Plan	Stafford County	\$ 70,000	13,215	143	0
Comprehensive Watershed Management Program	Town of Orange	\$ 142,000	36,724	6,854	6,660
	Subtotal	\$ 1,610,000	96,163	43,281	1,023,307
Southern Rivers Watersheds					
Name of Project	Sponsor	Funding	lbs/year Nitrogen	lbs/year Phosphorus	lbs/year Sediment
Powell River Watershed Wastewater Reduction Project	Lee County BOS	\$ 200,000	204		
Mudlick Creek Urban Stream Restoration at Garst Mill Park	Roanoke County	\$ 148,000	720	192	480,000
Stormwater Assessment & Bio-Retention Retrofit Project	Town of Cedar Bluff	\$ 52,000	10	2	
Upper Clinch River Stormwater Management Project	Town of Tazewell	\$ 200,000	16	7	4,734
Countywide Sewage Management Planning and Public Outreach	Wise County	\$ 160,000	37		
	Subtotal	\$ 760,000	987	201	484,734
	Statewide Total	\$ 2,370,000	97,150	43,482	1,508,041
			Sediment converted to tons		754

NOTE: Estimates based on NPS reduction estimates provided in project proposals and through other calculations.

Cooperative Nonpoint Source Pollution Programs with Local Governments

All project awarded funding under the Cooperative Nonpoint Source Pollution Programs with Local Governments were made as a result of the competitive process of the FY2006 WQIF Request for Grant Applications. The twenty-one (21) projects selected for funding are listed in Table 9 below and total \$1,798,000.

Table 9: FY 2006 Water Quality Improvement Fund – Cooperative Nonpoint Source Programs with Local Governments					
Chesapeake Bay Watershed			lbs/year	lbs/year	lbs/year
Name of Project	Sponsor	Funding	Nitrogen	Phosphorus	Sediment
Sarah Creek Watershed NPS Water Quality Partnership	Chesapeake Bay Foundation	\$ 52,000	154	19	
Water Quality Improvements in Woods Creek Watershed	City of Lexington	\$ 36,000	22	2	763
Stormwater Management Ordinance & LID Demo Project	Culpeper County	\$ 42,000	2,108		
Extreme Stream Makeover	James River Association	\$ 60,000	25	3	
Middle Peninsula Regional On-Site Wastewater Treatment & Disposal	Middle Peninsula PDC	\$ 100,000	29		
Wetlands Restoration and Learning Laboratory	Poquoson City Schools	\$ 60,000			
Common Sense Solutions to Water Pollution	Shenandoah Valley SWCD	\$ 58,000	642	3	3,994
Shenandoah Riparian Protection Program	Valley Conservation Council	\$ 100,000	154	34	2
Green Roof Demonstration Project - Smithdeal Residential Hall	Virginia Wesleyan College	\$ 50,000	2	0	
Upper James River Riparian Protection Partnership	Western Virginia Land Trust	\$ 100,000	154	34	2
	Subtotal	\$ 658,000	3,290	95	4,761
Southern Rivers Watersheds			lbs/year	lbs/year	lbs/year
Name of Project	Sponsor	Funding	Nitrogen	Phosphorus	Sediment
Big Sandy Basin Coalition Restoration Project	Big Sandy River Basin Coalition	\$ 70,000	768	212	560,000
Knox Creek Restoration Project	Big Sandy SWCD	\$ 95,000	2,573	690	1,620,000
Arno Sedimentation Maintenance & Craborchard Branch Outslopes Projects	Dept of Mines, Minerals, & Energy	\$ 60,000	60	40	200,000
Norton Gully Maintenance Project	Dept of Mines, Minerals, & Energy	\$ 80,000	15	10	51,300
Guest River Restoration Project	Lonesome Pine SWCD	\$ 100,000	304	46	5,029
New River Streambank Stabilization	New River Highlands RC&D Council	\$ 100,000	3,360	896	2,240,000
Southwest Virginia Growth Readiness Initiative	Upper Tennessee River Roundtable	\$ 90,000	16	7	4,734
Reducing Urban Stormwater Impacts within the Strouble Creek Watershed	Virginia Tech	\$ 85,000	33	4	1,220
Upper Roanoke and Little River Riparian Partnership	Western Virginia Land Trust	\$ 100,000	154	34	2
	Subtotal	\$ 780,000	7,283	1,939	4,682,285
	Statewide Total	\$ 1,438,000	10,573	2,034	4,687,046
				Sediment converted to tons	2,344

NOTE: Estimates based on NPS reduction estimates provided in proposal and through other calculations.

CHAPTER 3: VIRGINIA NONPOINT SOURCE MANAGEMENT PROGRAM AND COOPERATIVE NONPOINT SOURCE POLLUTION PROGRAMS

Section 319 of the 1987 Federal Clean Water Act requires that states develop and implement nonpoint source pollution management programs. Virginia's Nonpoint Source Pollution Management Program is a cooperative effort made up of a diverse network of state and local programs. Collectively, these programs help prevent water quality degradation and restores the health of our lakes, rivers and bays by promoting and funding state and local watershed planning efforts, water quality monitoring, education and outreach, stream and wetland restoration, and other measures to reduce, prevent and track nonpoint source pollution loads.

The Virginia Nonpoint Source Management Program is coordinated by DCR as set forth in Section 10.1-10.4.1 of the Code of Virginia. DCR is charged in assisting in the development of local cooperative NPS pollution programs and programs to implement Virginia's nonpoint source pollution management program, in accordance with the Water Quality Improvement Act, Section 10.1-2124.B of the *Code of Virginia*. The purpose of the cooperative nonpoint source pollution programs is to maintain and/or restore water quality standards in stream segments where NPS pollution is a significant loading factor. NPS pollution programs require locally based remedies that address the unique, site-specific, and varied causes of NPS contaminants. Cooperative NPS pollution programs are combinations of programmatic tools, and technical and financial resources of varying emphasis used to target water quality impairments in a given watershed and political jurisdiction. A cooperative approach to protecting water quality helps local stakeholders develop their capabilities individually and collectively to address local water quality impairments.

Federal Funding of Nonpoint Source Pollution Programs

Nonpoint source pollution reduction activities require a coordinated and collaborative effort on the part of DCR and other state agencies and non-agency partners (such as localities, soil and water conservation districts, non-profits, etc.). Funding of these activities comes from a variety of sources, from the Virginia General Assembly general funds, federal sources, local resources, etc.

Virginia DCR manages three Federal grant programs that provide resources for nonpoint source pollution activities. Two of these are Clean Water Act programs and are administered by the US Environmental Protection Agency: (1) CWA § 319(h) - Nonpoint Source Implementation Grant and (2) CWA § 117 - Chesapeake Bay Implementation Grant. The third federal grant program is administered by National Oceanic and Atmospheric Administration (NOAA) and is the CZARA § 6217 - Coastal Nonpoint Source Implementation Grant. Funding awards varies year-to-year for these multi-year grants. The table 10 below summarizes the funding awards from October 1 2004 through September 30, 2006. It should be noted that funds may be available in VAFY2006, but not all funds were expended during that period since all awards have 18 month to 3 year time durations.

Funding Source	FFY2003	FFY2004	FFY2005	FFY2006	Total
EPA –CWA § 319(h) - Nonpont Source Grant	\$ 4,580,100	\$ 4,533,900	\$ 3,968,400	\$ 3,968,400	\$ 17,050,800
EPA – CWA § 117 - Chesapeake Bay Grant	\$ -	\$ 2,487,000	\$ 2,339,000	\$ 2,227,000	\$ 7,053,000
NOAA – CZARA § 6217 -Coastal Nonpoint Grant	\$ 50,000	\$ 185,385	\$ 197,000	\$ 187,000	\$ 619,385
TOTAL AVAILABLE FEDERAL FUNDING	\$ 4,630,100	\$ 7,206,285	\$ 6,504,400	\$ 6,382,400	\$ 24,723,185

During this period federal 319(h) funds were utilized in 10 identified core program areas. Roughly 20% of each grant award was allocated to TMDL Development and Planning, and another 40% was allocated to TMDL Implementation Projects (including DCR and Soil and Water Conservation District Staff to provide Technical Assistance for BMP implementation). Seven project areas (indicated with an ‘*’) were considered core DCR (and Division of Soil and Water) program areas and funded DCR program staff (Table 11).

Program Areas	FFY2003		FFY2004		FFY2005		FFY2006	
	Funding	%	Funding	%	Funding	%	Funding	%
Nutrient Management *	\$ 550,564	12.0%	\$ 537,316	11.9%	\$ 396,497	10.0%	\$ 407,975	10.3%
Planning and Grants *	\$ 166,024	3.6%	\$ 178,860	3.9%	\$ 155,485	3.9%	\$ 154,049	3.9%
Watershed Management & NPS Education & Training *	\$ 62,041	1.4%	\$ 221,620	4.9%	\$ 189,101	4.8%	\$ 209,632	5.3%
Stormwater Management *	\$ 280,803	6.1%	\$ 106,179	2.3%	\$ 214,263	5.4%	\$ 211,429	5.3%
Agricultural Cost-share Management *	\$ 58,645	1.3%	\$ 118,661	2.6%	\$ 95,477	2.4%	\$ 93,751	2.4%
Database & GIS Support *	\$ 342,395	7.5%	\$ 241,307	5.3%	\$ 233,279	5.9%	\$ 212,000	5.4%
TMDL Implementation Projects *	\$1,852,125	40.4%	\$ 2,009,024	44.3%	\$ 1,648,821	41.6%	\$ 1,642,240	41.4%
TMDL Development	\$1,003,134	21.9%	\$ 928,092	20.5%	\$ 789,480	19.9%	\$ 785,700	19.8%
Resource Extraction Projects	\$ 75,447	1.6%	\$ -	0.0%	\$ 75,000	1.9%	\$ 80,000	2.0%
Karst Groundwater Projection Projects	\$ 188,923	4.1%	\$ 192,839	4.3%	\$ 165,000	4.2%	\$ 165,625	4.2%
TOTAL	\$4,580,100	100.0%	\$ 4,533,900	100.0%	\$ 3,962,400	100.0%	\$ 3,962,400	100.0%

Note: * These projects all include Division of SWC staff among other program and project costs.

Existing Nonpoint Source Pollution Control Programs and Services Administered by DCR

Virginia Conservation Partnership

Virginia's 47 Soil and Water Conservation Districts (SWCDs) have served the Commonwealth for approximately 70 years. This cooperative relationship provides efficient delivery of natural resource programs and services to landowners. Along with DCR, the primary partners of the Virginia Conservation Partnership are Soil and Water Conservation Districts (SWCDs), and the US Department of Agricultural Natural Resources Conservation Service (NRCS). SWCDs provide local connections with landowners and the farming community. NRCS provides additional technical expertise for the installation of conservation best management practices. DCR supports SWCDs with training, guidance, and financial assistance to help achieve the commonwealth's water quality goals.

The SWCDs were established in the 1930s to develop comprehensive programs and plans to conserve soil resources, control and prevent soil erosion, prevent floods and conserve, develop, utilize and dispose water. Since the mid-1980s, DCR has relied heavily on districts to help deliver many programs aimed at controlling and preventing NPS pollution. With their volunteer boards and more than 150 full and part-time technical and administrative employees statewide, districts provide a valuable delivery system for Virginia's statewide NPS prevention programs. Key SWCD NPS control and prevent efforts include: implementation of the Virginia Agricultural BMP Cost-Share Assistance Program, local assistance with delivery of erosion and sediment control ordinances, conservation planning assistance and farm plan approval in accordance with state and local requirements, technical expertise for design and installation of farm conservation practices implemented voluntarily by Virginia farmers, and education through field days, public meetings and classroom programs.

During 2006, Soil and Water Conservation District Boards, with support from DCR staff, conducted hundreds of monthly board meetings and sponsored hundreds of technical training sessions and conservation demonstrations, tours, and events. With DCR funding and oversight, SWCDs targeted millions of dollars to address significant agricultural water quality problems in high priority watersheds. SWCD staff fulfills established roles with local governments as they cooperatively implement ordinances that control sediment from predominantly urban construction and development. In addition, districts play a significant role in coordination and delivery of services that support implementation of county ordinances including agricultural provisions of local Chesapeake Bay Preservation Act ordinances and assist with implementation of Virginia's Agricultural Stewardship Act.

The significant water quality challenges facing the Commonwealth will put additional burdens on Soil and Water Conservation Districts and additional staff and resources will be necessary to deliver nonpoint source pollution reduction programs.

Urban Programs - Erosion and Sediment Control

DCR implements the state Erosion and Sediment Control (ESC) Program according to the *Virginia Erosion and Sediment Control Law, Regulations, and Certification Regulations* (VESCL&R). The law is carried out cooperatively by state and local government agencies to control sediment and runoff from land disturbing activities. DCR implements the state ESC program according to the law as is codified at Title 10.1, Chapter 5, Article 4 of the *Code of Virginia*, regulations are found at Section 4VAC30-50, and certification regulations are found at Section 4VAC50-50 of the Virginia Administrative Code.

DCR establishes statewide standards and guidance and provides training and education opportunities for local program personnel regarding erosion and sediment control. Technical assistance and advice is provided to localities local erosion and sediment control. DCR staff periodically conducts comprehensive reviews and evaluations of local government erosion and sediment control programs, specifically focusing on the administrative, enhancement and implementation of their local ordinances, which regulate land-disturbing activities. DCR regulates land-disturbing activities on state and federal lands, as well as on a specific group of activities undertaken by utility, interstate and intrastate pipeline and railroad companies.

A network of local government operated ESC programs regulates most private projects involving a land-disturbing activity. There are 166 local ESC programs in Virginia. They include every county, city and many incorporated towns (some towns are covered by a county program). Specific components within local ordinances account for program administration, plan review and approval, site inspection, and enforcement on locally regulated projects. Although administrative procedures vary by locality, the basic ESC program components are consistent statewide. DCR staff provides technical assistance through ESC plan review, on-site inspection, enforcement support, local program planning, and provision of technical and regulatory guidance and training. Challenges remain is assuring that all local programs meet state standards and are applied consistently across the state.

In 2006, DCR staff reviewed 32 local government programs for consistency with the Erosion and Sediment Control Law and Regulations. Local programs consistent with the Law and Regulations enhance water quality by minimizing sediment and nutrients associated with land-disturbing activities from entering the Commonwealth's waters.

DCR staff conducted a total of 39 erosion and sediment control training classes. The classes include Basic Erosion and Sediment Control in Virginia, Erosion and Sediment Control for Inspectors, and Erosion and Sediment Control for Plan Reviewers. Approximately 1,548 individuals participated in these training classes during the reporting period. Two statewide certification exams were conducted and approximately 614 people were tested. The pass rate for these tests was over 75%. In addition to the certification exams, DCR provides online re-certification programs. Approximately 308 individuals were re-certified through the online programs. Training and certification of individuals in erosion and sediment control improves water quality by educating professionals on ways to reduce the impact on water quality.

DCR also administers a Responsible Land Disturber training and certification program through online delivery of information, materials, and training. During the reporting period, approximately 3,219 individuals were trained and certified. Additionally, approximately 655

were re-certified through the online program. By making individuals responsible for land disturbance and offering training and information, this program improves awareness and helps ensure proper erosion and sediment control on construction sites.

Oversight of state agency land disturbing activities is another important element of the state's urban nonpoint source programs. During this reporting period, DCR staff completed approximately 500 plan reviews for state agency projects. Staff also completed approximately 1400 project inspections covering over 3,200 acres. The Virginia Department of Transportation performed approximately 1,200 inspections based on annual standards and specifications approved by DCR. DCR staff inspected approximately 21 projects in response to complaints and to ensure compliance with the approved standards and specifications. DCR requires standards and specifications be submitted annually for linear projects such as rail, gas pipelines, and power transmission lines. DCR reviews and approves these standards and specifications. In addition, DCR may exercise direct oversight of major projects. For 2006, approximately 30 companies submitted annual standards and specifications for review and approval.

Staff also responded to over 400 requests for technical assistance from local governments, state agencies, developers, and citizens. With regard to enforcement and compliance, staff responded to approximately 139 complaints by completing site visits and working with local programs to resolve the complaints. Although reductions have not been calculated, there are direct water quality benefits resulting from actions taken to resolve complaints and ensure compliance with the Law and Regulations.

Urban Programs - Stormwater Management

The 2004 Virginia General Assembly unanimously passed House Bill 1177 transferring regulatory authority of National Pollutant Discharge Elimination System (NPDES) programs related to municipal separate storm sewer systems (MS4) and construction activities from the State Water Control Board to the Soil and Water Conservation Board and transferred oversight of these programs from the Department of Environmental Quality to the Department of Conservation and Recreation. This transfer became effective January 29, 2005. As a result, DCR is responsible for the issuance, denial, revocation, termination and enforcement of NPDES permits for the control of stormwater discharges from MS4s and land disturbing activities under the Virginia Stormwater Management Program.

The Virginia Stormwater Management (SWM) Program seeks to protect properties and aquatic resources from damage caused by increased volume, frequency and peak rate of stormwater runoff. The program seeks to protect those resources from increased nonpoint source pollution carried by stormwater runoff. SWM programs are implemented according to the *Virginia Stormwater Management Law* and *Virginia Stormwater Management Regulations*. The law is codified at Title 10.1, Chapter 6, Article 1.1. of the *Code of Virginia* and the Regulations are found at Section 4VAC50-60 of the Virginia Administrative Code. These statutes specifically set forth regulations regarding land development activities to prevent water pollution, stream channel erosion, depletion of groundwater resources, and more frequent localized flooding to protect property value and natural resources. SWM programs operated according to the law are intended to address these adverse impacts and comprehensively manage the quality and quantity of stormwater runoff on a watershed-wide basis.

DCR oversees regulated activities undertaken on state and federal property. In addition, DCR has regulatory oversight on all construction sites required to have a permit. Localities (counties, cities, and towns) have the option to establish a local SWM program to regulate these same activities on private property in their jurisdiction. State stormwater regulations promote consistency among local SWM programs by developing technical criteria and administrative procedures with which property owners and agents must comply. The regulations were written so that all parties will work together to implement a consistent program to restore and protect watershed across political boundaries. DCR staff work cooperatively with localities; providing programmatic and ordinance reviews, promotion of cost-effective solutions for the protection of water quality, over ensuring the compliance of state regulations.

A Notice of Intended Regulatory Action (NOIRA) for the Virginia Stormwater Management Program (VSMP) Permit Regulations was prepared on November 1, 2005, and posted to the Virginia Regulatory Town Hall. The action title reads:

Amend, modify or delete provisions of the regulations related to the minimum criteria of a local stormwater management program and Board approval procedures and to: (1) allow for the delegation of the Virginia Stormwater Management Program, or parts thereof, to localities located within Tidewater Virginia as defined by the Chesapeake Bay Preservation Act (§10.1-2100 et seq.); to localities partially or wholly designated as an MS4 under the provisions of the federal Clean Water Act; and to localities requesting delegation from the Board; (2) develop a framework by which the Department of Conservation and Recreation will administer the responsibilities of the Virginia Stormwater Management Program for localities not delegated program authority; (3) allow for changes as needed to improve the administration and implementation of the stormwater management program; and (4) allow for the removal of the out-of-date Best Management Practices (BMP) nutrient removal efficiency information from the regulations.

Municipal Separate Storm Sewer Systems (MS4s) – DCR continued to provide regulatory oversight and technical assistance to the 11 Phase I and 99 Phase II MS4s permitted in Virginia. In addition, DCR staff are working with nine additional MS4s to obtain Phase II permit coverage. During 2006, DCR staff visited 31 facilities, followed up on the results from the previous year's ~~joint~~ EPA/DCR audits, drafted six individual Phase I permits, began coordinating with DEQ staff on the development ~~of TMDLs~~ of TMDLs. DCR continues to participate with EPA in development of outreach materials including drafting fact sheets designed for assisting MS4 owners with permit compliance.

General Permit for Discharges of Stormwater from Construction Activities (General Permit) - DCR staff is now responsible for processing registration statements for land-disturbing activities that are covered by the General Permit. For the period of January 1, 2006 through December 31, 2006, approximately 2,580 land disturbing activities were issued General Permit coverage. During this time period, DCR staff also completed approximately 850 site inspections for compliance with the General Permit

Agriculture – Cost-Share and CREP

DCR coordinates the various statewide agricultural nonpoint source pollution management programs. The programs focus on several areas: the Virginia Agricultural BMP Cost-Share Program, the Virginia BMP Agricultural Tax Credit Program, Conservation Reserve

Enhancement Program (CREP) and other related programs. Best management practices (BMPs) installed through the above programs are designed to reduce NPS pollution, which adversely impacts state waters. Soil loss (i.e. sediment) and excess nutrients (i.e., nitrogen and phosphorus) are reduced by a variety of BMPs installed on both cropland and pastureland. All 33 practices eligible for cost-share, and 49 practices eligible for tax credits provide some amount of reduction of agricultural NPS contaminants, and assist the local Districts' mission of improving water quality. This report highlights some state and federal program accomplishments. Results of the Agricultural Cost-Share and CREP programs were summarized in previous WQIF sections.

Agriculture - Nutrient Management Program

DCR's Nutrient Management Program was established in 1989. The program's purpose is to encourage proper land application and efficient use of fertilizers, manures, biosolids and other nutrient sources used on agricultural and urban lands in order to protect and improve the quality of Virginia's ground and surface waters. DCR works closely with large and small agricultural operations to manage agricultural nutrients. Education of urban and sub-urban landowners about the impacts of nutrient runoff from lawns, gardens, golf courses, parking lots, and other managed turf lands is also a focus of the nutrient management program.

DCR administers a program to certify private and public sector nutrient management planners. Virginia's *Nutrient Management Training and Certification Regulations*, which were adopted in January 1996. The regulations stipulate requirements for certification and criteria for nutrient management plans developed by certified individuals. DCR conducts training sessions and examinations every six months. The revised regulations became effective on January 11, 2006. DCR's Division of Soil and Water Conservation staff also works with DCR's Chesapeake Bay Local Assistance staff and soil and water conservation districts to help facilitate preparation of Bay Preservation Act plans. These plans address soil erosion, nutrient management and integrated pest management of farms within Bay Preservation Areas as defined by the Chesapeake Bay Preservation Area Designation and Management Regulations.

Nutrient management specialists also provide plan writing assistance and support to approximately 20 counties that require farm nutrient management plans in local confined livestock zoning ordinances. DCR staff works with state universities to develop technology capable of maximizing efficient nutrient use and minimizing losses. DCR is responsible for nutrient management plan approval for producers requiring a Department of Environmental Quality-issues Virginia Pollution Abatement general permit for confined animal operations. Virginia's Department of Health's Biosolids (sewage sludge) Use Regulations cites DCR as a resource, and our staff reviews sludge permit applications to address nutrient management issues. Nutrient management field staff also help train water quality specialist employed by Virginia's soil and water conservation districts.

Virginia is a leader in implementing urban nutrient management strategies in cooperation with private industry to reduce nutrient runoff from lawns, office parts, golf course and other developed lands. DCR runs the Water Quality Improvement Agreement Program for urban lawn care retailers, lawn care companies and others who wish to be recognized for offering environmentally responsible products and services. Businesses that have signed such agreements offer their customers information about lawn care or the application of nutrients within

established criteria that minimize nutrient loss by controlling application rates and timing. Voluntary participation in the program leads to reduced nutrient loss to Virginia’s ground and surface waters, including the Chesapeake Bay and its tributaries. Table 12 summaries the pollution reduction results of 2006 based on the activities listed below:

Nutrient Management Specialists: DCR’s nutrient management specialists provide technical assistance to landowners. These specialists develop site-specific nutrient management plans (NMPs) with cooperating farmers, assist farmers with manure testing for nutrient levels, calibrate nutrient application equipment, and coordinate soil nitrate testing in agricultural fields. DCR’s nutrient management specialists also assist localities in developing nutrient management programs and ordinances. The specialists developed NMPs covering 102,340 acres during 2006. This exceeds the projection of 60,000 acres annually as contained in the *Virginia Nonpoint Source Pollution Management Program* plan document. The field staff also performed 183 site reviews for state biosolids use permits, assisted farmers in obtaining 599 manure samples for analysis to help achieve the proper nutrient application rate on 64,029 acres of manure application land, obtained and analyzed 616 soil nitrate samples on 14,331 acres. The specialists made 2,090 field visits to farmers to gather information to write NMPs or to recommend changes to NMPs. Field staff presented nutrient management information at 15 farmer meetings with a total attendance of 486, and 5 field days with a total attendance of 1,855

Nutrient Management Certification Program: DCR certifies private and public sector nutrient management planners, and conducts training sessions and examinations, as authorized in §10.1-104.2 of the *Code of Virginia*. As of December 2006, 304 people are certified to develop nutrient management plans (NMPs) in Virginia. DCR conducts training sessions and examinations every six months. The staff also works with DCR’s Chesapeake Bay Local Assistance staff and SWCDs to help facilitate preparation of Bay Preservation Act plans. These plans address soil erosion, nutrient management and integrated pest management of farms within Bay Preservation Areas as defined by the Chesapeake Bay Preservation Area Designation and Management Regulations. In 2006, a total of 59,299 acres of NMPs were developed by There are planners from fertilizer, seed, and pesticide suppliers, private consultants, employees of SWCDs, DCR, DEQ, NRCS, and other categories.

Nutrient Management Plans on State Owned Land: A new state law became effective July 1, 2005 that requires all state owned lands that receive nutrient applications to have an NMP. To date, over 234,000 acres of state owned land have been identified, of which 7,832 acres receive nutrient applications. In 2006, 250 nutrient management plans were developed for state owned lands, covering 17,190 acres.

Table 12: Nutrient Reductions Attributed to Nutrient Management Planning in Virginia in 2006

	Acres	Phosphorus ¹ (lbs/yr)	Nitrogen ² (lbs/year)
Nutrient Management Planning by Certified Private Planners	59,299	504,634	1,115,414
Nutrient Management Planning on State-owned land	17,190	146,287	323,344
Nutrient Management Planning by State Planners	102,340	870,913	1,925,015
TOTAL	178,829	1,521,835	3,363,773

¹ - Estimated Phosphorus reductions from nutrient management plans were calculated using an average multiplier of 8.51 lbs/acre
² - Estimated Nitrogen reductions from nutrient management plans were calculated using an average multiplier of 18.81 lbs/acre

Tributary Strategies

Virginia has been a partner in the restoration of the Chesapeake Bay since signing the first Chesapeake Bay Agreement in 1983. Virginia's involvement has continued with the most recent Chesapeake 2000 Agreement. Central to Virginia's Chesapeake Bay initiatives have been efforts to reduce excess quantities of nitrogen, phosphorus, and sediments. Beginning in 1992, Virginia began developing strategies for nutrient and sediment reductions in each of the Chesapeake Bay's major tributary basins: the Shenandoah / Potomac, Rappahannock, York, James, and collectively, the creeks and rivers of the Eastern Shore.

In January of 2005, the *Nutrient and Sediment Reduction Tributary Strategy for Virginia's Chesapeake Bay Basins* (Virginia Tributary Strategy) document defined the nutrient and sediment reduction actions necessary to support the living resources of the Bay watershed was released. Individual nutrient and sediment reduction plans were issued in spring of 2005 for each of the major tributary basins following a public comment period for draft strategies released in April 2004. These strategies were constructed to meet the nutrient reduction targets established by the Chesapeake Bay Program. The strategies were developed in partnership with natural resource agencies and local stakeholders. Full versions of the strategies are available on the Virginia Secretary of Natural Resources website at <http://www.naturalresources.virginia.gov>.

The tributary strategies outline ambitious nutrient and sediment reduction goals and will require significant and consistent resources for implementation over the foreseeable future. In 2007, Virginia's tributary strategies will become increasingly focused as a result of the HB-1150 – passed into law during the 2006 legislative session. The *Chesapeake Bay and Virginia Waters Clean-up and Oversight Act* (HB-1150) requires the Secretary of Natural Resources to develop a comprehensive plan for the clean up of the Chesapeake Bay and Virginia waters designed as impaired by the U.S. EPA. The initial plan is due to the General Assembly by January 1, 2007 with implementation progress updates submitted semi-annually.

Coastal NPS Pollution Control Program

Virginia's Coastal Nonpoint Pollution Control Program continues to support the implementation of action items contained within the *Nonpoint Source Pollution Management Program* document. Development and implementation of the Coastal Nonpoint Source Pollution Control Program (Coastal Nonpoint Program) is required by Section 6217 of the Coastal Zone Act Reauthorization Amendments of 1990. States are required to implement 56 "management measures" within six resource categories. Virginia submitted its program document in 1995 and received conditional approval in 1998.

Virginia is addressing the Marina/Boatyard, Hydromodification, Urban Source and Wetland categories of the Coastal Program Management Measures through such projects as: the Virginia Clean Marina Program; completion of coastal regional curves for stream restoration designs; technical assistance to local governments for innovative designs, use of new planning tools, development and delivery of the Nonpoint Education for Municipal Officials (NEMO) program, support and expansion of the Chesapeake Club messaging, supporting the Joint MD/VA Living Shoreline Summit and the development of a Shellfish TMDL Implementation Plan.

Virginia Nonpoint Source Pollution Education for Municipal Officials (NEMO) Program
Virginia Coastal Nonpoint Education for Municipal Officials Program (VA NEMO) is a partnership between the Chesapeake Bay Offices of National Oceanic Atmospheric Administration (NOAA) and the Environmental Protection Agency (EPA) to provide technical assistance to localities in the Virginia portion of the Chesapeake Bay. The Virginia NEMO Program will be developed as a Train-the-trainer program and will be piloted in a coastal watershed. The key to this program will be the delivery of the messaging and technical assistance. To accomplish this goal, the program will rely upon the DCR Regional Offices, DCR Division of Chesapeake Bay Local Assistance (DCBLA), Planning District Commissions, Soil and Water Conservation Districts, and Watershed groups as the delivery mechanism. NOAA Chesapeake Bay Office will play a key role in the development and delivery of the Program. The VA NEMO Program will utilize such planning tools as the Interactive Stream Assessment Resource (INSTAR), Virginia Conservation Lands Needs Assessment (VCLNA) and the Coastal Geospatial and Educational Mapping System (GEMS).

Shellfish TMDL Implementation Plan (IP). A shellfish IP is being developed for the Occohannock River watershed on the eastern shore of Virginia. This watershed borders the two eastern shore counties of Accomack and Northampton and has a fishery for hard clams and oysters. This a joint effort between the Virginia Department of Environmental Quality (VA-DEQ), Soil and Water Conservation Districts (SWCDs), DCR Regional Offices, VA Department of Health (VA-DOH), VA Marine Resources Commission (VA-MRC), Virginia Institute for Marine Science (VIMS), Eastern Shore Planning District Commission, Eastern Shore Riverkeeper, and United States Department of Agriculture.

Virginia Adopt-A-Stream Program

The Virginia Adopt-A-Stream Program (VAASP) is a statewide program aimed at reducing litter while advancing citizen stewardship and understanding of the Commonwealth's precious waterways. Adopt-A-Stream promotes education, public outreach, citizen involvement, partnership and community capacity-building through Virginia's diverse constituencies. The waterway clean-ups supported by this anti-litter campaign provide a chance for local businesses, civic groups, watershed associations, churches, schools, environmental groups and scouts to work together or separately to do their part.

Founded in 1998, VAASP has had over 20,000 volunteers from 517 groups participate in the Adopt-A-Stream program. These groups have adopted 840 miles of stream and have removed over 10,000 bags of litter since 1998. Objects most commonly recovered include: plastic bottles, aluminum cans, packaged food wrappers, cigarette butts, and other common finds such as tires, furniture and appliances.

During 2006, approximately 3,716 VAASP volunteers accomplished the following activities:

- 3,716 volunteers removed 1,897 bags of litter
- Cleaned approximately 330 miles of streams
- 6 new storm drain stenciling groups stenciled an estimated 25 storm drains for a total of 487 drains stenciled since 1998

Karst Groundwater Protection Program

Since 1994 the Karst Program has been successful in addressing groundwater and nonpoint source pollution problems in the 27 karst counties of western Virginia. Here,

dissolution over geologic time of limestone and dolostone has produced a karst landscape characterized by sinkholes, sinking streams, caves, and large springs. The interaction of surface and groundwater make such areas susceptible to water quality impairments, flooding, land surface collapse, and degradation of natural heritage resources. During 2006, the Virginia Karst Program continued to work collaboratively with citizen, agency, business, and conservation stakeholders to address a range of nonpoint source pollution issues.

Education and Outreach - Twenty Project Underground Workshops in Virginia reached 292 educators, and 26 new facilitators, now certified to run Project Underground Workshops, were trained. The Karst Program cosponsored with Virginia Tech and the Cave Conservancy of the Virginia's a *Growing Communities on Karst* workshop in Lewisburg, WV in October, 2005, reaching 25 stakeholders from along the I-64 corridor west of Lexington. The second annual Chesapeake Bay Academy, attracting 16 teachers from Virginia, was cosponsored by the Virginia Resource Use Education Council with funding from the National Oceanic and Atmospheric Administration. This Academy emphasized relationships between water quality, geology, and land use in the headwaters region of the Chesapeake Bay Watershed in Virginia.

Data Development - TMDL Hydrology studies are proceeding in the North River Watershed of Rockingham and Augusta counties, to delineate subsurface flow patterns within a composite alluvial/karst system that discharges via some of the largest springs in Virginia. Work continued in the Rye Cove area of Scott County, where growing development pressure from the Kingsport (TN) metropolitan effort make determination of subterranean flowpaths essential in planning compatible growth in this geologically complex and biologically sensitive area that includes species known only from caves within a single spring watershed.

Technical Assistance – During 2006 Karst staff provided environmental project reviews of 250 projects for potential impacts to karst resources. A workshop entitled *Managing Stormwater in Virginia's Karst*, was held in December 2006. This 2-day workshop included lecture, field trip, and discussion sessions, and was attended by 14 DCR Division of Soil and Water Urban Programs staff. Attendees shared their individual experiences with the challenges of managing stormwater in karst, and discussed a variety of technical and regulatory solutions to these problems. Staff assisted the NRCS in revision of karst guidelines to allow the Conservation Reserve Enhancement Program to address hydrologically significant sinkholes. Several sinkhole dumps and hydrologically active sinkholes with direct livestock access have been identified and negotiations with landowners to sign up for the WQ-11 Sinkhole BMP are in progress.

Staff continued to work with Virginia DEQ and DGIF on the proposed Water Withdrawal Permit for Blue Spring in Frederick County. Due to the Karst Program's efforts, the minimum instream flow at the spring confluence has been increased from 200,000 to 1,200,000 gallons per day, significantly decreasing the potential for impact of the proposed withdrawal on the biologically significant downstream ecosystem, which includes the only known Virginia locality for the Appalachian Springsnail and a significant population of Wood Turtles, both species listed as endangered in Virginia. In addition, Ogden's Cave, which receives its water from Blue Spring, houses the only known extant population of the Hupps Hill Cave Beetle. As a result of data developed during this project, a 118-acre tract including the cave is being purchased by DCR for incorporation into the Natural Area Preserve System.

Total Maximum Daily Load Implementation Program

Virginia's goal is that all rivers, lakes, streams and tidal waters attain the appropriate beneficial uses. These beneficial uses are described by the following use goals: drinking water, primary contact/swimming, fishing, shellfishing, and aquatic life. These uses are protected by application of the state's numeric and narrative water quality criteria. When the beneficial uses are not being met these waters are considered "impaired" and the state must take steps to meet water quality standards ensure that water quality is restored. One very important step in restoring water quality in the impaired streams is the development of Total Maximum Daily Loads, or TMDLs. The goal of Virginia's Total Maximum Daily Load (TMDL) program is to achieve attainment of water quality standards. The Commonwealth achieves this goal by means of a three-phase process: TMDL development, development of TMDL Implementation Plans (IP) and/or permit conditions, and implementation of permit conditions and/or best management practices. TMDL Reports, Implementation Plans and Implementation progress updates are available on the Department of Environmental Quality's (DEQ) TMDL website at <http://www.deq.virginia.gov/tmdl>.

DCR leads the TMDL implementation efforts in Virginia. The goal of the TMDL Implementation Program is to implement on-the-ground activities, through TMDL watershed implementation plans, that result in watershed restoration and increased water quality improvements and ultimate delisting of impaired stream segments. Virginia uses a staged approach to many TMDLs, which provides opportunities for periodic evaluation of the effectiveness of the implementation actions and adjustment of efforts to achieve water quality objectives in a timely and cost-effective manner. The history of TMDL implementation in Virginia dates back six years ago when DCR started three Pilot TMDL Implementation Projects (Middle Fork Holston, Blackwater River and North River). Now, 6 years later, the program consists of 33 active, organized implementation projects (with plans completed or in progress), all funded through a variety of sources included federal, state, local and non-profit sources. Figure 1 illustrates the distribution and status of implementation efforts in the watersheds throughout Virginia. Table 13, on the following page, contains the status of implementation efforts for these 33 projects.

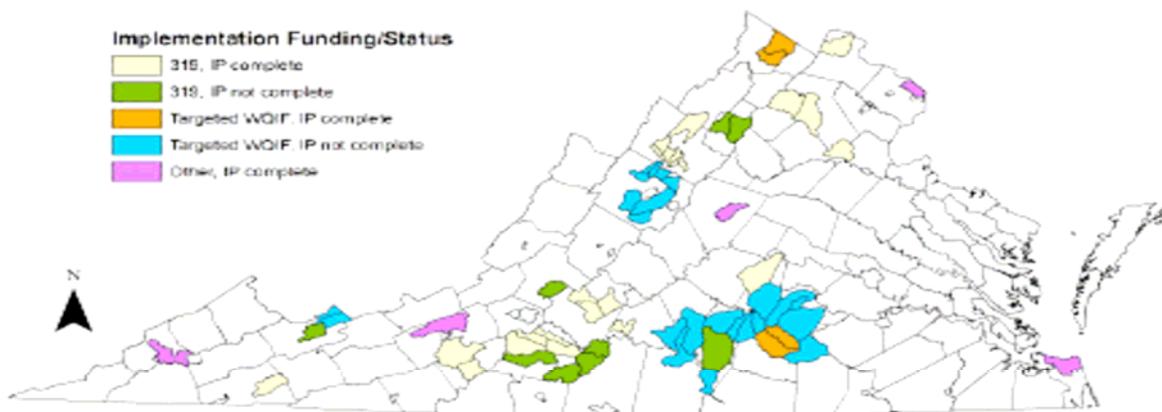


Figure 1 – Implementation Status and Funding by Watershed (Source "TMDL Program Six Year Progress Report: 2000-2006," DEQ 2007)

Table 13: Status of Virginia TMDL/ Watershed Implementation Projects

Watershed Area	TMDL Segment	Water quality Improvement	Year Start	Lead Agency	Funds Used
Projects 1-12 are being funded by 319(h) funds administered by DCR					
1-North River	VAN-B21R, B22R, B27R & B29R	Some improvement	2001	DCR	\$319(h)
2-Middle Fork Holston River	VAS-O05R	Mod. improvement	2001	DCR	\$319(h)
3-Upper Blackwater River	LAW-L08R	Some improvement	2001	DCR	\$319(h)
4-Catoctin Creek	VAN-A-02R	Too early to determine	2005	DCR	\$319(h)
5-Holmans Creek	VAV-B45R	Too early to determine	2005	DCR	\$319(h)
6-Willis River	VAC-H36R	Some improvement	2005	DCR	\$319(h)
7-Lower Blackwater River	VAW-L09R, L10R and L11R	Too early to determine	2006	DCR	\$319(h)
8-Cooks Creeks & Blacks Run	VAV-B25R & B26R	Too early to determine	2006	DCR	\$319(h)
9-Thumb, Great, Carter & Deep Runs	VAN-E01R, E02R & E10R	Too early to determine	2006	DCR	\$319(h)
10-Big Otter River	VAW-L23R, L25R, L27R, & L28R	Too early to determine	2006	DCR	\$319(h)
11-Mill and Dodd Creeks	VAW-N20R & N21R	Not started	2007	DCR	\$319(h)
12-Little and Beaver Creeks	VAS-O07	Not started	2007	DCR	\$319(h)
Projects 13-16 have received some WQIA RFP funds (and other funds as well)					
13-Moore's Creek	VAV-H28R	Too early to determine	2005	DCR	RFP
14-Guest River	VAS-P11R	Too early to determine	2005	DCR	\$319(h), RFP
15-Opequeon Creek	VAV-B09R	Too early to determine	2006	DCR	WQIF, RFP
16-Stroubles Creek	VAW-N22R	Too early to determine	2006	DCR	RFP
Projects 16-20 are not receiving designated funding from WQIF, RFP or 319(h)					
17-Four Mile Run	VAN-A12R	No improvement	2002	DEQ	Other sources
18-Middle Creek/Tazewell County	VAS-P03R	Delisted 2006	N/a	DMME	Other sources
19-Quail Run/Rockingham County	VAV-B35R	Delisted 2005	N/a	DEQ	Other sources
20-Lynnhaven (Shellfish)	VAT-V08E	Too early to determine	2005	DEQ	Other sources
Projects 21-33 have received some WQIA RFP funds (and other funds as well)					
21-Chowan Study Area	VASC-K14R, K15R, K16R, VAP-K22R, K24R, K25R and K32R	Too early to determine	2005	DEQ	WQIF
22-Falling River	VAW-L34R	Too early to determine	2006	DCR/NRCS	WQIF
23-Mossy & Naked Creeks, Long Glade Run	VAV-B19R, B24R, B28R	Too early to determine	2006	DCR/NRCS	WQIF
24-Pigg River (Blue Ridge SWCD)	VAW-L14R, L15R, L16R, L17R	Too early to determine	2006	DCR/NRCS	WQIF
24-Pigg River (Pittsylvania SWCD)	VAW-L13R, L17R, L18R	Too early to determine	2006	DCR/NRCS	WQIF
26-Twittys and Ash Camp Creeks	VAC-L39R	Too early to determine	2006	DCR/NRCS	WQIF
27-Cub, Turnip and Buffalo Creek	VAC-L36R, L37R, L40R	Too early to determine	2006	DCR/NRCS	WQIF
28-Flat, Nibbs, Deep, West Creeks	VAP-J08R, J09R, J11R	Too early to determine	2006	DCR/NRCS	WQIF
29-Moffett Creek, Middle River, Polecat Draft	B10, B13, B15	Too early to determine	2006	DCR/NRCS	WQIF
30-Christians Creek & South River	B14, B30	Too early to determine	2006	DCR/NRCS	WQIF
31-Upper Clinch River	VAS-P01R	Too early to determine	2006	DCR/NRCS	WQIF
32-Spring et. al	VAC-J02R-J06R	Too early to determine	2006	DCR/NRCS	WQIF
33-Abrams Creeks	VAV-B08R	Too early to determine	2006	DCR/NRCS	WQIF

During 2006, DEQ and DCR, along with other agency and non-agency partners, continued to develop and implement TMDLs throughout Virginia, with the completion of 90 TMDLs (consent decree, non-consent decree and shellfish), and the development of 9 Implementation Plans. During 2006, there were 10 active §319(h) funded implementation projects. Collectively these projects implemented Best Management Practices (BMPs) that resulted in the reduction of 5.54E+15 colony forming units (CFU) of Fecal Coliform bacteria, 2,904 pounds of Nitrogen, 411 pounds of Phosphorous, and 253 tons of sediment. The following table (Table 14) summarizes the pollution reductions for all 10 319(h) funded TMDL Implementation Projects from since the beginning of their project implementation.

**Table 14: Section 319(h) - Pollutant Load Reductions By Project/Program Area
January 1 2002-September 30, 2006**

Project Title	Calendar Year	Pathogens (Coliform) CFU	Nitrogen lbs/yr	Phosphorus lbs/yr	Sedimentation- Siltation tons
Middle Fork Holston River (Three Creeks) TMDL Project	2002-2004	6.40E+15	230.35	4.27	9.35
	2005	2.60E+14	799.5	198.1	63.9
	2006	5.37E+14	6,785.10	1,085.40	1,191.60
	TOTAL	7.20E+15	7,814.95	1,287.77	1,264.85
Blackwater River TMDL Project	2002-2004	2.89E+15	212.01	7.96	7.24
	2005	1.80E+15	46	2.9	1.4
	2006	1.00E+15	16.4	2.9	4.1
	TOTAL	5.69E+15	274.41	13.76	12.74
North River TMDL Project	2002-2004	3.36E+15	319.24	25.99	26.88
	2005	1.02E+15	1,686.10	307.5	192
	2006	4.76E+14	5,756.60	1,145.90	498.7
	TOTAL	4.86E+15	7,761.94	1,479.39	717.58
Catoctin Creek TMDL Project	2005	3.15E+13	225.9	43.2	27.7
	2006	1.07E+14	56.7	1.5	0.5
	TOTAL	1.39E+14	282.6	44.7	28.2
Holmans Creek TMDL Project	2005	4.73E+10	924.5	181.9	110
	2006	3.47E+14	78.2	0.1	0.03
	TOTAL	3.47E+14	1,002.70	182	110.03
Willis River TMDL Project	2005-2006	1.40E+15	28.8	5.1	1.19
	TOTAL	1.40E+15	28.8	5.1	1.19
Cooks Creek and Blacks Run TMDL Project	2006	4.73E+10	826.36	79.31	50.82
	TOTAL	4.73E+10	826.36	79.31	50.82
Lower Blackwater River, Maggodee & Gills Creek TMDL Project	2006	8.52E+14	177.57	10.58	2.44
	TOTAL	8.52E+14	177.57	10.58	2.44
Thumb, Deep, Carter and Great Runs TMDL Project	2006		4	4	4
	TOTAL		4	4	4
Grand Total		2.05E+16	2,733,912.39	1,002,210.02	174,400.85

Cooperative Watershed Programs

A summary of the reported activities of cooperative watershed programs for 2006 for each of the major Virginia river basins is provided below and includes additional details on the primary DCR NPS program areas discussed above as well as updates on watershed roundtables.

Albemarle Sound & Chowan River Basin

Agriculture – The four Soil and Water Conservation Districts located in the Albemarle/Chowan River Basin are Virginia Dare, Chowan Basin, Peanut and Appomattox River. In FY06, cost share allocations to these four districts totaled \$581,472. An additional \$78,845 was allocated to these districts as an award for their performance in FY05. Of the above funds, \$405,525 was targeted towards priority BMPs: cover crops, nutrient management plans, and continuous no-till. Two new technical employees were hired by Districts in the Albemarle/Chowan Basin in the fall of 2006. Funding for these positions was provided by the General Assembly.

Erosion & Sediment Control – The review of the City of Chesapeake's Erosion & Sediment Control Program is due to begin on 02/07/07. The review of the City of Emporia's Erosion & Sediment Control Program was carried out in December 2006. DCR staff are currently developing a CAA agreement to bring the City of Emporia into provisionally consistent status. DCR staff have continued to provide local program assistance in the area of plan review for City of Emporia & Greensville County.

Nutrient Management – DCR Suffolk office staff prepared and delivered 57 nutrient management plans in the Albemarle and Chowan basins covering a total of 14,638 acres. These plans include a mixture of plans for VPA permitted animal feeding operations as well as plans required for federal and state cost-share and/or tax credit programs. In addition DCR nutrient management staff are also providing nutrient management planning and technical assistance to local governments, state agencies and other public institutions. This service supports both the nutrient management planning and implementation goals and the stormwater management goals identified in the Tributary Strategies.

Roundtable – The Albemarle-Chowan Roundtable working in partnership with the Albemarle-Pamlico National Estuary Program is working on developing new and stronger relationships with local, state and federal stakeholders within the watershed and facilitating information sharing among those stakeholders in both Virginia and North Carolina. Since the successful initial meeting the Roundtable has been focusing on developing three working committees. The three committees are Public Relations, Outreach and Education, Natural Resources and a Steering Committee. The focus of Public Relations, Outreach and Education includes public relations, school/teachers, ecotourism, litter and adult education. The focus of the Natural Resource Committee includes growth & development, water use & supply, water quality and ground water protection. The steering committee is focusing on advocacy/legislative efforts, Funding, strategic planning, administration, and Public Relations with governmental entities.

Big Sandy River Basin

Agriculture – The Big Sandy River Basin in Virginia only encompasses three Soil and Water Conservation Districts. Although agriculture is not the predominant land use, promoting good conservation practices to the existing farming community is used as another step toward clean water. Each Soil and Water Conservation District seeks to use every available source of funding to resolve water quality impairments from the Big Sandy River Basin.

Erosion & Sediment Control – Each locality in the Big Sandy River Basin is responsible for administering its Erosion and Sediment Control program with the exception of Buchanan County which is administered by the Big Sandy Soil and Water Conservation District.

Nutrient Management – Nutrient management planning is typically only applied to grazing systems in the Big Sandy basin due to a lack of cropland. Nutrient management is currently being utilized on 947.9 acres including two areas owned by the state. As abandoned mined land becomes managed for grazing, nutrient management planning will be key in providing quality forage.

TMDL – The Knox Creek and PawPaw Creek TMDL Studies and Implementation Plans were completed in 2006. A TMDL Study for Garden Creek began in the fall of 2006.

Roundtable – The Big Sandy River Basin Coalition, a tri-state partnership including Virginia, Kentucky and West Virginia, hosted the 2006 Big Sandy River Tri-State Conference on April 7 & 8, 2006 at Breaks Interstate Park. The theme for the conference was Work in the Watershed. The coalition continues to recruit volunteers, citizen groups and agencies to visit streams in their community that feed into the Big Sandy River, Tug Fork, Levisa Fork, Russell Fork and other tributaries. This initiative supports the Big and Little Sandy Watershed Water program and participants are asked to take photographs, measure water quality, inventory aquatic organisms and tell the story of the river along the way. The Coalition is working to complete a long-term strategic plan. The plan includes partnering closely with the Ohio River Valley Water Sanitation Commission to improve the water quality of the Upper Big Sandy River Watershed to thereby improve the water quality of the main stem of the Ohio River.

Eastern Shore

General – Implementing NPS components of the *Eastern Shore Tributary Strategy* has been a cooperative team effort between the state and federal natural resource agencies and the Eastern Shore Watershed Network (ESWN). The ESWN is a diverse group of stakeholders including the Eastern Shore SWCD, staff of Accomack and Northampton counties, Accomack-Northampton PDC, Eastern Shore RC&D Council, the Eastern Shore Coast Keeper and citizens. The ESWN's role includes logistics, outreach, and implementation planning for the tributary strategies. This Tributary Strategy Team has been meeting regularly to develop an effective regional approach to implement the restoration targets listed in the Eastern Shore Tributary Strategy Input Deck.

Agriculture – DCR has identified priority practices and increased cost share allocations for agricultural BMP implementation. Increased funding and a targeted approach to practices have resulted in a dramatic regional increase in the use of annual cover crops.

Erosion & Sediment Control – DCR staff completed local program reviews for Northampton County and the Town of Cape Charles in 2006. All three Eastern Shore local programs (Accomack County, Northampton County, and Town of Cape Charles) have signed corrective action agreements with DCR and are now provisionally consistent with program requirements. Local staff is working with DCR on required and recommended improvements to their programs.

Stormwater Management – DCR staff continued implementation of the Virginia Stormwater Management Program (VSMP) construction general permit by inspecting sites. These inspections generated informal enforcement actions. DCR staff worked with local governments to inform and encourage the regulated community of general permit requirements.

Nutrient Management – DCR Suffolk office nutrient management staff wrote a total of 47 agricultural nutrient management plans in the Lower James and Eastern Shore basin covering 7,116 acres in 2006. DCR staff is now providing local governments and public institutions urban nutrient management planning and technical assistance on publicly owned land. This service supports both the nutrient management planning and implementation goals and stormwater management goals identified in the Tributary Strategies.

Roundtable – The ESWN developed the website, www.vawatersheds.org/easternshore, to help coordinate with members of the Watersheds Network and citizens of the Eastern Shore. It includes a directory of programs (with both links and contact information), links to various water quality data, as well as a discussion of regionally significant issues relating to water quality and conservation. The Eastern Shore Environmental Education Council, as subset of the ESWN, has published two “Shore Outdoors” newspaper insert as a seasonal environmental guide to area resources. The publication reaches a readership of over 12,000 or 65% of area households.

Other – The Eastern Shore SWCD and the Accomack-Northampton PDC created map products using ArcGIS to analyze the presence or absence of vegetative shoreline buffers along the blue line streams in the Chesapeake Bay watershed in Accomack County. The GIS analysis included identification of vegetative buffers, buffer width, and type of vegetation (trees or grass) or development. The analysis was based on existing DCR watershed and stream data and the 2002 Virginia Base Mapping Project digital orthophotos. These maps will be used by local agencies for targeting buffer restoration on agricultural lands.

Lower James River and Lynnhaven Coastal Basins

General – The implementation of the NPS components plan for the Lower James and Lynnhaven portions of the *Chesapeake Bay Nutrient and Sediment Reduction Tributary Strategy for the James River, Lynnhaven and Poquoson Coastal Basin* is a cooperative effort between the state and federal natural resource agencies and the Lower James River Roundtable, the Hampton Roads local governments Chesapeake Bay Committee and the Hampton Roads Stormwater Committee, hosted by the Hampton Roads Planning District Commission (HRPDC). This Tributary Strategy Team is meeting regularly to develop a draft regional plan to implement the BMPs listed in the Lower James River Tributary Strategy Input Deck.

Agriculture – DCR has identified priority practices and increased cost share allocations for agricultural BMP implementation. Increased funding and a targeted approach to practices have resulted in a dramatic regional increase in the use of annual cover crops.

Erosion & Sediment Control – DCR regional staff continues to work with local programs to provide technical and regulatory assistance. The Cities of Virginia Beach and Suffolk have fully consistent programs. Localities with signed corrective action agreements are provisionally consistent with program requirements. Local staff is working with DCR on required and recommended improvements to their programs.

Stormwater Management – Six localities in the Lower James Roundtable are in the process of having their individual (Phase I) Municipal Separate Storm Sewer System (MS4) permits reissued by DCR. As a result, stormwater management planning at the local level to support permit requirements was a regional focus this year. Both Phase I and Phase II localities worked closely in developing approaches that make sense for the region. DCR staff continued implementation of the Virginia Stormwater Management Program construction general permit by inspecting sites. DCR staff worked with local governments to inform and encourage the regulated community of general permit requirements.

Nutrient Management – DCR Suffolk office nutrient management staff wrote a total of 47 nutrient management plans in the Lower James and Eastern Shore basin covering 7,116 acres in 2006. Plans written during 2006 are based on the P-index, providing improved nutrient management. DCR staff is now providing local governments and public institutions urban nutrient management planning and technical assistance on publicly owned land.

Other – HR STORM, the stormwater education program of the Hampton Roads Planning District Commission, is a coalition of local government staff members who come together to share ideas and pool resources for targeted educational program efforts about stormwater management. This program uses various program elements and media outlets to educate citizens on NPS and stormwater issues. Websites, newsletters, publications, educational mini-grants, and media campaigns are all part of the effort. Specific campaigns address pet and automotive waste management and homeowner maintenance of stormwater BMPs.

Middle James River Basin

Erosion & Sediment Control – In 2006, the James Office conducted local program reviews for the Town of Farmville and Nottoway County. Powhatan County's review was also concluded with all three programs entering into a Corrective Action Agreement with DCR. Program review data was also collected for Nelson County, Buckingham County, City of Richmond and City of Colonial Heights and these reports are currently under review. DCR hired a stormwater compliance specialist for the Virginia Stormwater Management Program, working to bring private developments of one acre or more into compliance through permit acquisition and compliance with the Stormwater Permit.

Stormwater Management – Two WQIF grant awards in the Middle James watershed focus heavily on stormwater management. Chesterfield County's WQIF grant aims to implement low impact development practices at demonstration sites for two of three development sectors: residential, commercial or industrial. Grant funds will be used to cover the added engineering costs for LID to be incorporated into new development sites. The James River Association received a WQIF grant focused on stormwater management to do an "extreme stream makeover" in the City of Colonial Heights. The JRA project focuses on stream restoration, installation of raingardens and bioretention areas, and rain barrels.

Nutrient Management – In the James Watershed Office, the focus of nutrient management plan writing is on operations permitted through the Virginia Pollution Abatement (VPA) program. The majority of plans written in 2006 have been revisions of VPA swine, dairy, or poultry farm plans. Approximately 3-4 revisions are written each month covering an average of 370 acres. One to two new plans are written each month, with the majority of these being written for producers participating in state or federal cost-share programs.

TMDL – The Willis River TMDL Implementation Project completed its first year working with Peter Francisco SWCD and began its second year of implementation of a 5-year TMDL project.

Roundtable – In January, the Middle James Roundtable embarked on a process of increasing stakeholder participation in an effort to engage other watershed partners to reduce nonpoint source pollution through various regional initiatives. The roundtable's steering committee meets quarterly. A number of meetings have incorporated programs presented by local government staff and local watershed organizations on their water quality improvement progress. The roundtable has an education and outreach working group and a landuse working group. Additionally, the roundtable holds two larger stakeholder meetings annually to discuss implementation of watershed projects and nonpoint source pollution reduction initiatives. A new website serves as a clearinghouse for implementation information relating to NPS reduction and the strategies.

Other – Two areas of the watershed requested assistance with watershed-planning in 2006: Lynchburg College in the City of Lynchburg and Prince George County. Unfortunately Prince George County lacks staff capacity to move forward with watershed planning. DCR James office staff is working with Prince George to examine ways to increase staff capacity. Lynchburg College received funding from a NFWF Small Watershed Grant to begin a watershed plan for Blackwater Creek. DCR is providing technical assistance to Lynchburg College.

New River Basin

Agriculture – The New River Basin serves as home to five Soil and Water Conservation Districts: Big Walker, New River, Patrick, Skyline and Tazewell SWCDs. These five SWCDs received a total allocation of over \$1million for FY 06 with \$321,000 for priority practices and \$42,000 for contractual practices. Three of these districts were recognized as top performing districts and awarded \$3,608 each in Southern Rivers Priority funds. Two New River Basin districts received funds to hire 1.5 Ag Technical Assistance staffers for two years in order to increase the capacity of the districts to spend increased amounts of cost-share dollars. In addition, one other New River Basin district received funds to hire a new staffer to serve the district's TMDL watersheds for two years as well as funds to implement specific types of projects in those watersheds.

Erosion and Sediment Control - DCR staff completed reviews of the Erosion and Sediment Control (ESC) Programs administered by the Town of Dublin, the City of Galax, Giles County, and Pulaski County to assess their respective levels of consistency with the ESC Law and Regulations. These localities are working with DCR to address required and recommended improvements to their programs.

Stormwater Management - DCR staff continued implementation of the Virginia Stormwater Management Program (VSMP) Construction General Permit through site inspection and technical assistance. Inspections were performed to monitor compliance with the conditions of the General Permit, which resulted in corrective action through re-inspection and informal compliance actions. Regional office staff worked with local governments to broaden the regulated community's awareness of their responsibilities under the General Permit.

Nutrient Management – In the New River Watershed Office, nutrient management plans were written for farms holding Virginia Pollution Abatement (VPA) permits, farms receiving federal and state cost-share funds, or state owned land. Fourteen plans were written in the basin covering 4023.4 acres. All plans written during 2006 were phosphorus based.

TMDL – The Mill and Dodd Creeks TMDL Implementation Plan has been completed and implementation has begun, working with the Skyline SWCD. A WQIF grant was issued to assist in the Stroubles Creek TMDL Implementation.

Roundtable – The New River Watershed Roundtable's (NRWR) Clean Up Focus Group coordinated a basin-wide stream cleanup on Saturday, September 23, 2006. Adopt-A-Stream reaches were encouraged to work their sites during the cleanup. This group continued efforts to implement strategies in the Solid Waste Management and Reclamation Section of the NRWR Strategic Plan. During 2006, The NRWR's Forestry Focus Group assisted with a Critical Habitats workshop in Galax. The group also continues to implement strategies in the Forestry section of the Strategic Plan. A multidisciplinary conference, the New River Symposium is being planned for May 31-June 2, 2007 at Radford University.

Potomac River Basin

Agriculture – Four SWCDs are located in the Potomac watershed service area: Prince William, Loudoun, John Marshall and Northern Virginia. For FY06, these districts received an allocation of \$673,762 and an additional \$161,000 based on their performance in the previous year. The SWCDs issued \$646,927 to watershed landowners, which included the installation of 126 BMPs. Livestock stream exclusion, grazing land protection, providing alternative sources of livestock water and planting riparian buffers were the primary practices funded.

Erosion & Sediment Control – DCR Potomac Watershed staff completed local program reviews for Manassas Park City, Manassas City, Town of Occoquan and the county of Arlington during 2006. Staff continues to work with local governments on recommended improvements to their local program. As part of an ongoing effort to improve local erosion and sediment control programs, DCR Potomac Watershed staff hosted two regional workshops for local governments to discuss problems and opportunities related to their programs.

Stormwater Management – DCR Potomac Watershed staff implemented a compliance inspection program for construction sites operating under Virginia Stormwater Management Program (VSMP) permits establishing a close working relationships with local governments and private sector companies involved in the land development process. In 2006, staff conducted 135 compliance inspections, and conducted numerous joint VSMP compliance inspections of construction sites with the U.S. EPA. Over the course of the year, construction sites have steadily improved their level of compliance with the requirements of the VSMP.

Nutrient Management – During 2006, DCR Potomac Watershed nutrient management staff wrote 102 agricultural nutrient management plans in the Potomac and Shenandoah basin covering 13,637 acres. Plans were prioritized according to the Tributary Strategy document as well as the Department of Environmental Quality 303d – Impaired Streams list. In the urban area, DCR staff worked with local governments as well as state and federal staff in developing urban nutrient management plans on publicly owned land as well as private golf courses. During 2006, staff developed 20 plans covering 1750 urban acres in the Potomac and Shenandoah basin.

TMDL – The Catoctin Creek TMDL Implementation Project continued its second year of a 5-year project working with Loudoun SWCD and Loudoun County Health Department on Agricultural and Residential BMP installation.

Roundtable – The Potomac Watershed Roundtable (PWR) made up of member local governments and SWCDs in the Potomac basin, continues to support and promote water quality and non-point pollution control in the Northern Virginia area. The PWR conducted four meetings in 2006 addressing topics such as: low impact development (LID), risks of acid sulfate soils, stormwater management education, tributary strategies, Chesapeake Bay nutrient trading, conservation planning for agricultural BMPs, and phosphorus reduction in lawn fertilizations – A Scotts Miracle-Gro Initiative. The PWR supported legislative efforts to create an Urban BMP Cost Share Program and Better Labeling for fertilizers used by homeowners. A LID workgroup was created from the PWR and other interested groups, and is developing a manual that will list and provide technical information for LID practices.

Rappahannock River Basin

General – Local government efforts to improve water quality have been extensive throughout the year. The greatest success for the Rappahannock watershed was in Fredericksburg, where the City Council placed 4,232 acres of riverfront land, a 31-mile corridor on the Rappahannock and Rapidan Rivers, into a permanent conservation easement.

Agriculture – Seven SWCDs that lie partially or wholly in the Rappahannock watershed received approximately \$3.1 million in FY06. Of these funds, approximately \$0.6 million was earmarked for the priority BMPs: cover crops, nutrient management planning, and continuous no-till. In addition, nearly \$1 million was earmarked for contractual practices. Initial obligation and signup of cost share funds have outpaced available funding. In some SWCDs, signup within the first 3 months has tripled total available funding.

Erosion & Sediment Control – Three local erosion and sediment control program reviews were conducted in the Rappahannock watershed during 2006 for Greene County, Essex County, and the Town of Culpeper. All of these were found inconsistent and have since developed corrective action agreements to rectify programmatic problems. During 2006, Culpeper County fully implemented its corrective action agreement and was found Consistent by the Virginia Soil & Water Conservation Board. This represented significant changes by the County as well as a great deal of programmatic and technical assistance by DCR stormwater field staff.

Nutrient Management – DCR nutrient management planners wrote plans on over 11,000 acres of agricultural land in the Rappahannock watershed. Many of these were new plans, reflecting our intense efforts to increase participation in conservation programs.

TMDL – The Thumb, Carter, Great and Deep Runs TMDL Implementation Plans has been completed and implementation has begun, working with John Marshall SWCD and Fauquier County Health Department.

Roundtable – The Rappahannock River Basin Commission recently sanctioned a Nonpoint Source Workgroup that includes staff from DCR, VCE, SWCDs, Farm Bureau, local governments, planning district commissions, and members of the Commission. The workgroups most successful initiative has been the conceptualization of a statewide web portal. This portal, which is based partly on a California initiative, will incorporate development laws and regulations of state and local agencies. It is intended to be a “one-stop shop” for landowners wanting to ensure compliance with all relevant laws and regulations when developing their land.

Other – The Friends of the Rappahannock (FOR) held an Erosion & Sediment Control workshop for citizens in 2006. The workshop was intended as a very basic educational tool for citizens to better understand development sites, erosion and sediment control practices and violations, and who to contact regarding potential violations. Based on interest and overall success of the project, FOR plans to hold these citizen-training sessions on an annual basis.

Roanoke River Basin

Agriculture – The six SWCDs served by the DCR Roanoke Watershed office cover parts of the Roanoke, Chowan and Upper James watersheds. The FY06-07 Ag BMP cost share grants to these SWCDs allocated \$1,545,597.00 for Southern Rivers and \$32,858.00 for the James River. Three SWCDs in the Roanoke Basin were also issued a total of \$1,400,000.00 for WQIA TMDL Ag. BMP cost share for a two year period . One SWCD has requested \$20,000.00 for CREP payments. Since July 06, three WQIA TMDL technical employees have been hired, two 319 TMDL technical employees have been hired and three part time agricultural positions have been funded.

Erosion and Sediment Control – As an ongoing effort to ensure consistency throughout the watershed, DCR regional staff continues to work with local programs to provide technical and regulatory assistance. In 2006, the Roanoke Watershed Office completed local program reviews for the City of Danville, the City of Bedford, the Town of South Hill and Mecklenburg County. All four localities signed corrective action agreements and are provisionally consistent with program requirements. The City of Bedford has since had its Corrective Action Agreement follow-up review and the locality was found to be consistent with program requirements. Program review data was also collected for Lunenburg County and Charlotte County and the reports are currently under review. As an ongoing effort to improve local erosion and sediment control programs, DCR Roanoke Watershed staff hosted its third annual regional workshop for local program and government personal to discuss issues related to local programs and give program updates.

Stormwater Management – DCR staff performed compliance inspections for the Virginia Stormwater Management Program (VSMP) General Permit for Discharges of stormwater from Construction Activities. In performing inspections, education and technical assistance on the VSMP General Permit and its requirements have been provided to the land development community including; landowners, developers, contractors, and engineers. DCR staff has also worked closely with Roanoke Watershed localities to inform the land development community

of the VSMP General Permit and its requirements.

Nutrient Management – In the Roanoke River Watershed, nutrient management plans were written for farms holding Virginia Pollution Abatement (VPA) permits, farms receiving federal and state cost-share funds, or state owned land. Twelve plans were written in the basin covering 7841.2 acres. All plans written during 2006 were phosphorus based.

TMDL – The Lower Blackwater TMDL Implementation Plan and the Big Otter River TMDL Implementation Plan have both been completed and implementation has begun, working with Blue Ridge SWCD and Peaks of Otter SWCD respectively. The Upper Blackwater River TMDL Implementation Project was in its fifth and final year of a five-year TMDL Implementation Project.

Roundtable – The Upper Roanoke River Roundtable (URRR) hosted a Fall Waterway Clean Up on October 7, 2006. During the clean up an estimated 24 tons of trash was collected from streams and banks by over 350 volunteers. The URRR is working in collaboration with Roanoke County on a WQIA project in Garst Mill Park, including stream bank stabilization and a public education component. The roundtable remains active in supporting the Virginia Save Our Streams (VASOS) program through citizen water quality monitoring. Educational materials on pet water contributions to bacteria impairment were developed for citizens, and a pet waste receptacle was installed along several popular greenways.

Shenandoah River Basin

General – Major issues in the Shenandoah watershed include the recent fish kills along the North and South Forks of the Shenandoah River, the potential expansion of the I-81 corridor, continued challenges of implementing TMDLs including increased responsibilities for SWCDs in implementation, and capacity building in SWCDs to implement BMPs with increased amounts of cost share.

Agriculture – Four SWCDs served by the DCR Shenandoah Watershed office have the Shenandoah watershed within their boundaries: Headwaters, Mountain, Shenandoah Valley and Lord Fairfax. The FY06-07 cost share grants to these four districts allocated \$1,582,025 for both FY06 and for FY07, compared to FY05 allocations that totaled \$1,344,111. In FY06 these four districts issued payments to landowners totaling \$905,853 for Ag-BMP installation. Additionally \$845,847 was allocated to landowners with structural Ag-BMPs under construction prior to the close of FY06. Additional federal funding for TMDL Implementation Plans was available for two districts. CREP payments totaled \$67,924 for riparian buffer installations. In Spring 2006, the General Assembly provided additional funding allowing the Shenandoah Basin districts to hire six new technical staffers in the fall of 2006.

Erosion & Sediment Control – Three program reviews in the Shenandoah River watershed were conducted in 2006: Shenandoah County, Page County and City of Staunton. The City of Staunton review is draft and under review. Corrective Action Agreements were negotiated with Rockingham County, City of Winchester, Town of Bridgewater, City of Waynesboro, Shenandoah County and Page County.

Stormwater Management – A Stormwater Compliance Specialist was hired in the DCR Staunton office to work with the Virginia Stormwater Management Program, to bring private developments of one acre or more into compliance through permit acquisition and compliance with the Stormwater Permit. The City of Staunton was awarded a WQIF grant to install three bioretention filters in the Lewis Creek watershed and to support revisions to their stormwater utility fee. The Shenandoah Valley SWCD was also awarded a WQIF grant to install eight raingardens in the Blacks Run and Cooks Creek watersheds. A green roof was recently completed at James Madison University, which will serve as an excellent educational tool for the university while also helping to manage stormwater on the campus.

Nutrient Management – During the 2006 reporting period, DCR Shenandoah Watershed nutrient management staff wrote a total of 201 agricultural nutrient management plans in the Shenandoah and Upper James basin covering 21,273 acres.

TMDL – The Blacks Run and Cooks Creek TMDL Implementation Plan has been completed and implementation has begun. Two WQIF grant awards, one with Shenandoah Valley SWCD and another with City of Harrisonburg, address residential and urban nutrient loads in both Blacks Run and Cooks Creek. The Holmans Creek TMDL Implementation Project was in its second year of a five-year project. The North River TMDL Implementation Project is in its fifth and final year of implementation. Two of the North River watersheds, Muddy Creek and Lower Dry River, were selected as success stories for the state and were featured in a publication that is now posted on the EPA's website. DCR is shifting focus to Page County for develop of an implementation plan for the Mill and Hawksbill Creek watersheds. We will be working closely with the Page County Water Quality Advisory Committee to develop this plan. The Virginia Department of Environmental Quality is currently developing a TMDL for the South River, which has a mercury impairment.

Roundtable – The Shenandoah Valley Pure Water Forum celebrated its 10th Anniversary on October 13, 2006. The Pure Water Forum has been working to develop a GIS mapping tool to provide localities with a basis for watershed-based planning efforts. The tool will assist planners with identifying impaired waters and mapping existing and planned land uses. As a pilot project, Pure Water Forum plans to work with the Page County Water Quality Advisory Committee in using the mapping tool to further existing watershed planning activities. In addition, the Pure Water Forum is working with DCR and James Madison University on a rapid watershed assessment project for the South Fork Shenandoah watershed with funding from the Natural Resource Conservation Service. The project will identify conservation needs in the watershed, and will serve as a foundation for smaller-scale watershed planning efforts in the basin.

Other – Watershed planning efforts have continued in Page County. The Page County Watershed Advisory Committee has formed subcommittees in order to address specific issues related to watershed planning in the county: ordinances, sub-watershed planning and education. With DCR beginning TMDL Implementation Plan development for two watersheds in Page County, the committee is currently exploring ways in which to integrate their watershed planning efforts with the goals and objectives of the TMDL implementation plan.

Upper James River Basin

General – Major issues in the Upper James watershed this year include capacity building in SWCDs to implement BMPs with increased amounts of cost share and dam maintenance requirements and needed upgrades to meet new safety requirements (i.e. major dam rehabilitation projects).

Agriculture – Four districts served by the Shenandoah Watershed office have the Upper James watershed within their boundaries: Headwaters, Mountain, Natural Bridge and Mountain Castles. The FY06 - 07 cost share grants to these four districts allocated \$469,082 for both fiscal years, compared to FY05 allocations of \$356,541. In FY06 these four districts issued payments to landowners totaling \$394,339 for agriculture BMP installation. Additionally these districts obligated \$281,433 to landowners with structural agricultural BMPs under construction prior to the close of FY06. These districts also issued CREP payments totaling \$15,954 for riparian buffer installations. In Spring 2006, the General Assembly provided additional funding allowing the Upper James watershed SWCDs to hire 1.5 new technical staffers in the fall of 2006.

Erosion & Sediment Control – The DCR Staunton office conducted an erosion and sediment control program review for City of Buena Vista in 2006. Corrective Action Agreements have been negotiated with the City of Buena Vista and Rockbridge County.

Stormwater Management – The City of Lexington received a WQIF grant to continue efforts to pursue low impact development strategies for stormwater management. The project includes the installation of 2 Filterra systems, a bioretention and biofiltration bed and three raingardens.

TMDL – TMDL Implementation Plan development has begun in the Looney Creek watershed. This will be the first TMDL Implementation Plan for the Upper James watershed. The TMDL for the Jackson River is nearing completion, with a public meeting held in September 2006. The TMDL will address excess nutrient loading in the watershed, particularly phosphorous. The VA DEQ plans to develop TMDLs for the Little Calfpasture River, Cedar Grove Branch, and Hays and Moffats Creeks. These new TMDLs are scheduled to be developed between 2007 and 2008.

Roundtable – The Upper James Watershed Roundtable is working to gain status from the federal government as a defined Resource Conservation and Development area (RC&D). A new roundtable website provides the public with information about the group and maps showing citizen bio-monitoring locations within the watershed. The roundtable worked with Virginia Save Our Streams to train additional citizen monitors in the basin with the hopes of developing a strong monitoring network. The roundtable held an environmental education summit at Douthat State Park on March 13, 2006, and is currently planning a workshop on conservation easements for early 2007. The workshop is targeted to professionals who work with landowners to place conservation easements on their property (real estate agents, tax attorneys, estate planners, etc.).

Other – A successful analysis of local land use ordinances, practices and policies was a highlight in advancing the science of water quality and watershed restoration in the James Basin this year. The James River Association, in partnership with the Center for Watershed Protection and 3 state universities, led the graduate-level study, *Building A Cleaner James River*. This study characterized localities within the James in one of five categories ranging from “Urban Impacted” to Rural Protected”. This study concluded that all localities that were evaluated could

benefit from reviewing and updating codes and ordinances to improve their water quality. For more information on this project, visit: www.jamesriverassociation.org

Upper Tennessee River Basin Including Clinch & Powell River Basins

Agriculture – The Upper Tennessee River Basin is composed of seven Soil and Water Conservation Districts which have utilized thousands of Agricultural Incentives Program (cost-share) dollars. Agriculture is still a business in the Upper Tennessee basin and continues to embrace best management practices that improve the health of the water. Participation in state and federal cost-share programs has risen to the maximum level of available funding still leaving a huge amount of unmet needs.

Erosion & Sediment Control – Four localities in the Upper Tennessee drainage were reviewed for compliance with the Erosion and Sediment Control Law by the Department of Conservation and Recreation. With increasing development in many areas of the basin, the need for education for local governments, contractors and developers continues.

Nutrient Management – The counties in the Upper Tennessee River Basin still have a healthy dairy and crop farming community. During 2006, a total of 3886.8 acres of farmland received plans including one biosolid plan and 909.3 acres of land owned by the Commonwealth.

TMDL – In the Upper Tennessee River basin, the Little & Beaver Creeks TMDL Implementation Plan is complete and work began by the Holston River SWCD. Also, the Middle Fork Holston River TMDL Implementation Project (Three Creeks) is in its fifth and final year of a five-year TMDL Implementation Project. In the Clinch-Powell River basin, the Guest River TMDL Implementation Plan was completed in 2005 by DEQ and several WQIF and 319 grants were awarded for TMDL implementation. A TMDL study for the Upper Clinch, as it runs through the town of Tazewell, was completed and an Implementation Plan will be developed in 2007.

Roundtable – The Upper Tennessee River Roundtable (UTRR) hosted a regional stream cleanup in 2006 with 418 volunteers who picked up 20 tons of litter. The UTRR hosted six rain barrel workshops, reaching 123 citizens and teachers who constructed 143 rain barrels. The UTRR also sponsored a series of six Low Impact Development Workshops for Tazewell and Wise Counties. With WQIA funding, the UTRR has planned three more workshops for Lee County, six rain gardens and one bioretention facility. The Guest River Restoration Project received WQIA funding to continue putting projects on the ground as prescribed by their TMDL Implementation Plan. During 2006, the Powell River Partnership assisted with the clean up of Stonega Temple, an EPA designated superfund site.

York River and Small Coastal Basins

Agriculture – The seven soil and water conservation districts which lie partially or wholly in the York Watershed received approximately \$1.5 million this fiscal year. Of these funds, approximately \$300,000 was earmarked for the priority BMPs. In addition, nearly \$700,000 was earmarked for contractual practices. Initial obligation and sign-up of cost share funds have outpaced available funding. Continuous no-till farming in the York is becoming increasingly popular. Approximately 80% of the farms practice continuous no-till, largely due to economies of scale, soil structure benefits, reduced fuel expenses, water infiltration, increased biomass and

less labor and equipment expenses. Monetary incentives for this practice have helped many farmers make the switch from conventional to no-till much easier.

Erosion & Sediment Control – One local program review was conducted over the past year, Charles City County. The county has made substantial progress in meeting the corrective action agreement and appears to be on course to achieve a Consistent rating within 6 months.

Nutrient Management – DCR nutrient management planners wrote nutrient management (NM) plans on over 27,000 acres of agricultural land in the York watershed. Most plans were revised based on the majority of farmers' interest in updating NM plans prior to January 1, 2007, which is when all nutrient management plans are required to be phosphorus based. Nutrient management plans are typically written for implementation over a three-year time period.

Roundtable – The York River and Small Coastal Basin Roundtable continues to evolve and reinvent itself. The group met in 2006 to discuss methods of improving local governments general knowledge of water quality and to expand their technical capabilities to make more informed decisions impacting water quality.

Cooperative Programs Administered by Partner Agencies

Total Maximum Daily Load Development – DEQ

The goal of Virginia's Total Maximum Daily Load (TMDL) program is to achieve attainment of water quality standards. The Commonwealth achieves this goal by means of a three step process: TMDL development, development of TMDL Implementation Plans (IP) and/or permit conditions, and implementation of permit conditions and/or best management practices. TMDL Reports, Implementation Plans and Implementation progress updates are available on DEQ's TMDL website at <http://www.deq.virginia.gov/tmdl>.

TMDLs are required for water bodies that are determined to be impaired. In general, TMDL development is required under Section 303(d) of the Federal Clean Water Act and the U.S. Environmental Protection Agency's (EPA) Water Quality Planning and Management Regulations (40 CFR Part 130). The Virginia TMDL program is also governed by a federal court Consent Decree that lays out a schedule for TMDL development through 2010 for waters identified as impaired by 1998. For all other water bodies, TMDL development will be scheduled within 8-12 years of finding the water body impaired.

Virginia's Department of Environmental Quality is the lead agency for the development of TMDLs. DCR and DEQ together are working on the development of TMDL Implementation Plans, and DCR is leading the way in the implementation of these plans.

During 2006, DEQ and DCR, along with other agency and non-agency partners, continued to develop and implement TMDLs throughout Virginia. During 2006, the work of these agencies resulted in the development of 90 TMDLs (consent decree, non-consent decree and shellfish). As of May 2006, Virginia had completed 344 TMDLs, 168 for free flowing streams and 107 for shellfish closures (these may be counted as multiple TMDL impairment listings) and de-listed an additional 72 impairments

Agriculture -Pesticide and Container Disposal Programs – Virginia Department of Agriculture and Consumer Services (VDACS)

Virginia's Pesticide Disposal Program is a cooperative effort among the VDACS and the Virginia Pesticide Control Board (PCB), with participation from Virginia Cooperative Extension (VCE), and the Division of Consolidated Laboratory Services (DCLS). The disposal of canceled, banned or unwanted agricultural and commercial pesticides poses a significant challenge to agricultural producers and other pesticide users due to its high cost. The proper disposal of waste pesticides eliminates a potential threat to health and the environment. The program assists agricultural producers, pesticide dealers and pest control firms with the proper disposal of unwanted agricultural and commercial pesticides and is available at no cost to participants. The program is funded through pesticide fees collected by VDACS' Office of Pesticide Services.

The 2006 Pesticide Disposal Program concluded in mid November. A total of 85,315 pounds of canceled, banned or unwanted agricultural and commercial pesticides were collected and subsequently destroyed. Since its inception, Virginia's Pesticide Disposal Program has collected and destroyed a total of 1,331,166 pounds of pesticides. For additional information visit the Virginia Department of Agriculture and Consumer Services at <http://www.vdacs.virginia.gov/pesticides/disposal.shtml>

Monitoring and Tracking - Statewide Water Quality Monitoring Program– DEQ, et. al

The overall goal of Virginia's nonpoint source pollution monitoring and tracking programs is to support the development, implementation and evaluation of the nonpoint source pollution management program. Monitoring and tracking activities measure the effectiveness of the management program to ensure that the beneficial uses of Virginia's waters are attained and maintained. Monitoring and tracking of water quality conditions and the implementation of activities and programs that can improve water quality and natural resources conditions is an important aspect of the VA NPS Pollution Management Program.

The Virginia Department of Environmental Quality coordinates the collection of information on active monitoring organizations across the state. In 2006 DEQ collected the following information on monitoring efforts:

- Total Number of monitoring groups in Virginia: 173
 - Citizen monitoring groups: 119
 - SWCD and local governments: 20
 - Colleges/Universities: 14
 - State and Federal Government agencies (non-DEQ): 10
 - Non-profit and other organizations: 10

The following projects were active in 2006 (through December 2006):

- **Letter of Agreement-** As part of the continued support of citizen monitoring efforts in Virginia, DEQ, the Virginia Department of Conservation and Recreation (DCR), the Alliance for the Chesapeake Bay (ACB), Virginia Citizens for Water Quality (VCWQ), the Virginia Save Our Streams Program of the Izaak Walton League of America (VASOS), and the Virginia Water Monitoring Council (VWMC) signed a renewal Letter of Agreement (LOA) in October 2006. This LOA serves as the framework for further improving the Citizen

Monitoring Program during the next four years. The LOA will help foster coordination and communication between the signatories.

- Coliscan TMDL Monitoring Project** – Started in 2005, the DEQ Coliscan TMDL Monitoring Project is continuing. DEQ is partnering with seven citizen monitoring groups, four SWCD's, and other organizations in monitoring within twelve TMDL *E. coli* impaired watersheds. The partnering groups receive training and supplies to monitoring *E. coli* Coliscan Easygel™. In return for this assistance, the volunteers share their data with DEQ. One major advantage in using Coliscan for TMDL monitoring is that it costs much less than traditional laboratory analysis. On average, DEQ is receiving data from ten sample sites on a monthly basis in each of the twelve watersheds. This allows DEQ to identify specific areas needing additional attention and helps gauge the effectiveness of BMP's in these watersheds. The Coliscan monitoring is showing additional benefits outside of the original project scope. One example is increased awareness by the local community on restoration efforts. Newspaper articles and people asking the volunteers and DEQ staff about the monitoring are helping to promote water quality education efforts.
- Citizen and Non-agency Monitoring Database** - In 2006, DEQ developed an online database to store citizen and non-agency water quality data. The citizen monitoring group Environmental Alliance for Senior Involvement (EASI) helped to develop this database. The database has similar features to the system developed by EASI for the Pennsylvania Department of Environmental Protection. This database allows citizen and non-agency groups to send data to DEQ via the Internet. In the past, DEQ received this data by mail or e-mail. The online database will allow DEQ staff to review and use data more quickly. Built-in QA/QC features, such as alerting users to incorrect sample coordinates, will further improve the quality of the data. The public is also able to view and download this data through the Internet. Users can access the system by going to the DEQ citizen monitoring website www.deq.virginia.gov/cmonitor or accessing the temporary server <http://vadeq.easi.org>.
- Citizen and Non-agency Benthic Macroinvertebrate Monitoring Protocols** - In 2006, DEQ developed guidelines for increasing the use of citizen and non-agency benthic macroinvertebrate data. In the past, DEQ staff could not accurately compare non-DEQ benthic macroinvertebrate results to those of DEQ biologists. This was due to differences among protocols and scoring metrics used by other groups and the agency. Instead of having to use DEQ methods, groups can now perform a validation study. The study evaluates how well a method used by another group compares to the methodology used by DEQ to assess benthic conditions. If there is a strong degree of agreement between the results of the two methods, DEQ will have sufficient confidence to use the non-agency data for 303(d) listing/delisting for benthic impairments. As of the winter of 2006-2007, Virginia Save Our Streams (VASOS) was in the process of finishing their validation studies. VASOS is one of the largest citizen monitoring groups in Virginia and contributes benthic data from over 270 sites each year. Pending the results of these validation studies, DEQ may be able to assess their data in the 2008 *305(b)/303(d) Integrated Water Quality Assessment Report*.

Monitoring and Tracking - Groundwater Protection Program - DEQ

The Department of Environmental Quality's Office of Groundwater Protection carried out the varied and successful activities supported by the Federal Clean Water Act Section 106

Groundwater Protection Grant. DEQ provided funding to Westmoreland, Lancaster, Northumberland, and Richmond Counties to initiate household hazardous waste disposal programs. There were 174 individuals who participated with over 9,000 pounds of hazardous materials collected and properly disposed of by Care Environmental, Inc.

DEQ also supported DCR's Karst Program through a small grant for Project Underground activities. Additionally, funds were earmarked for seven Groundwater Festivals. These festivals are a continuing tradition with DEQ and our cooperators and are very popular with teachers and students alike. They are an excellent venue to teach Virginians about groundwater resource protection and nonpoint source pollution impacts.

Finally DEQ submitted and received EPA approval on a voluntary statewide Wellhead Protection Program. The program targets groundwater based public water supplies and is considered an important component of a drinking water quality management framework. Funding has been earmarked in a competitive process for protection implementation projects. For more information on DEQ's Groundwater Protection Program or the State's Wellhead Protection Plan, visit the website: www.deq.virginia.gov/gwpsc

Resource Extraction – Department of Mines, Minerals and Energy (DMME)

The Virginia General Assembly determined that uncontrolled resource extraction activities in VA from mining of coal and non-fuel minerals and the extraction of gas and oil, could contribute pollutants to water resources. The Resource Extraction section of the 1999 Nonpoint Source Pollution Management Program specified a long-term goal of "improving surface and groundwater quality in watersheds... by reducing NPS pollution associated with abandoned and orphaned resource extraction sites." Virginia's General Assembly enacted reclamation laws in 1968 to minimize the adverse effects of mining on the environment. Legislation was enacted in 1978, which established a non-coal orphaned land reclamation program.

Division of Mined Land (DMLR) - Abandoned Mine Land Program

The Division of Mined Land Reclamation conducts an Abandoned Mine Land (AML) reclamation program to reclaim coal mine sites that were abandoned or left inadequately reclaimed before December 15, 1981. Funding for the reclamation comes primarily from the federal Office of Surface Mining (OSM) via reclamation fees paid by the coal industry, although DMLR is realizing success in obtaining non-federal funding for projects. DMLR maintains a statewide inventory of abandoned coal mine sites. The abandoned features are designated a priority ranking. Priority 3 features are environmental problems that do not directly impact human health and safety. Funding of Priority 3 sites is severely limited, thus partnerships to secure non-federal funding of Priority 3 sites will be increasingly important. Virginia's AML Inventory data show over 57,000 acres of abandoned mine lands in Virginia with an estimated cost to reclaim at \$438 million.

For 2006, DMLR reclaimed approximately 352 acres of abandoned coal mine lands. Not included in this estimate is the amount of abandoned mine land reclaimed through re-mining. Through this process, active coal operations re-mine abandoned sites and reclaim them to current

standards. DMLR does not have quantified data on abandoned land reclaimed through re-mining, but is very confident in stating that re-mining reclaims far more land, especially Priority 3 problems, than the federally funded AML reclamation program. During 2006, DMLR accomplished reclamation on 23 abandoned mine land projects. These projects eliminated extreme dangers and adverse human health and safety impacts. Through this reclamation, there is also an environmental benefit. Many of these projects are in watersheds containing streams that are on Virginia's 303d list of impaired streams. Reclamation of abandoned mine lands will help reduce the pollution loading in these streams.

DMLR successfully partnered with a number of stakeholders in 2006 to increase the amount of reclamation accomplished. Partners included the Army Corps of Engineers, Tennessee Valley Authority, The Nature Conservancy, the Natural Resources Conservation Service, local soil and water conservation districts, and local watershed groups. DMLR has several pending grant requests, including requests to the U. S. Fish and Wildlife Service. If funded, DMLR would accomplish reclamation on lower priority sites that would likely never be reclaimed via routine OSM grants. With reauthorization of AML fee collection no longer a concern, a major strategy for abandoned coal mine land reclamation is securing partnerships to fund reclamation of priority 3 sites. DMME commends the Virginia Department of Conservation and Recreation for its support of reclamation of environmental problems related to abandoned coal mine lands.

Division of Mineral Mining (DMM) - Orphaned Land Program

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. Legislation was enacted in 1978, which established a non-coal orphaned land reclamation program. 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. Since 1981, DMM has completed the reclamation of 609 acres of disturbed land at 93 abandoned mine sites in Virginia.

The total value of contracts awarded for orphaned mineral mine reclamation is \$3,149,977 through fiscal year 2006. There are approximately 3,000 abandoned mineral mine sites in Virginia and DMM has completed inventories on 1,937. The sites occur in all physiographic provinces in Virginia. In fiscal year 2006, 151 sites were inventoried with the support of Section 319 Funds. An educational program at the University of Virginia was also funded through 319. As part of their course work students inventoried orphaned land sites; gaining valuable field experience in assessing environmental and safety hazards. In fiscal year 2006, reclamation was completed on nine Orphaned Land Sites and one bond forfeiture site. The total acreage reclaimed was 11 acres for orphaned and bond forfeiture sites.

Division of Gas and Oil (DGO) - Orphaned Well Program

The Virginia Gas and Oil Act defines "Orphaned Well" as "...any well abandoned prior to July 1, 1950, or for which no records exist concerning its drilling, plugging or abandonment." The Act establishes The Orphaned Well Fund for the purpose of plugging and restoration of orphaned wells. Money for the fund comes from permit surcharges, which must accompany each application for a new permit. The Division of Gas and Oil administers the fund and,

through a competitive bid process, selects contractors to plug wells and reclaim sites when sufficient funds are available. Orphaned well sites are prioritized according to their condition and potential threat to public safety and the environment, and those that represent the greatest risk are given the highest priority for plugging and site restoration. DGO has inventoried 120 orphaned well sites. Seven orphaned well sites and five bond forfeiture sites have been reclaimed by the program encompassing 10 acres.

Forestry - Department of Forestry (DOF)

Virginia has approximately 16 million acres of forested land (68 per cent of the state). The primary pollutant associated with forestry operation is sediment resulting from soil loss during forest disturbing activities. In 1992 the Forestry Water Quality Task Force recommended that the Virginia General Assembly pass the Silvicultural Water Quality Act of 1993 (Article 12, §10.1-1181.1-7). This authorized the Department of Forestry (DOF) to act to prevent pollution of state waters from silvicultural activities.

Riparian Forest Buffer Restoration - In 1996, The Virginia Forest Riparian Buffer Initiative was established with the goal to protect all streams and shorelines by forested or riparian buffers. Chesapeake Bay Program partners agreed to develop an implementation plan for their respective Governor by June 30, 1998, including benchmarks on how these goals and recommendations would be met. The resulting plan committed Virginia to restoring 610 miles of riparian forest buffers by 2010. Virginia has restored three times as many miles of riparian buffers as its original goal and has done so well ahead of the 2010 target date. In December 2003, Governor Warner committed to restoring 3,200 miles of riparian forest buffers in the Bay by 2010. Virginia has now committed to a much greater effort on the order of 30,000 miles as part of the state's Tributary Strategies. Several ongoing efforts seek to identify and target those stream segments most in need of forest buffer restoration. In addition to efforts on the part of Virginia's natural resources agencies, studies by various universities using remote sensing and geographic information systems have enabled agencies to target small watersheds where restoration is most critical to achieving Virginia's water quality goals.

Silvicultural Water Quality Law - Since 1993, the efforts of the DOF and public/private organizations have trained over 4,500 loggers in Water Quality Techniques known as Best Management Practices or BMPs, inspected over 3,500 harvesting operations per year, and utilized the Silvicultural Water Quality Act (SWQA) to protect water quality. Education under the American Forest and Paper Association's Sustainable Forestry Initiative program has allowed the DOF to train over 5,042 individual loggers and foresters on harvest planning and BMPs since 1996. The purpose of these inspections is to make recommendations on the implementation of BMPs and to enforce the SWQA.

APPENDIX A

Virginia Agricultural BMP Cost-Share Program Funding Program Year 2007

Table A-1: Virginia Agricultural BMP Cost-Share Program Funding --Program Year 2007 SWCDs in the Chesapeake Bay Watershed					
	\$ 2,007.00	\$ 2,007.00	\$ 2,008.00		2007 BAY
SWCD	Bay Base	Bay 5 BMP Priority	Base & Priority SUM	Contracted	2007 Bay Total Program Allocation
APPOMATTOX RIVER	\$ 6,840.00	\$ 18,281.00	\$ 25,121.00	\$ 4,272.00	\$ 29,393.00
BLUE RIDGE	\$ 7,366.00	\$ 2,495.77	\$ 9,861.77	\$ 706.79	\$ 10,568.56
COLONIAL	\$ 148,502.07	\$ 108,957.00	\$ 257,459.07	\$ 172,609.00	\$ 430,068.07
CULPEPER	\$ 373,280.31	\$ 187,387.68	\$ 560,668.00	\$ 119,163.03	\$ 679,831.03
EASTERN SHORE	\$ 307,370.45	\$ 86,164.34	\$ 393,534.79	\$ 142,973.80	\$ 536,508.59
HANOVER-CAROLINE	\$ 144,453.21	\$ 119,177.14	\$ 263,630.36	\$ 159,296.81	\$ 422,927.17
HEADWATERS	\$ 389,796.00	\$ 203,503.12	\$ 593,299.12	\$ 65,439.00	\$ 658,738.12
HENRICOPOLIS	\$ 9,870.57	\$ 36,537.00	\$ 46,407.57	\$ 27,497.74	\$ 73,905.31
JAMES RIVER	\$ 51,762.51	\$ 29,913.37	\$ 81,675.88	\$ 32,172.16	\$ 113,848.04
JOHN MARSHALL	\$ 180,370.00	\$ 153,941.19	\$ 334,311.19	\$ 66,562.22	\$ 400,873.41
LORD FAIRFAX	\$ 252,948.00	\$ 355,730.00	\$ 608,678.00	\$ 54,397.00	\$ 663,075.00
LOUDOUN	\$ 170,887.88	\$ 181,408.99	\$ 352,296.87	\$ 49,953.46	\$ 402,250.34
MONACAN	\$ 44,878.66	\$ 34,179.36	\$ 79,058.02	\$ 44,558.68	\$ 123,616.70
MOUNTAIN	\$ 109,953.02	\$ 154,347.54	\$ 264,300.56	\$ 6,276.79	\$ 270,577.34
MOUNTAIN CASTLES	\$ 115,667.00	\$ 121,685.35	\$ 237,352.35	\$ 8,067.68	\$ 245,420.04
NATURAL BRIDGE	\$ 257,392.75	\$ 90,502.52	\$ 347,895.27	\$ 12,445.17	\$ 360,340.44
NORTHERN NECK	\$ 251,638.65	\$ 102,604.24	\$ 354,242.88	\$ 312,496.38	\$ 666,739.26
NORTHERN VA	\$ 7,560.00	\$ 2,923.27	\$ 10,483.27	\$ -	\$ 10,483.27
PEAKS OF OTTER	\$ 4,345.38	\$ 16,830.78	\$ 21,176.16	\$ 1,113.11	\$ 22,289.27
PEANUT	\$ 113,005.00	\$ 152,474.24	\$ 265,479.24	\$ 84,520.49	\$ 349,999.74
PETER FRANCISCO	\$ 35,903.79	\$ 65,283.56	\$ 101,187.35	\$ 16,536.75	\$ 117,724.10
PIEDMONT	\$ 93,629.35	\$ 75,710.00	\$ 169,339.35	\$ 67,369.39	\$ 236,708.73
PRINCE WILLIAM	\$ 14,295.95	\$ 25,031.96	\$ 39,327.91	\$ 5,282.00	\$ 44,609.91
ROBERT E. LEE	\$ 114,978.86	\$ 75,928.00	\$ 190,906.86	\$ 16,274.73	\$ 207,181.59
SHENANDOAH VALLEY	\$ 390,281.18	\$ 254,421.00	\$ 644,702.18	\$ 81,307.00	\$ 726,009.18
THOMAS JEFFERSON	\$ 200,000.00	\$ 169,139.06	\$ 369,139.06	\$ 49,286.92	\$ 418,425.98
THREE RIVERS	\$ 70,052.00	\$ 100,861.34	\$ 170,913.34	\$ 242,682.25	\$ 413,595.59
TIDEWATER	\$ 64,806.96	\$ 43,988.18	\$ 108,795.14	\$ 85,713.95	\$ 194,509.09
TRI-COUNTY/CITY	\$ 63,572.00	\$ 30,592.89	\$ 94,164.89	\$ 71,026.00	\$ 165,190.89
VIRGINIA DARE	\$ 4,592.00	\$ -	\$ 4,592.00	\$ -	\$ 4,592.00
Totals:	\$ 3,999,999.55	\$ 2,999,999.87	\$ 6,999,999.42	\$ 2,000,000.31	\$ 8,999,999.73

Table A2: Virginia Agricultural BMP Cost-Share Program Funding --Program Year 2007 SWCDs in Southern Rivers Watersheds					
SWCD	SR Base	SR 5 BMP Priority	Bay & Priority SUM	Contracted	2007 Total SR Program Allocation
APPOMATTOX RIVER	\$ 48,807.00	\$ 37,129.68	\$ 85,936.68	\$ 20,847.45	\$ 106,784.13
BIG SANDY	\$ 28,598.00	\$ 2,235.11	\$ 30,833.11	\$ -	\$ 30,833.11
BIG WALKER	\$ 106,495.00	\$ 65,202.22	\$ 171,697.22	\$ 10,989.00	\$ 182,686.22
BLUE RIDGE	\$ 193,522.00	\$ 73,394.42	\$ 266,916.42	\$ 17,138.39	\$ 284,054.81
CHOWAN BASIN	\$ 150,177.00	\$ 210,000.00	\$ 360,177.00	\$ 111,512.00	\$ 471,689.00
CLINCH VALLEY	\$ 127,867.00	\$ 57,218.00	\$ 185,085.00	\$ 3,877.00	\$ 188,962.00
DANIEL BOONE	\$ 115,189.00	\$ 35,210.42	\$ 150,399.42	\$ 3,134.47	\$ 153,533.89
EASTERN SHORE	\$ 184,183.00	\$ 55,744.33	\$ 239,927.33	\$ 71,000.00	\$ 310,927.33
EVERGREEN	\$ 94,007.00	\$ 34,456.01	\$ 128,463.01	\$ 3,191.55	\$ 131,654.56
HALIFAX	\$ 182,729.00	\$ 68,522.00	\$ 251,251.00	\$ 27,301.00	\$ 278,552.00
HOLSTON RIVER	\$ 173,377.00	\$ 54,204.47	\$ 227,581.47	\$ 13,411.26	\$ 240,992.73
JAMES RIVER	\$ 20,801.00	\$ 5,510.94	\$ 26,311.94	\$ 3,175.13	\$ 29,487.07
LAKE COUNTRY	\$ 111,277.00	\$ 77,906.69	\$ 189,183.69	\$ 28,683.72	\$ 217,867.41
LONESOME PINE	\$ 57,719.00	\$ 10,935.24	\$ 68,654.24	\$ -	\$ 68,654.24
MOUNTAIN CASTLES	\$ 15,232.00	\$ 9,518.45	\$ 24,750.45	\$ 2,877.91	\$ 27,628.36
NEW RIVER	\$ 137,435.00	\$ 85,877.51	\$ 223,312.51	\$ 14,216.00	\$ 237,528.51
PATRICK	\$ 83,208.00	\$ 21,065.92	\$ 104,273.92	\$ 4,135.98	\$ 108,409.91
PEAKS OF OTTER	\$ 132,707.00	\$ 57,276.00	\$ 189,983.00	\$ 4,943.72	\$ 194,926.72
PEANUT	\$ 80,000.00	\$ 49,047.19	\$ 129,047.19	\$ 37,779.00	\$ 166,826.19
PIEDMONT	\$ 33,680.00	\$ 10,568.19	\$ 44,248.19	\$ 2,537.05	\$ 46,785.24
PITTSYLVANIA	\$ 175,868.00	\$ 94,591.01	\$ 270,459.01	\$ 32,172.28	\$ 302,631.29
ROBERT E. LEE	\$ 103,899.00	\$ 47,870.55	\$ 151,769.55	\$ 12,358.59	\$ 164,128.14
SCOTT COUNTY	\$ 134,349.00	\$ 49,017.79	\$ 183,366.79	\$ 4,723.17	\$ 188,089.96
SKYLINE	\$ 252,908.00	\$ 114,225.00	\$ 367,133.00	\$ 13,000.00	\$ 380,133.00
SOUTHSIDE	\$ 91,525.00	\$ 79,716.00	\$ 171,241.00	\$ 24,336.59	\$ 195,577.59
TAZEWELL	\$ 88,067.00	\$ 35,312.89	\$ 123,379.89	\$ -	\$ 123,379.89
VIRGINIA DARE	\$ 76,374.00	\$ 58,244.06	\$ 134,618.06	\$ 32,658.83	\$ 167,276.88
Totals:	\$ 3,000,000.00	\$ 1,500,000.08	\$ 4,500,000.08	\$ 500,000.09	\$ 5,000,000.18