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October 1, 2006

TO: The Honorable Timothy M. Kaine
Governor of Virginia

The Honorable Members of the General Assembly

FROM: David K. Paylor
Director, Virginia Department of Environmental Quality

SUBJECT: REPORT ON WATERSHED PLANNING AND PERMITTING

The Department of Environmental Quality has finalized its annual report on watershed planning and permitting activities and the Watershed Planning and Permitting Coordination Task Force (established under §10.1-1194 of the Code of Virginia).

The report summarizes how the participating agencies worked to coordinate and promote watershed planning and permitting in the Commonwealth. It includes information on the Chesapeake Bay initiatives, the Water Quality Assessment Program, the Total Maximum Daily Load Program activities, and local watershed initiatives.

The full text of the report can be found on the Department's website at http://www.deq.virginia.gov/regulations/reports.html or by calling Kathy Frahm, Director of Policy, at 804-698-4376.

2006 ANNUAL REPORT ON WATERSHED PLANNING AND PERMITTING

SUBMITTED BY
DAVID K. PAYLOR, DIRECTOR
DEPARTMENT OF ENVIRONMENTAL QUALITY

October 2006

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EXECUTIVE SUMMARY

This report for the year 2006 is submitted to the Governor and the General Assembly in response to the requirement under §10.1-1193 of the Code of Virginia for an annual report on the Department's watershed planning and permitting activities, the Department's findings and recommendations and the findings and recommendations of the Watershed Planning and Permitting Coordination Task Force, the "Task Force" (established under §10.1-1194 of the Code of Virginia).

The Task Force is composed of the Directors, Commissioners or their designees from the following agencies:

- Department of Environmental Quality - [DEQ]
- Department of Conservation and Recreation - [DCR]
- Chesapeake Bay Local Assistance Department - [CBLAD] [1]
- Department of Mines, Minerals, and Energy - [DMME]
- Department of Forestry - [DOF]
- Department Agriculture and Consumer Services - [VDACS]

[1] NOTE: In 2004, CBLAD became a division of DCR.

The Virginia Department of Health [VDH], while not listed as a member of the Task Force in the Code, also participates.

While the Task Force did not meet last year, Task Force members were engaged in watershed planning and permitting activities throughout the year. This report provides information on Chesapeake Bay initiatives, the Water Quality Assessment Program, the Total Maximum Daily Load [TMDL] program activities, and local watershed initiatives.

1. INTRODUCTION

Sections 10.1-1193 through 1197 of the Code of Virginia mandate the Department of Environmental Quality, with the assistance of participating state agencies, to coordinate and promote watershed planning and permitting by state and local agencies and authorities.

The legislation also created the Watershed Planning and Permitting Coordination Task Force ("Task Force") composed of the Directors, Commissioners or their designees from the following agencies:

- Department of Environmental Quality - [DEQ]
- Department of Conservation and Recreation - [DCR]
- Chesapeake Bay Local Assistance Department - [CBLAD] [1]
- Department of Mines, Minerals, and Energy - [DMME]
- Department of Forestry - [DOF]
- Department Agriculture and Consumer Services - [VDACS]

[1] NOTE: In 2004, CBLAD became a division of DCR.

The Virginia Department of Health [VDH], while not listed as a member of the Task Force in the Code, also participates.

This report was prepared in accordance with the requirement to report annually on the watershed planning and permitting activities in Virginia (§ 10.1-1193 of the Code of Virginia). The reporting period was adjusted to end on June 30th, 2006 to more closely track the reporting date of October 1.

2. TASK FORCE ACTIVITIES

The Task Force did not meet during the period from October 1st, 2005 through June 30th, 2006. However, Task Force members were engaged in watershed planning and permitting activities throughout the year. This report provides information on Chesapeake Bay initiatives, the Water Quality Assessment Program, the Total Maximum Daily Load [TMDL] program activities, and local watershed initiatives.

A major development related to watershed planning and permitting during the reporting period was the passage of House Bill 1150 by the 2006 General Assembly. As a result of this bill, the Chesapeake Bay and Virginia Waters Clean-Up Plan and Oversight Act ("the Act") was added to the Code of Virginia in sections 62.1-44.117 and 62.1-44.118. The Secretary of Natural Resources is charged with the responsibility of developing a Virginia Impaired Waters Cleanup Plan.

The clean-up of Virginia's impaired waters, including the Chesapeake Bay, will require extensive coordination among state and local officials in the area of watershed planning and permitting, among other water quality management activities. Because watershed management has evolved over the years and efforts are now driven by the Virginia Impaired Waters Cleanup

Plan, a change in the structure and purpose of the Task Force may be justified. The Task Force might be better handled through a coordinating body of Virginia's executive agencies involved in implementing the Act under the leadership of the Secretary of Natural Resources. To better serve the purposes of the Act, this new structure will require legislative changes.

3. AGENCY WATERSHED PLANNING AND PERMITTING ACTIVITIES

3.1. CHESAPEAKE BAY INITIATIVES

WATERSHED GENERAL VPDES PERMIT FOR NUTRIENT DISCHARGES TO THE CHESAPEAKE BAY

Sections 62.1-44.19:12 through 62.1-44.19:19 of the Code of Virginia establish the Chesapeake Bay Watershed Nutrient Credit Exchange Program. DEQ is developing a watershed general permit for the control of discharges of Total Nitrogen and Total Phosphorus to the Bay watershed with an expected permit effective date of January 1, 2007. The draft regulation was developed with the assistance of a Technical Advisory Committee [TAC] and submitted to the State Water Control Board [SWCB] for authorization to publish a public notice on March 15th, 2006. Public comment for the proposed regulation ran from May 1st, 2006 – June 30th, 2006, and the regulation is expected to go before the SWCB for final approval in September 2006. The trading legislation, draft regulation, proceedings from the TAC meetings and supporting documentation have been published on the DEQ's website, http://www.deq.virginia.gov/vpdes/.

WATER QUALITY IMPROVEMENT FUND

The Virginia Water Quality Improvement Act [WQIA] of 1997 (Code Sections 10.1-2117 through 2134) was enacted by the Virginia General Assembly in response to the need to finance the nutrient reduction strategies being developed for the Chesapeake Bay and its tributaries. Pursuant to the WQIA, the Commonwealth established in the State treasury a special permanent, nonreverting fund, known as the "Virginia Water Quality Improvement Fund" [WQIF]. The WQIA directs DEQ to assist local governments and individuals in reducing point source nutrient loads to the Chesapeake Bay with technical and financial assistance made available through grants provided from the fund. Section 10.1-2129.B. of the WQIA 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 existing guidelines were last issued in September 2005. Due to substantive amendments to the WQIA made by the 2006 General Assembly and appropriations language in the recently approved State biennial budget (both of which became effective on July 1, 2006), the Guidelines must again now be revised.

The process for developing guidelines includes (a) use of an advisory committee composed of interested parties; (b) a sixty-day public comment period on draft guidelines; (c) written responses to all comments received; and (d) notice of the availability of draft guidelines and final guidelines to all who request such notice. An advisory group was assembled and met on June 16, 2006 to assist the Secretary in drafting revised WQIF grant guidelines. The amendments to the WQIA only affect the Point Source [PS] Grant Program; therefore, no changes are proposed

to the Nonpoint Source [NPS] Grant Program guidelines. The draft revised WQIF guidelines will be available for public review and comment through September 25, 2006.

Until all tributary strategies are developed and implemented, use of point source funds may be limited to financing the design and installation costs of nutrient reduction technologies at those publicly owned treatment works, designated in the tributary strategy plans. Likewise, the WQIA directs DCR to provide similar assistance to local governments, Soil and Water Conservation Districts, other groups, and individuals in efforts to control nonpoint source pollution.

A solicitation for point source [construction] projects to utilize recent appropriations closed on December 5, 2005 for the Potomac, Rappahannock, and Eastern Shore Basins; the solicitation for projects located in the York and James River Basins closed January 27, 2006. Sixty-seven applications were received from the two solicitations and WQIF Grant requests were in excess of $500 million.

3.2. WATER QUALITY ASSESSMENT PROGRAM UPDATE

During the water quality assessment process, monitoring results are compared to numerical and narrative water quality standards to determine if the water quality supports the designated uses associated with a particular waterbody, for example, if it is clean enough for swimming, fishing and other uses. If a waterbody fails to meet water quality standards, DEQ identifies the location, the cause (such as high bacteria counts) and the likely sources (such as failing septic systems or feedlot runoff). Starting in 2004, DEQ combined both the 305(b) Water Quality Assessment and the 303(d) Report on Impaired Waters into the Virginia Water Quality Assessment 305(b)/303(d) Integrated Report. Table 1 presents a summary of findings from this report.

Table 1. Summary of Results Based on the 2006 Water Quality Assessment

Degree of Use Support	Rivers (miles)	Lakes (acres)	Estuary (sq. mi.)
Supports Designated Uses (EPA Categories 1 and 2)	5,298 (10.5%)	3,271 (2.8%)	170 (7.0%)
Insufficient Data (EPA Category 3)	36,075 (71.6%)	3,579 (3.1%)	44 (1.8%)
Impaired (EPA Categories 4 and 5)	8,984 (17.8%)	109,208 (76.5%)	2,216 (91.3%)
Total Size	50,357 (100%)	116,058 (100%)	2,428 (100%)

The guidance (methodology) for the 2006 305(b)/303(d) Water Quality Assessment was released for public comment on August 22, 2005. The public comment period closed on September 23, 2005. Changes to the guidance were made in response to comments received. The draft 2006 report was released on July 10, 2006 and was open for public comment until August 11, 2006. It includes an assessment of some of the new Chesapeake Bay-related water quality standards for dissolved oxygen as well as Submerged Aquatic Life Vegetation acreage. Additionally, in conjunction with VDH, an assessment of bacteria related water quality at certain public beaches was assessed. The 2006 assessment also includes a major update on water quality trends, makes greater use of citizen monitoring data and is accompanied by improved web-based tools for citizens to use for accessing and easily understanding the results.

For most waters identified as impaired, DEQ, in cooperation with many other state and federal agencies, must develop and implement cleanup plans to restore the health of these listed streams. The restoration plans are known as "total maximum daily loads", or TMDLs. This name is based on the total amount of pollutant that can enter a stream without exceeding water quality standards. The subsequent section provides additional information on Virginia's TMDL program.

3.3. TMDL PROGRAM ACTIVITIES

The goal of the TMDL program is to restore water quality in Virginia's impaired streams, rivers, lakes and estuaries. Activities under the TMDL program include TMDL development and TMDL implementation, including TMDL implementation plan [IP] development. TMDL development is governed by a 1999 Federal Court Consent Decree [CD] as well as by the Water Quality Monitoring, Information and Restoration Act [WQMIRA]. WQMIRA also governs TMDL implementation in Virginia.

The recent passage of House Bill 1150 in the 2006 General Assembly, resulting in the addition of the Chesapeake Bay and Virginia Waters Clean-Up Plan and Oversight Act to the Code of Virginia in sections 62.1-44.117 and 62.1-44.118, places additional emphasis on the restoration of impaired waters, including the Chesapeake Bay. TMDL development and implementation will be major components of the state's clean-up plan and will require extensive coordination among state and local officials and various programs. The TMDL program to date has gathered a wealth of experience that will provide valuable direction in the development of Virginia's clean-up plan.

TMDL DEVELOPMENT

Waters covered under the CD require the development of between 600 and 650 TMDLs. If water quality improves enough to support the removal of the impaired water from the 303(d) impaired waters list ("de-listing"), TMDL development is no longer needed. During the period covered by this report, DEQ, in cooperation with other state and local agencies as well as watershed stakeholders, finalized reports containing approximately 200 TMDLs to meet a reporting deadline to the U.S. Environmental Protection Agency [EPA] of May 1, 2006. As part of Virginia's 2006 water quality assessment, several waters were also found to qualify for de-listing. TMDL development and de-listing information is provided in the tables in this chapter. Specific information on the status of each TMDL development project can be found at http://www.deq.virginia.gov/tmdl/develop.html. Draft and final reports are available for viewing or downloading at http://gisweb.deq.virginia.gov/tmdlapp/tmdl_report_search.cfm.

TMDLs for waters not covered by the CD are developed within a period of no more than 12 years from the date of their first identification as impaired. Where possible, DEQ groups waters in close geographic proximity together for TMDL development, regardless of the initial listing date (see Table 4). This allows a more comprehensive approach to managing water quality in the affected watershed. Tables 2 to 4 show the number of impaired waters and TMDL development progress to date.

Table 2. TMDL Development Progress for Consent Decree Waters through June 30, 2006

Basin	Freshwater CD segments with completed TMDLs	Delisted Freshwater CD Segments [1,2]	Freshwater segments scheduled for 2008	Freshwater CD segments scheduled for 2010
Bay/Coastal	3	2	5	14
Chowan	13	6	17	11
James	20	17	40	18
New	10	1	0	3
Potomac, Shenandoah	61	4	14	20
Rappahannock	10	3	14	3
Roanoke	34	7	11	2
Tennessee, Big Sandy	18	4	9	8
York	8	2	5	9
Total	177	46	115	88

[1] includes 5 partial delists

[2] does not include non-consent decree delists

Table 3. TMDL Development Progress for Consent Decree Shellfish Waters through June 30, 2006

Basin[1]	Shellfish CD Segments with completed TMDLs	Shellfish CD Segments – Delists and Closures [2]	Shellfish CD Segments Scheduled for 2008/2010
Bay/Coastal	69	45	42
James	1	2	8
Potomac, Shenandoah	17	10	22
Rappahannock	18	4	17
York	2	9	16
Total	107	70	105

1 Only those basins with shellfish waters shown
2 Includes shellfish waters delisted prior to 2006 that are no longer part of the consent decree schedule

Table 4. TMDL Development Progress for Non-Consent Decree Waters through June 30, 2006

Basin	Non-CD Segments with Completed TMDLs	Non-CD Segments with TMDLs scheduled to be completed by May 2008
Bay/Coastal	0	0
Chowan	2	0
James	10	26
New	3	0
Potomac/Shenandoah	1	7
Rappahannock	2	12
Roanoke	7	20
Tennessee/Big Sandy	1	3
York	7	0
Total	33	68

Table 5 shows the various pollutants for which TMDLs have been established, as well as the number of delisted segments. In most cases, delisting occurs when water quality standards for a given pollutant are no longer violated and the segment no longer requires a TMDL. This means that water quality conditions have improved enough so that an impairment no longer exists and the water is removed from the list of impaired waters requiring TMDLs. DEQ's water quality assessment guidance, referenced in section 3.2, contains additional details on listing and delisting.

Table 5. TMDL Activity by Pollutant through June 30, 2006

Pollutant (impaired use)	Number of TMDLs
Bacteria (recreation)	168
Bacteria (shellfish)	107
Sediment (aquatic life)	47
Phosphorus (aquatic life)	7
Organic Solids (aquatic life)	6
Total Dissolved Solids (aquatic life)	6
PCBs (fish consumption)	5
Nitrate (drinking water)	2
Alkalinity (aquatic life)	1
Ammonia (aquatic life)	1
Chloride (aquatic life)	1
Chlorine (aquatic life)	1
Copper (aquatic life)	1
Dissolved Oxygen (aquatic life)	1
Manganese (aquatic life)	1
Raw Sewage (aquatic life)	1
Zinc (aquatic life)	1
Total	**357**

To date, no delistings have occurred that are directly attributable to TMDL implementation activities, but progress is being made in several areas, as the following section describes.

TMDL IMPLEMENTATION

TMDL implementation has also been progressing. DEQ is working with partner agencies on an update of the TMDL Progress Report, which will include data on water quality improvements achieved to date. The report is due to be released by the end of 2006. General information on TMDL implementation as well as selected highlights are provided below.

TMDL implementation plans are typically developed to address the unregulated nonpoint reductions identified in the TMDL reports. TMDL IPs identify, among other things, the specific corrective measures needed to achieve pollutant reductions, their cost, and a schedule for implementation. As of June 30, 2006, fourteen IPs covering multiple impairments have been completed and are in various stages of implementation. Table 6 shows the distribution of IPs in Virginia's major river basins. Copies of draft and final IPs are made available to the public at http://www.deq.virginia.gov/tmdl/implement.html.

Table 6. TMDL Implementation Plans by River Basin (through June 30, 2006)

Basin	IPs Completed	# of segments in completed IPs	IPs Under Contract/in Planning	# of segments in pending IPs
Chowan	1	9	0	0
James	2	2	0	0
New	1	1	2	3
Potomac, Shenandoah	5	12	1	2
Rappahannock	1	4	1	3
Roanoke	2	7	1	5
Tennessee, Big Sandy	2	5	3	5
Shellfish	0	0	1	3
Total	14	40	9	21

Some highlights on TMDL implementation activities between October 2005 and June 2006 include:

DEQ continues to work with stakeholders to promote TMDL implementation.

- Following the development of a bacteria TMDL for the Lynnhaven River, DEQ worked with the City of Virginia Beach on establishing a No Discharge Zone (NDZ). NDZs are areas where all sewage discharges from boats, treated or untreated, are banned. NDZs are appropriate for water bodies requiring special protection. In addition, Virginia Beach is exploring innovative approaches to solving water quality problems identified in the TMDL process, including anti-microbial mats inside storm water pipes and solar aerators in six storm water management impoundments.

- On February 24, 2006, DEQ's Valley Region held the first TMDL Implementation Workshop to focus on water quality and conservation issues facing the Shenandoah Valley. The workshop was designed to bring Valley stakeholders together to learn from each other's experiences in tackling water quality issues in their own communities and working on implementing TMDLs. A total of 64 people were in attendance, with broad representation from state and local agencies, local government, non-profit organizations and community watershed groups. A summary of the discussions can be found at http://www.deq.state.va.us/tmdl/ipproj.html.

DMME continues to assist DEQ and DCR with TMDL IP development for coalfield streams in southwestern Virginia. More significantly, the Department continues to directly implement stream improvement projects related to abandoned mine lands [AML].

- In Black Creek, Wise County, DMME is completing a riparian zone restoration project for the lower segment of the stream. Black Creek is an acid mine drainage impaired stream that DMME has been working successfully to restore for several years. Two wetland enhancement projects have already been completed. Virginia Tech's Department of Forestry helped develop the riparian zone restoration plan and on-the-ground implementation is anticipated this fall.

- In the Powell River, Lee County, DMME has chemically improved several miles of stream through completion of the Ely Creek acid mine drainage wetland; a cooperative project between DMME and the U. S. Army Corps of Engineers. The second phase of the project has been initiated and will also consist of wetland construction in Puckett Creek. Ely Creek and Puckett Creek are tributaries to the impaired segment of the Powell River.

- The Bull Creek Stream Improvement Project, that successfully reclaimed abandoned and forfeited mine lands in Buchanan County, is now in the post project monitoring phase. Additional removal of existing abandoned mine land features will occur concurrent with TMDL and TMDL Implementation Plan development.

- Although DMME's AML program has eliminated over 13,000 acres of AML since the program began, and continues to successfully reclaim AML features, estimates of remaining AML exceed 50,000 acres. Many of southwestern Virginia's impaired waterways will not be restored until a significant portion of these AML features are reclaimed. Alternative sources of funding and approaches to stream restoration performed through reclamation of abandoned mines need to be implemented. Examples include WQIA grant funded projects and remining projects.

- WQIA funding was successfully solicited by DMME, as well as local Soil and Water Conservation District partners, to reclaim several AML sites currently contributing pollution loads to impaired streams. The projects include sites in Knox Creek & Levisa Fork in Buchanan County, Guest River in Wise County, and the Powell River in Lee County.

- DMME continues to encourage the remining of AML in southwestern Virginia's coal counties. As coal companies actively mine, opportunities to eliminate abandoned mine features proximate to their operations exist. Remining not only maximizes the utilization of the state's natural resources, but the removal and proper reclamation of AML by coal companies can greatly reduce pollution loading. DMME continues to evaluate the effectiveness of remining, and in particular, the clean-up and reprocessing of abandoned mine waste piles.

DCR continues its work throughout eight Virginia TMDL implementation projects funded with EPA 319 funds. Project areas are located in the following localities:

TMDL Implementation Project	**Start**	**River Basin**	**Locality**
Blackwater River	2001	Roanoke	Franklin
Three Creeks	2001	Holston River	Washington
North River	2001	Shenandoah	Rockingham
Catoctin Creek	2004	Potomac	Loudoun
Holman's Creek	2005	Shenandoah	Rockingham/ Shenandoah
Willis River	2005	James	Cumberland/ Buckingham
Lower Blackwater River	2006	Roanoke	Franklin
Blacks Run and Cooks Creek	2006	Shenandoah	Rockingham/ Harrisonburg

The following tables show the progress made in installing or contracting to install Best Management Practices [BMPs] in each of the project areas during the most recent six months period for which data were available.

Blackwater River project: Contracted and Completed BMPs July – December 2005

Category	BMP	Contracted	Completed	Extent of practice	Livestock excluded
Agricultural	Loafing lot management systems	1	--	N/A	80
	Stream bank stabilization	6	2	12,870 ft	670

Three Creeks project: Contracted and Completed BMPs January – June 2006

Category	BMP	Contracted	Completed	Extent of practice	Livestock excluded
Residential	Septic system pumpouts	--	15	N/A	N/A
	Septic system repair	--	1	N/A	N/A
	Septic system installation/replacement	--	1	N/A	N/A
Agricultural	Grazing land protection	4	2	11,280 ft	360 beef
	Animal waste management system	--	2	N/A	N/A
	Loafing lot management system	1	--	--	300 beef
	Permanent vegetative cover on cropland	--	3	46 ac	N/A
	Small grain cover crop	--	15	627 ac	N/A

North River project: Contracted and Completed BMPs January – June 2006

Category	BMP	Contracted	Completed	Extent of practice	Livestock excluded
Residential	Septic system pumpout	2	5	N/A	N/A
	Septic system repair	--	2	N/A	N/A
	Septic system replacement	--	1	N/A	N/A
Agricultural	Permanent vegetative cover on cropland	--	2	24 ac	N/A
	Protective cover for specialty cropland	--	3	59 ac	N/A
	Small grain cover crop	--	53	1,663 ac	N/A
	Grazing land protection	5	--	11,075 ft	165
	Loafing lot management system	4	--	N/A	720*
	Stream protection	1	--	1,000 ft	45

**Number indicates livestock associated with practice; however these livestock are not necessarily excluded from the stream*

Catoctin Creek project: Contracted and Completed BMPs January – June 2006

Category	BMP	Contracted	Completed	Extent of practice	Livestock excluded
Residential	Septic system installation/replacement	3	2	N/A	N/A
	Septic system repair	1	1	N/A	N/A
	Alternative waste treatment system	2	1	N/A	N/A
Agricultural	Grazing land system	2	2	2,835 ft	214
	Stream protection practice	3	3	3,947 ft	40

Holman's Creek project: Contracted and Completed BMPs January – June 2006

Category	BMP	Contracted	Completed	Extent of practice	Livestock excluded
Residential	Septic system replacement	--	2	N/A	N/A
	Septic system pumpout	28	16	N/A	N/A
	Septic system repair	2	3	N/A	N/A
	Alternative waste treatment system	1	--	N/A	N/A
Agricultural	Grazing land protection	--	1	275 ft	100

Willis River project: Contracted and Completed BMPs January – June 2006

Category	BMP	Contracted	Completed	Extent of practice	Livestock excluded
Agricultural	Grazing land protection	12	3	38,755 ft	900 beef, 5 horses

Lower Blackwater River project: Contracted and Completed BMPs January – June 2006

Category	BMP	Contracted	Completed	Extent of practice	Livestock Excluded
Residential	Septic tank pumpout	--	1	N/A	N/A
Agricultural	Grazing land protection	3	2	25,765 ft	40 beef cattle, 300 dairy
	Animal waste system	--	2	--	--

Cooks Creek/Blacks Creek project: Contracted and Completed BMPs January – June 2006

Category	BMP	Contracted	Completed	Extent of practice	Livestock Excluded
Residential	Alternative waste treatment system	1	--	N/A	N/A
Agricultural	Grazing land protection	--	1	11 ac	N/A
	Animal waste system	--	4	131 ac	N/A

3.4. LOCAL WATERSHED INITIATIVES

YORK RIVER WATERSHED

Earlier in the year, the York River and Small Coastal Basin Roundtable organized a panel discussion focused on nutrient trading issues including the topics of nutrient trading between or within the basins, permit enforcement, selection of BMP's, and trading between point and non-point nutrient sources. After this meeting of ~25 individuals, the York River and Small Coastal Basin Roundtable lost momentum and is currently attempting to refocus and revitalize the effort with the assistance of DCR's York/Rappahannock Watershed Field office. It is hoped that the group, made up of varied stakeholders across the watershed, will continue with educational, outreach and on-the-ground projects that will directly benefit water quality and quantity concerns and aid in progress towards meeting the tributary strategy implementation goals and promotion of watershed wide planning and management of resources. There will be an effort to expand watershed planning to encourage greater participation by more localities and improve collaboration amongst groups already involved in more localized watershed activities.

Watershed implementation efforts are underway in the York watershed. Along the Pamunkey River, in an area containing significant erosion, a project including wetland and riparian buffer restoration, alternate watering sources and fencing of cattle from the stream is aiding an impaired stream segment and providing a unique partnership with Virginia Department of Corrections facilities in the watershed. One project related to the implementation of the Mechumps Watershed Management Plan included the riparian restoration at Poor Farm Park in Hanover County where severe erosion, over fertilization and pesticide use along an intermittent stream had created some water quality concerns. Randolph–Macon College installed eight rain gardens and will produce educational components such as a handbook for contractors on Low Impact Development [LID] and urban bayscaping as part of that plan. The Dragon Run Special Area Management Plan implementation efforts are well underway to include the second Dragon Run Day where citizens, government officials, and teachers collected data, investigated unique habitats and related land use and ecology of the watershed.

RAPPAHANNOCK RIVER WATERSHED

The Rappahannock River Basin Commission Nonpoint Source Workgroup has initiated and proposed to DCR a standard electronic portal to access local and state applications related to any land-use change to allow for more informed decisions about the environmental impacts of proposed projects. With rapid land-use changes in the Rappahannock, it is believed such a service will greatly benefit all citizens in the watershed and eventually the entire state.
Other activities in the Rappahannock Watershed over the last year include the Stafford County and Friends of the Rappahannock effort to implement the Rappahannock Watershed Plan. The comprehensive approach set forth in the recently awarded WQIA grant specify riparian buffer restorations, permeable pavers associated with the county administration offices, streambank stabilization projects, illicit discharge tracking, a signage program and ordinance on Resource Protection Areas required under the Chesapeake Bay Preservation Act, new Livable Neighborhood Water Stewardship and Adopt-a-Stream team development, and creation of public service cable and radio spots that engage homeowners in stream protection.

POTOMAC RIVER WATERSHED

The Potomac Watershed Roundtable [PWR] has continued its support of the Tributary Strategy for the Potomac Watershed with commitments to educating stakeholders on the benefits and direct linkage LID has in meeting Tributary Strategy goals. This commitment is reflected in the development of the DVD, "Reining in the Storm" and its accompanying paper guide that was given wide distribution throughout the watershed. PWR representatives also have been active in serving on the Northern Virginia Regional Commission LID Working Group Committee charged with development of an LID Supplemental to the Northern Virginia BMP Stormwater Handbook. Additionally, the PWR has sponsored the development of a series of LID conferences to be managed by the Warrenton Office of DCR. These one-day conferences will provide a forum for local jurisdictional representatives of the watershed to exchange practical hands-on information as to the process to establish LIDs in ordinances and the effectiveness of selected practices.

Other activities in the watershed include development of two sub-watershed Management Plans for Little Hunting Creek and Popes Head Creek. Two additional Master Plans (Cub Run and Difficult Run) will be completed in the latter part of 2006 and three other Master Plans (Cameron Run, Pimmit Run and a cluster of 4 small watersheds) are in various developmental stages. In an attempt to meet the Tributary Strategy goal of nutrient management plan implementation on 103,573 acres of mixed open space in the Potomac River watershed by 2010, urban and agricultural nutrient management plans have been prepared totaling 15,602 acres. Loudoun County has completed an intensive study to coordinate existing watershed efforts and define a shared vision for watershed activities entitled "Strategic Watershed Management Solutions Project." "Friends" groups continue to take on the responsibility for stream clean-ups through the Adopt-A-Stream Program. Districts, the Audubon Society and one unique teenager, Shannon Groves of Ashburn, who compiled scientific benthic data for DEQ's 305(b) report, are implementing the Virginia Save Our Streams [VASOS] protocol very successfully in the watershed.

ROANOKE RIVER WATERSHED

The Upper Roanoke River Roundtable [URRR] helped organize the Fall Roanoke River Clean-up and Celebration held on October 1st. An estimated 24 tons of trash were pulled from streams and banks by over 350 volunteers, who later enjoyed food, live music and educational displays at Wasena Park. The URRR is also working in collaboration with Roanoke County on a WQIA project in Garst Mill Park, including water quality monitoring, stream bank stabilization and a public education component. The roundtable remains very active in supporting the VASOS program through citizen water quality monitoring. Due to the bacteria impairment and significant contribution of pet waste in the Roanoke River, the URRR teamed up with state and local governments, educational institutions and citizen groups throughout the Roanoke Valley and developed educational materials for citizens about this issue. Included in the effort was the installation of pet waste receptacles along several popular greenways. The URRR is also working with Roanoke County and the Roanoke Greenways Commission to design and install a rain garden site along the Hanging Rock Greenway trail, a historic civil war site in Roanoke County. The group received the Water For Life award from the Southeastern Rural Community Assistance Program during National Drinking Water Week and continues their coalition building efforts through their relationship with Roanoke River Basin Bi-State Commission.

NEW RIVER WATERSHED

The New River Watershed Roundtable [NRWR] has been very active establishing a board with broad stakeholder representation and just recently received its 501(c)3 status as a not-for-profit group. Watershed projects that are underway include a basin wide river cleanup in conjunction with North Carolina which will be conducted on September 23, 2006 and a river symposium which will take place in the spring of 2007 to develop the "State of the River" report. They maintain a website with important links for partner organizations and resources for teachers. Also, NRWR works closely with VASOS and the GLOBE program to monitor the quality of the New River and its tributaries. GLOBE stands for "Global Learning and Observations to Benefit the Environment", a worldwide organization, providing hands on, primary and secondary school based education and science programs. Finally, NRWR prepared a detailed scope of work for the coming year, which has been distributed to all roundtable members.

BIG SANDY RIVER WATERSHED

The Big Sandy River Basin Coalition, Inc. expanded its board to include 24 board members comprised of eight members from each state: Virginia, Kentucky, and West Virginia. Each state will operate through its own roundtable with all efforts contributing to the success of the Coalition. The Coalition was awarded a 2006 WQIA grant to fund sediment reduction projects in the Virginia portion of the Big Sandy River watershed. The Coalition solidified its affiliation with the Ohio River Sanitation Commission [ORSANCO] which is a regulatory entity governing the Ohio River watershed. ORSANCO is planning to bring together the Governors of each of the three states for a visionary and planning meeting in 2008. More projects are expected as Knox Creek and Paw Paw Creek will have TMDL implementation plans completed this year.

UPPER TENNESSEE RIVER WATERSHED

Much progress has been made to improve the water quality in the Upper Tennessee River watershed. The Upper Tennessee River Roundtable [UTRR] continued completing goals outlined in their EPA grant, transporting 14,200 cubic yards of harmful sawdust away from karst areas to abandoned mine lands for soil enrichment, rain garden and agricultural BMP installation and hosting three LID workshops. To battle illegal dumping, the UTRR hosted its second annual Litter Summit and has taken full advantage of the Assign-A-Highway program by assisting seven localities with program implementation. UTRR hosted six rain barrel workshops, reaching 123 citizens and teachers who constructed 143 rain barrels. The Guest River Restoration WQIA project addresses sedimentation and abandoned mine land problems in Wise County. TMDL implementation continues in the Three Creeks watershed through Section 319 funding for agriculture and residential non-point source pollution. TMDL implementation plans for Beaver and Little Creek will be completed this year.

SHENANDOAH RIVER WATERSHED

The Shenandoah Valley Pure Water Forum continues to improve collaboration and communication among watershed groups in the Valley, exploring opportunities for sustainable funding through both private and public partnerships. The Forum has worked with local and state representatives to increase local awareness of the effects of the fish kills that have occurred on the South and North Fork Shenandoah River in 2005 and 2006. They designed and hosted the first meeting event for the Virginia Watersheds Alliance at the Environment Virginia Conference including representatives from each of the major roundtables in the Commonwealth. In addition,

the Pure Water Forum has selected Page County as a pilot locality for the development of a mapping tool intended to provide a basis for watershed planning efforts, connecting land use and water quality. The Forum completed a billboard project in the spring promoting riparian buffers in the Shenandoah watershed and is planning a 10th anniversary meeting for the fall.

Many other watershed planning activities have taken place over the last year in the Shenandoah watershed. The Page County Water Quality Advisory Committee began education, subwatershed planning and ordinances workgroups focusing on water resources lessons for teachers, subwatershed plan development, and county ordinance revisions, respectively. A Shenandoah Valley Water Resources Strategic Plan is being designed to address water supply issues in the Valley in accordance with DEQ minimum regulatory requirements for water supply sustainability. The draft policy papers identify existing water resources policies and programs/projects, relevant regional trends, and potential strategies or actions to be implemented in the watershed and it is projected that the final draft of the plan will be completed by October.

DCR has formed partnerships with the Shenandoah Pure Water Forum and James Madison University to complete a rapid watershed assessment of the South Fork Shenandoah River, which will then be used to develop innovative implementation strategies to reduce NPS loading in the basin. The assessment will focus primarily on agricultural and water resources in the watershed. The Pure Water Forum will use GIS to collect information on land use, water quality, population demographics and natural and agricultural resource values in the watershed. Data will be compiled from stakeholder input during TMDL Implementation working group meetings, Tributary Strategies work groups, and related workshops and conferences to identify recurring issues expressed by watershed residents and ideas on how to address these issues.

JAMES RIVER WATERSHED

The Upper James Roundtable [UJR] has been working on organizational development for a new Resource Conservation & Development Council over the past year, pursuing 501(c)-3 status for the organization and establishing a website that will highlight biomonitoring stations and data. Currently the UJR is planning a workshop on conservation easements, which will be targeted towards landowners, real estate agents, and others interested in learning more about the topic. The UJR is also planning on sponsoring a training session for volunteer monitors using the VASOS method in August.

The Middle James Roundtable [MJR] has held several steering committee meetings and an informational meeting to discuss non-point source issues, potential projects and their current effort to diversify stakeholder involvement in MJR activities. The MJR has been successful in recruiting a more diverse group of stakeholders including elected officials, local government staff, planning district commissions, environmental organizations, business and industry, citizens and state agencies to discuss regional non-point source issues and watershed planning. Current projects for the Roundtable include a newly designed website, a storm drain labeling project and a restaurant coaster with five tips to help the James. The Roundtable formed an education and outreach and a land-use working group to address water quality and planning. Local government and community watershed based continue in the Middle James Watershed. Prince George County has initiated developing a watershed management plan for the county. The James River Association recently completed a study on local codes and ordinances for counties and cities

within the James watershed. The Peter Francisco Soil and Water Conservation District began a project to implement the Willis River Water Quality Implementation Plan, promoting and designing BMP's in the Willis River watershed.

The Lower James River Roundtable, hosted by the Hampton Roads Planning District Commission, continues to work with both the Hampton Roads Stormwater and Chesapeake Bay Committees on developing a regional approach to implement the Lower James portion of the Chesapeake Bay Nutrient and Sediment Reduction Tributary Strategy for the James River, Lynnhaven and Poquoson Coastal Basins. The local government driven group is focusing on meeting BMP implementation targets and implementation plan development. Some notable watershed based projects of the Lower James watershed over the last year include the development of a green infrastructure and conservation corridor for Hampton Roads and the completion of site design work for the 40 acre Eco Park in Portsmouth. The Eco Park project, an effort of the Elizabeth River Project [ERP], includes low impact development techniques, buffer protection along the Elizabeth River, and recreational and educational opportunities for the public. Through a partnership between ERP and others, a plan for Earl Industries, a shipyard in Portsmouth, allows for the preservation and enhancement of almost a mile of forested buffer and wetlands while also including a planned development of condominiums and commercial space featuring state-of-the-art stormwater treatments. Educational signage will explain the environmental benefits of the specially engineered soils, drainage, native trees and shrubs of the 80 acre mixed-use waterfront low impact development.

EASTERN SHORE WATERSHEDS (BAY/SEASIDE)

The Eastern Shore Watersheds Network continues to implement the Chesapeake Bay Nutrient and Sediment Reduction Tributary Strategy for Virginia's Eastern Shore. Through grants from several funding sources and cost-share funding from DCR to the Eastern Shore Soil and Water Conservation District, the Network has focused on increased implementation of agricultural BMPs and citizen education. Education and outreach has been accomplished through the quarterly publication *Shore Outdoors*, which reaches a readership of over 12,000 or 65% of area households. Each issue is developed in partnership with various Network members and has a specific focus. They recently developed a website to provide network members and citizens a means for dialogue/dissemination of information on environmental issues on the Eastern Shore. Another major project supported by the Network included the development of the Cherrystone Creek Watershed Management Plan, a multi-year project that included water quality data collection, watershed modeling and the assessment of water quality impacts based on various development scenarios within an 8,500 acre watershed.

ALBEMARLE SOUND/CHOWAN RIVER WATERSHEDS

Stakeholders in the Albemarle and Chowan watersheds have consolidated many of their efforts and formed the new Albemarle-Chowan Watershed Roundtable [ACWR]. In the past year, two informational meetings and a steering committee meeting have taken place to engage various interested groups in the watershed. The newly formed group is focusing on building regional recognition and is in the process of developing a strategic work plan for the remainder of 2006 through 2007. Currently the ACWR focus is on education and developing projects that will increase their visibility. In addition, the ACWR participants continue to work with the Albemarle-Pamlico National Estuary Program on water quality projects in both the Virginia and

North Carolina portions of the Chowan watershed. This includes two school projects within Virginia, in addition to a shoreline survey project conducted by the Virginia Institute of Marine Science.

Other notable watershed efforts include those initiated by the Albemarle-Pamlico National Estuary Program and a variety of partners. In Chesapeake and Virginia Beach, a plan for conservation corridors to keep open space in the watershed is in place. An outdoor classroom and recreational path at J.E.J. Middle School in Disputanta and a buffer restoration and outdoor classroom project at Red Hill Elementary in Virginia Beach add to the watershed's improvement through long-term educational benefits and the protection of ecological functions along the waterways.