



# Virginia Department of Transportation

## Stormwater Management Program (Pollutant Discharge Elimination System)

General Permit Registration Statement for Stormwater Discharges from Small  
Municipal Separate Storm Sewer Systems

### Annual Report

July 31, 2007

Serving the

**Bristol Urban Area - VAR040046**  
**Kingsport Urban Area - VAR040047**  
**Charlottesville Urban Area - VAR040033**  
**Fredericksburg Urban Area - VAR040061**  
**Hampton Roads Urban Area - VAR040044**  
**Danville Urban Area - VAR040003**  
**Lynchburg Urban Area - VAR040002**  
**Northern Virginia Urban Area - VAR040062**  
**Richmond Urban Area - VAR040014**  
**Blacksburg Urban Area - VAR040016**  
**Roanoke Urban Area - VAR040017**  
**Harrisonburg Urban Area - VAR040031**  
**Winchester Urban Area - VAR040032**

Virginia Department of Transportation  
1401 East Broad Street  
Richmond, Virginia 23219

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## **Executive Summary**

The Small Municipal Separate Storm Sewer Systems (MS4s) within the urban areas maintained by the Virginia Department of Transportation were approved for coverage under the Virginia Stormwater Management Program (VSMP) General Permit for Discharges of Stormwater from Small MS4s on April 11, 2003. Coverage under the General Permit obligates the Virginia Department of Transportation (VDOT) to develop and implement a Stormwater Management Program designed to reduce the discharge of pollutants from the MS4s to the maximum extent practicable (MEP), to protect water quality, and to satisfy the appropriate water quality requirements of the Clean Water Act and the State Water Control Law. This Annual Report provides an update on status of the implementation of VDOT's Stormwater Management Program during the final reporting cycle of the Permit – August 2006 through July 2007. In addition, this Report serves to communicate any proposed changes to the Management Program and summarizes activities planned for the upcoming permit application.

VDOT's SWM Program is presented here in the form of the six minimum control measures required by the Virginia General Permit. This program has been developed with a consistent statewide implementation strategy since VDOT operates regulated MS4s (or components of regulated MS4s) within the public right-of-ways in each of the nine VDOT Construction Districts.

### **Regulated Small MS4 Operator (Permittee):**

The Virginia Department of Transportation  
1401 East Broad Street  
Richmond, VA 23219

### **Area of Coverage – Regulated Small MS4:**

In general, VDOT maintains various drainage facilities within, primary and secondary road, limited access, and interstate public right-of-ways; excluding those public right-of-ways within certain incorporated cities, towns, and other specifically designated jurisdictions that operate and maintain their own MS4s.

### **Anniversary of Coverage:**

VDOT received approval for coverage within each of the 13 Urbanized Areas of Virginia, with the approval dates ranging from April through July of 2003. For ease of reporting and program management, the reporting cycle for each of the 13 permits has been defined as August through July, with an anticipated reporting date of July for the first, second, and fourth anniversaries of the permit coverage.

### **Responsible VDOT Personnel:**

The Virginia Department of Transportation, under the leadership of the Commonwealth Transportation Commissioner, is organized into several divisions, each serving under a designated program Chief. Several areas of the Department were reorganized during the

first year of the Permit in an effort to better manage the delivery of transportation services to the Commonwealth. The most significant change places the nine VDOT Construction Districts under the direct authority of the Commonwealth Transportation Commissioner. In general, this and other changes reflect a decentralized implementation strategy: overall program policy and guidance is provided by the appropriate Program Chiefs, while the day to day operation and implementation of VDOT's road construction and maintenance program fall under the authority of the District Administrators.

The implementation of VDOT's Stormwater Management Program starts with the development of specific policies and operational guidance associated with each of the six minimum control measures. The Central Office continues to support the Districts with program guidance, coordination, and assessment as necessary. However, each VDOT District Administrator oversees the implementation of the day-to-day operational activities related to permit compliance within each of the designated Urban Area(s).

This Annual Report provides the status of each minimum control measure and identifies the responsible parties for continuing development and/or implementation.

**District Administrators:**

**James S. Givens**

District Administrator

Bristol District

- Kingsport Urban Area  
Permit VAR040047
- Bristol Urban Area  
Permit VAR040046

**Morteza Salehi**

District Administrator

Culpeper District

- Charlottesville Urban Area  
Permit VAR040033

**Richard L. Caywood, P.E.**

District Administrator

Salem District

- Blacksburg Urban Area  
Permit VAR040016
- Roanoke Urban Area  
Permit VAR040017

**Garrett W. Moore, P.E.**

District Administrator

Staunton District

- Harrisonburg Urban Area  
Permit VAR040031
- Winchester Urban Area  
Permit VAR040032

**Thomas A. Hawthorne, P.E.**  
District Administrator  
Richmond District

- Richmond Urban Area  
Permit VAR040014

**Dennis W. Heuer, P.E.**

District Administrator  
Hampton Roads District

- Hampton Roads Urban Area  
Permit VAR040044

**Dennis C. Morrison**

District Administrator  
Northern Virginia District

- Northern Virginia Urban Area  
Permit VAR040062

**Dale H. Grigg Jr., P.E.**

District Administrator (Acting)  
Lynchburg District

- Lynchburg Urban Area  
Permit VAR040002
- Danville Urban Area  
Permit VAR040003

**David E. Ogle**

District Administrator  
Fredericksburg District

- Fredericksburg Urban Area  
Permit VAR040061

**Certification:**

“I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment for knowing violations.”

Print Name: David S. Ekern, P.E. Title: Commonwealth Transportation Commissioner

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

## **VDOT Stormwater Management Program**

The VDOT Stormwater management program has been developed in the context of the six minimum control measures outlined in the Virginia General Permit.

The six minimum control measures are:

- (1) Public Education and Outreach On Stormwater Impacts;
- (2) Public Involvement/Participation;
- (3) Illicit Discharge Detection and Elimination;
- (4) Construction Site Stormwater Runoff Control;
- (5) Post Construction Stormwater Management In New and Redevelopment; and
- (6) Pollution Prevention/Good Housekeeping for Municipal Operations.

A description and justification of Best Management Practices (BMPs) for each minimum control measure, as well as a schedule of measurable goals for implementation, was provided in the General Permit Registration Statement, dated March 8, 2003. This Annual Report identifies the progress towards achieving the measurable goals, as well as any changes and/or additions identified for each BMP.

**BMP 1.1 – Watershed Signs**

Target Date	BMP Activity	Resp. VDOT Division	Status
3/03 – 2/08	Install watershed signs in partnership with the Department of Conservation and Recreation (DCR) and Local governments. Track and report sign placement for each District.	Traffic Engineering, (TE)	<p>VDOT's Traffic Engineering Division is currently budgeting \$75,000 for signage needs through the Integrated Directional Program (IDSP). Signing for DCR/DGIF, currently \$150,000 is available.</p> <p>DCR has recently submitted a priority list which indicates 87 watershed sign locations.</p> <p>The priority list has been sent to Virginia Logos (VL) with the watershed sign specifications.</p> <p>A cost estimate has been requested on the fabrication and installation of the watershed signs from VL. When the estimate is approved the installation of the signs will begin.</p> <p>Routine maintenance of the DCR signs will be provided by VDOT. DCR will provide funds for repair and replacement.</p> <p>This activity is complete.</p>

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**BMP 1.2 – Educational Video**

Target Date	BMP Activity	Resp. VDOT Division	Status
3/03 – 2/08  ➤ 4/03 ➤ 5/07 ➤ 6/07	Develop educational video on stormwater impacts and stormwater BMPs in partnership with DCR.  Establish Video Workgroup and develop work plan Final Frame-Board script. Begin/contract video production.	CO/Dist., Public Affairs	A video script has been developed and approved by a small inter-divisional workgroup. Shooting will begin immediately. Final video will be complete in December 2007.
3/05 – 2/08	Distribute Educational Video to local governments and Citizens Groups statewide for further distribution. Track number of videos distributed.	CO/Dist., Public Affairs	Video will be shot and posted to the VDOT website for availability and distribution by December 2007.  Developed a Spill Prevention Control and Countermeasure training video to facilitate training. The video has been shown to 700 VDOT employees statewide.



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**BMP 1.3 – Public Service Announcements**

Target Date	BMP Activity	Resp. VDOT Division	Status
3/03 – 2/08	Develop 4-year work plan in collaboration with the other Urban Area MS4 operators for a series of mass media PSAs.	CO/Dist. Public Affairs	A work plan will be developed after two key staff positions are filled in the Office of Public Affairs. Parts of the script and footage for the educational video (BMP 1.2) possibly can be used for the PSA. To be available December 2007.  VDOT publishes the Pickup Express, a bi-annual newsletter that is kept up-to-date with information and tips about VDOT's Adopt-a-Highway Program and for cleaning up the environment.
➤ 6/03	Establish VDOT Public Service Announcement (PSA) Work Group to include local government representatives.		
➤ 9/03	Document formal commitments from all parties re: roles and responsibilities related to work plan.		
➤ 2/02	Final 4-year work plan to guide the development of PSAs.		
3/04 – 2/08	Develop and Distribute PSAs in accordance with work plan. Track number of PSAs developed, aired and approximate exposure	CO/Dist. Public Affairs	A work plan will be developed after two key staff positions are filled in the Office of Public Affairs. Parts of the script and footage for the educational video (BMP 1.2) possibly can be used for the PSA. To be available December 2007.

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**BMP 2.1: VDOT Public Involvement and Participation Program**

Target Date	BMP Activity	Resp. VDOT Division	Status
3/03 – 2/08	Advertise and conduct project specific Citizen Information Meetings, Location Public Hearings, Design Public Hearings, Combined Location & Design Public Hearings for all qualified VDOT projects.	CO/Dist. Location & Design (L&D)	VDOT's Location and Design Division's Public Involvement Program has recorded approximately 45 Public Meetings statewide during this reporting cycle: 6 Citizen Information Meetings, 14 Design Public Hearings, 4 Location Public Hearings, 2 Combined Location & Design Public Hearings, and 19 Willingness.

**BMP 2.2: VDOT Participation in Local Government Watershed Planning**

Target Date	BMP Activity	Resp. VDOT Division	Status
3/03 – 2/08  ➤ 6/03  ➤ 10/03	Participate in locally adopted (DCR approved) regional (watershed-wide) stormwater planning and implementation.  Establish formal contact with local governments within Urban Area.  Identify all local DCR approved SWM Programs, distribute local program requirements to District.	CO/Dist. L&D, Environmental (Env)	VDOT staff works with local governments to review design plans for projects intended to be accepted into the State road system, for VDOT Land Use Permit applications, and other projects that impact VDOT systems. This interaction has served to establish a formal point of contact between VDOT, the local governments, and the consultant and development community.  VDOT has made a request to be a member of the TDML statewide implementation committee.
3/03 – 2/08  ➤ 6/03  ➤ 10/03	Participate in local government Technical Advisory groups and/or workshops to develop local watershed plans.  Establish formal contact with local governments within Urban Area to promote VDOT interest in participation.  Identify all local DCR approved Regional Programs, distribute Regional Program requirements to District.	CO/Dist. L&D, Env	A VDOT representative is the current Chairman of the Stream Alliance.  VDOT staff participated on the statewide Coastal Zone Management Committee, Stream Alliance, Non-point Source Advisory Committee, Chesapeake Bay 2000 Committee, Riparian Buffer Committee, State Watershed Planning Committee, Green Infrastructure Committee, Stream Assessment Technical Advisory Committee, and Virginia Water Protection Permit Technical Advisory Committee.

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**BMP 2.3: VDOT Participation in Watershed Organizations**

Target Date	BMP Activity	Resp. VDOT Division	Status
3/03 – 2/08  ➤ 6/03	Participation in watershed organizations and local government technical advisory committees  Establish formal contact with local watershed organizations within Urban Area to promote VDOT’s willingness to participate in watershed planning and outreach. Document participation.	CO/Dist. L&D, Env	VDOT staff participated in numerous watershed meetings and roundtables, TDML workshops, and low impact development meetings statewide.  District and Central Office staff will continue to seek out such opportunities. These activities are tracked by the individual offices and reported annually to the Stormwater Technical Team.

**BMP 2.4: VDOT Adopt-a-Highway Program**

Target Date	BMP Activity	Resp. VDOT Division	Status
3/03 – 2/08	Continue to implement the Adopt-A-Highway Program and seek opportunities to partner with other pollution prevention programs.	CO/Dist, Asset Management (AM), Public Affairs	<p>The Adopt-a-Highway Program (AAH) continues to be delivered. VDOT has taken in a new program developed in southwest Virginia called the “Assign-A-Highway Program” which utilizes court directed probationer’s to pick-up litter on primary routes every two weeks. This program is now available to all localities within Virginia.</p> <p>Approximately 6,000 groups or individuals are currently active in the Adopt-a-Highway Program. Each group has committed to pick up litter on a 2-mile section of highway 4 times each year. A total of approximately 12,000 miles is currently adopted with 4 litter pick ups each year.</p> <p>VDOT’s internet Homepage includes links to Adopt-a-Stream and numerous other related pollution prevention programs in Virginia. The Pickup Express is a bi-annual newsletter to keep up-to-date with information and tips about VDOT’s Adopt-a-Highway Program and cleaning up the environment.</p> <p>VDOT is currently actively participating in the Rivanna Regional Storm Water Education Partnership, a regional effort in the Charlottesville area consisting of the MS4 Permit holders in the Charlottesville Urban Area.</p>

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**BMP 2.5: Storm Drain Stenciling**

Target Date	BMP Activity	Resp. VDOT Division	Status
7/05	Enable communities, groups, individuals, businesses, or local governments to place pollution prevention markers/stenciling on storm drains accessible by VDOT pedestrian walkways.	CO/Dist AM	VDOT will authorize any individual, group, local government, etc. to place storm drain pollution prevention markers/stenciling on VDOT storm drain inlet structures accessible by pedestrian walkways upon completion of a Land Use Permit application. VDOT will waive all fees for permits issued for storm drain marker placement/stenciling. An enhancement is being made to Asset Management Division's Land Use Permit System to accommodate for coding (SD – Storm drain stenciling) of permitted storm drain stenciling activities. VDOT is currently revising its design standards for storm drain structures such that the foundry castings will convey a pollution prevention message, i.e. Dump No Waste Drains To Waterways.
3/04 – 2/08	Track all storm drain stenciling within Asset Management data system.	CO/Dist., AM	55 land use permits were issued for storm drain stenciling to date.

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**BMP 3.1: Storm Sewer System Map**

Target Date	BMP Activity	Resp. VDOT Division	Status
3/03 – 2/06	<p>Compile all existing mapping resources within the Urban Area, to include data tracked by local jurisdictions. Correlate all data within VDOT's AM systems and identify any gaps in existing mapping.</p> <p>Final recommendations for mapping of VDOT MS4 systems and outfalls.</p>	CO/Dist, AM	<p>A workgroup consisting of representatives from VDOT's Asset Management Division's Roadside Management Section, Systems Development Section, and Location and Design Division's Hydraulics Section evaluated the mapping resources and identified the Asset Management System (AMS) as the most appropriate mapping and inventory system for this BMP activity.</p> <p>The workgroup identified the proposed Work Accomplishments and Inventory Module (WAM) of the AMS to meet the specific requirements of this BMP. The Work Accomplishments Module that stores information on quantities of work performed by field personnel was implemented first. Development has been completed on the Inventory Module and the roll out of this program and technology necessary for data collection will be accomplished in the near future.</p> <p>VDOT will evaluate other successful DOT programs to include guidance documents recommended by EPA at <a href="http://www.cwp.org/IDDE/IDDE.htm">http://www.cwp.org/IDDE/IDDE.htm</a> to assist with this BMP.</p>

**BMP 3.1: Storm Sewer System Map**  
**(Continued)**

Target Date	BMP Activity	Resp. VDOT Division	Status
7/05 – 1/06	Develop inventory/condition assessment protocol with which to locate and map all remaining components (outfalls and storm sewer system) of the regulated MS4 (as defined by appropriate asset groups) not captured previously. Develop a corresponding training program.	CO/Dist, AM	<p>VDOT's Asset Management Methodology is supported by information technology tools referred to as the Asset Management System (AMS). AMS integrates systematic and economic decision tools both in place and under development that will enable VDOT to more efficiently and effectively manage roadway assets. The framework of AMS includes an Inventory Module, Random Condition Assessment Module, Planning Module, Work Accomplishments Module, and a Decision Tree Builder. It also relies on inventory and condition data from the Pavement Management System and Bridge Management Systems.</p> <p>VDOT's Random Condition Assessment (RCA) surveys collect data on a sample basis for an additional eight traffic and drainage assets (signs, pavement markings, guardrail, guardrail terminals, pipes, paved and unpaved ditches, and unpaved shoulders). The RCA survey identifies the type and extent of damage or deterioration to these assets that can be related to the need for maintenance actions. The RCA data collection is currently in it's forth collection cycle and assessment protocol has been established and continues to be refined as technology improves.</p>



**BMP 3.1: Storm Sewer System Map**  
**(Continued)**

Target Date	BMP Activity	Resp. VDOT Division	Status
1/06 – 4/08	Complete inventory within each Urban Area in accordance with mapping and data collection protocol. Document progress in terms of % of total required mapping.	CO/Dist AM	<p>Based on the information provided by the RCA an estimate of the cost of collection of data and mapping to comply with the EPA's Phase I guidance only targeted major outfalls (diameter of 36 inches or greater). The estimate was based on the data collection of major outfalls on 18,964 directional miles within the 13 MS4 permitted areas. Since the uncertainty has developed as to what outlet points of water concentration should be collected to comply with Phase I &amp; II, budgeting and field collection has been delayed. When agreement is reached on the outlet points to be collected a revised budget for data collection will be developed. Although the collection of this data will not be a part of the RCA program the estimated budget will be based on statistical modeling of RCA data. An implementation plan for data collection will be developed based on manpower, budget and technology constraints.</p> <p>Some regulated MS-4 Outfalls have been collected as part of the RCA program but no reporting has been formatted to overlay the RCA collection with the MS4 permitted area.</p>

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**BMP 3.2: Illicit Discharge Detection Program**

Target Date	BMP Activity	Resp. VDOT Division	Status
12/05-12/06	Develop Asset Management Illicit Discharge Inspection protocol, to include prioritization (based on pipe or conveyance size, land use served, likelihood of illicit discharges, record of any previous illicit discharges, etc.), frequency of inspections, record keeping, reporting of discharges, and enforcement.	CO/Dist, AM and Env.	<p>VDOT has established an Emergency Operation Center that manages a real-time incident response system that includes any hazardous material spills on VDOT right-of-way that has the potential to impact the motoring public.</p> <p>VDOT conducted an evaluation of it's responsibilities for identifying potential illicit discharges limited to those discharges that originate within the right-of-way.</p> <p>VDOT identified the need for an illicit discharge visual inspection protocol as an element of routine, emergency, and requested maintenance activities on drainage related assets.</p> <p>VDOT identified the need for an illicit discharge reporting protocol for visual inspections that identify potentially hazardous materials.</p>
12/05 – 12/06	Develop and implement training for Illicit Discharge Inspection and Detection procedures to correlate with Hazardous Materials Spill Response protocol.	CO/Dist, AM, Env, VDOT Learning Center	<p>Training on the inspection protocol described above was included as part of the program rollout from September 2004 through March 2005. This training was coordinated with the VDOT Asset Management Best Practices Manual Chapter 8, Hazardous Materials. The Chapter provides the requirements and resources for VDOT maintenance personnel to respond to incidents of hazardous materials spills.</p>
12/06 – 4/08	Implement Illicit Discharge Inspection protocol to document inspections, detect and address non-stormwater discharges, including illegal dumping, of 100% of the regulated outfalls within the MS-4.	Dist AM	<p>Illicit Discharge inspections that identify potentially hazardous conditions may be linked to VDOT's Emergency Operations Center.</p> <p>This system, the AMS, the Department of Emergency Management, and other local/state government systems will be evaluated for the most appropriate BMP to adequately address illicit discharges identified within the regulated MS-4 by April 2008.</p>

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**BMP 3.3: Illicit Discharge Prohibition**

Target Date	BMP Activity	Resp. VDOT Division	Status
3/03 – 2/04	Develop and coordinate protocols for illicit discharge notification and documentation. Coordinate with existing Hazardous Material Spill Response protocol.	CO/Dist. AM and Env	<p>VDOT currently implements a hazardous material spill protocol for spills and/or accidents within the public right-of-way that includes a combination of public safety (routing of traffic) and the notification of the appropriate Public Safety officials and DEQ, in accordance with permit conditions.</p> <p>For those illicit discharges that originate outside of the right-of-way, VDOT will develop and implement a protocol for identifying the location at which the discharge enters the right-of-way, and contacting the appropriate VDOT, local government and DEQ officials.</p>
3/03 – 2/04	Amend Land Use Permit Special Conditions (MP-63) to explicitly prohibit all illicit discharges as defined by the Department of Environmental Quality (DEQ).	CO AM	<p>Illicit discharges are currently prohibited by 24VAC30-150-20, General rules and regulations of the Commonwealth Transportation Board. Excerpt below:</p> <p>L. No person, firm or corporation may cause water from any source to flow upon the right of way of any highway within the system of state highways, nor shall any person, firm, or corporation cause any increase of the water, at present, lawfully on the right of way of any highway or concentrate the flow of water upon the right of way of any highway in the system of state highways without the written consent of the resident engineer for the Department.</p> <p>R. Any person, firm, or corporation violating any of the preceding sections shall be civilly liable to the Commonwealth for any and all expenses or damages, or both, incurred by the Department and shall be guilty of a misdemeanor and, upon conviction, shall be punished as provided for in <a href="#">§33.1-19</a> of the Code of Virginia.</p> <p>VDOT specifications Section 106 and 107 currently prohibit Illicit discharges.</p>

**BMP 3.3: Illicit Discharge Prohibition**  
**(Continued)**

Target Date	BMP Activity	Resp. VDOT Division	Status
			<p>The Land Use Permit Manual (LUPM 24 VAC 30-150) sets forth the policies and procedures that VDOT uses to issue permits on behalf of the Commonwealth Transportation Board (CTB) to perform work on state-owned property under its jurisdiction along the system of state highways. Typically, this work includes activities such as installation of utilities, cable television services, fiber optic lines, or installation of driveway pipe. It is intended to protect the safety of VDOT and non-VDOT workers, motorists, and pedestrians, minimize the likelihood of property damage, as well as to preserve the integrity of the state highway system.</p>
3/04 – 2/08	Develop and implement training for Illicit Discharge Inspection and Detection procedures.	CO/Dist., AM, Env, VDOT Learning Center	<p>Construction Division Memorandum provides guidance primarily to Construction Division Staff Statewide and they are issued by the Scheduling and Contracts Division Administrator.          CD-2000-18: <i>Oil Storage on Construction Sites</i> requires the contractor to comply with Title 40 Code of Federal Regulations Part 112 which requires spill prevention control and countermeasures for stored oil, including petroleum and non-petroleum oil products.</p>
3/04 – 2/08	Implement protocols for illicit discharge notification and documentation, and Hazardous Material Spill Response. Track number of spills reported	Dist. AM and Env.	<p>Environmental staff developed a Hazardous Material response protocol for responding to incidents occurring within VDOT right of way. Worked with DEQ and DEM to incorporate roles and responsibilities into DEQ's Pollution response Program Manual.          FY04 - 103 Maintenance/ROW Spill Responses          FY05 - 210 Maintenance/ROW Spill Responses          FY06 - 102 Maintenance/ROW Spill Responses</p>

**BMP 4.1: Implementation of VDOT's Erosion and Sediment Control Annual Program**

Target Date	BMP Activity	Resp. VDOT Division	Status
3/03 – 2/08	Implement VDOT's Comprehensive Erosion and Sediment Control and Stormwater Management Program Specifications as approved annually (Qualifying state program approved by VA Dept. of Conservation and Recreation) on all regulated land disturbing activities.	CO/Dist. L&D, Env, Construction (Con), AM	VDOT submits its erosion and sediment control standards and specifications to DCR on a yearly basis for approval. The approved specifications are implemented on all regulated land disturbing activities.
3/03 – 2/08	Track total number of land disturbing activities and total disturbed acreage.	CO/Dist. L&D, Con,	Based on data provided VDOT's Project Tracking System, as of January 2007, VDOT had approximately 421 active regulated individual maintenance and construction activities, with approximately 2,143 disturbed acres.

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**BMP 4.2: Program Evaluation, Assessment, and Reporting Procedures**

Target Date	BMP Activity	Resp. VDOT Division	Status
3/03 – 2/04	Develop and refine a consistent process to evaluate and report on compliance with approved project specific ESC plan, permit conditions, and the VDOT ESC Annual Program.	CO Env.	<p>Established inspection procedure to meet <i>the Virginia Administrative Code</i> 4VAC50-30-60 B pertaining to inspections. An evaluation of VDOT’s Construction Inspector Manual was conducted to make sure that it complied with the Code requirements. It was determined that the Construction Inspector Manual guidance complies with the Code requirements for frequency of inspections and personnel certification requirements.</p> <p>The Department continues to present inspections on complaint basis and tracks them.</p> <p>An Environmental Compliance Reporting System was developed to document compliance with Environmental Commitments. This system allows VDOT Environmental Monitors and Residency Specialists to report project compliance review data to a central database. This database provides a real time assessment of the compliance on any project being inspected, and will provide the basis for annual assessment reports.</p> <p>The Environmental Compliance Reporting (ECR) System refinements are on-going. The data populated the VDOT dashboard for Environmental Compliance. The ECR results are reported on-line at: <a href="http://dashboard.virginiadot.org/">http://dashboard.virginiadot.org/</a> for statewide and district wide compliance percentages on a rolling 12 month basis.</p> <p>ECR reviews document that the Project Inspectors are performing inspections and completing the C107 form to document their inspections.</p>

**BMP 4.2: Program Evaluation, Assessment, and Reporting Procedures**  
**(Continued)**

Target Date	BMP Activity	Resp. VDOT Division	Status
3/04 – 2/08	Implement the ECR system on all regulated VDOT Projects. Track overall program and project compliance and develop an annual report.	CO/Dist., Env, L&D, Con., AM	FY 03 – 2,130 Environmental Compliance Reports were prepared resulting in 55% compliant, 38% deficient, and 8% non-compliant FY 04 - 2,228 Environmental Compliance Reports were prepared resulting in 56% compliant, 39% deficient, and 7% non-compliant FY 05 - 2,342 Environmental Compliance Reports were prepared resulting in 63% compliant, 31% deficient, and 6% non-compliant FY 06 – 3,230 Environmental Compliance Reports were prepared resulting in 69% compliant, 24% deficient, 6% non-compliant and 1% Environmental Excellence FY 07 to date – 1,952 Environmental Compliance Reports were prepared resulting in 83.5% compliant, 14% deficient, 2% non-compliant, and 0.5% Environmental Excellence

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**BMP 4.3: New Product Evaluation Protocol**

Target Date	BMP Activity	Resp. VDOT Division	Status
3/03 – 6/05	Develop New Product Evaluation Protocol	CO/Dist. L&D, AM, Env, Matls	<p>An investigation of VDOT’s new product evaluation protocol for erosion and sediment control practices was conducted. The results of our investigation led to the conclusion that the most appropriate process for accepting new products and technologies is to contract with research or academic institutions, such as VTRC, UVA, or Virginia Tech, for support in the evaluation process. The highly technical process required to objectively evaluate the effectiveness of new products, materials, and processes that are reaching the market place easily justifies such an arrangement. The objectivity and accuracy of the evaluation process must be beyond reproach since the acceptance of a product by VDOT provides an economic benefit to the companies that manufacture and sell these products.</p> <p>VDOT has discontinued its relationship with TXDOT/TTI’s approved products list.</p> <p>VDOT’s Materials Division has developed an approved products list for use.</p>
6/04 – 2/08	Implement New Product Evaluation Protocol. Generate new product list for distribution to VDOT Districts, Residencies, VDOT contractors, and DCR.	CO/Dist. L&D, AM, Env, Matls	<p>Notification letters from Materials and Environmental Divisions provides guidance to Districts.</p> <p>38 new erosion and sediment control products have been approved. Materials Division will continue to coordinate a New Product Evaluation Protocol and contract process for approval.</p> <p>14 new products are under review.</p>



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**BMP 4.4: VDOT ESCCC Program**

Target Date	BMP Activity	Resp. VDOT Division	Status
3/03 – 10/03	Develop VDOT's Erosion and Sediment Control Contractor Certification Program.	CO AM, VDOT Learning Center	<p>The development of VDOT's Erosion and Sediment Control Certification (ESCCC) Program was completed and will be continuously reviewed and adjusted as necessary. VDOT's ESCCC Course is being delivered via a partnership with the Virginia Transportation Construction Alliance (VTCA). Certification through the ESCCC Program is required of individuals conducting land-disturbing activity on VDOT owned or operated property. VDOT training and certification programs are currently being brought under one administrative umbrella led by the VDOT Learning Center (LC). VDOT's LC is currently developing a statewide contract for a Learning Management System (LMS). The LMS will provide immediate access to both individuals and program managers to access on-line cataloged training programs, training resources, and to track all personnel by group, course types, etc. VDOT developed targeted training for Environmental Commitments for in-stream maintenance activities and requires maintenance forces to attend this rather than the ESCCC which is focused on contractor activities. The In-stream maintenance activities training goes into VDOT University as a e-learning module.</p>
3/03 – 2/08	Continue to implement VDOT's ESCCC Program. Report numbers of contractors, maintenance forces, and land-use permittees trained for each reporting cycle.	CO AM, VDOT Learning Center	<p>1608 individuals have successfully completed the ESCCC courses. 2,261 maintenance personnel have successfully completed in-stream maintenance courses.</p>

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**BMP 5.1: Implementation of VDOT's SWM Annual Program**

Target Date	BMP Activity	Resp. VDOT Division	Status
3/03 – 2/08	Implement VDOT's Comprehensive Stormwater Management Annual Program (Qualifying state program approved by VA Dept. of Conservation and Recreation) on all regulated land disturbing activities. Compile and report BMP data as required by 9VAC25-750-50, Part II.B.5. (Appendix)	CO/Dist. L&D, Env, Con, AM	<p>The VDOT Erosion and Sediment Control (ESC) Annual Program, approved by the Department of Conservation and Recreation satisfies this minimum control measure as a qualifying State Program by requiring Construction Site Stormwater Pollution Prevention Plans on all construction and maintenance activities disturbing more than 10,000 sq.ft. (2,500 sq.ft. in Tidewater, VA). VDOT submits its erosion and sediment control standards and specifications to DCR on a yearly basis for approval. The approved specifications are implemented on all regulated land disturbing activities.</p> <p>VDOT identified a need for a Project Tracking and Notification System that will provide up to date tabulation of active projects, VSMPs, and total disturbed acres.</p> <p>Construction Division Memorandum provides guidance primarily to Construction Division Staff Statewide and they are issued by the Scheduling and Contracts Division Administrator.</p> <p>CD-98-13: <i>Scheduling Conference for Plan of Operations</i> outlines a required conference between VDOT representatives and the Contractor. The Contractor indicates the intended method of construction, resources on job, milestone events, and identifies major elements that must be accomplished to complete the project.</p> <p>CD-97-3: <i>No Plan and Minimum Plan Projects</i> outlines field narratives and the erosion control plan. It requires that all minimum plan projects show erosion control measures and all no plan projects include a plan for erosion control measures in a construction narrative and sketch..</p> <p>CD-94-5: <i>Department of Conservation and Recreation Siltation and Erosion Control Measures</i> outlines that DCR inspectors are reviewing VDOT projects to ensure our contractors comply with appropriate erosion and sediment control measures. DCR written reports will be provided to Inspector and Resident Administrator, and Responsible in Charge Project Engineer. It further outlines a conflict resolution process for issues, if necessary.</p>

**BMP 5.1: Implementation of VDOT's SWM Annual Program**  
**(Continued)**

Target Date	BMP Activity	Resp. VDOT Division	Status
			VDOT has many manuals that provide guidance for Construction Site Runoff controls. The following list identifies some of them: <ul style="list-style-type: none"> <li>• VDOT Road and Bridge Standards Volume I &amp; II</li> <li>• VDOT Road and Bridge Specifications</li> <li>• VDOT Instruction and Informational Memoranda</li> <li>• VDOT Road Design Manual</li> <li>• VDOT Survey Manual</li> <li>• VDOT Drainage Manual</li> </ul>

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**BMP 5.2: Update VDOT SWM Manual and Guidance**

Target Date	BMP Activity	Resp. VDOT Division	Status
3/03 – 12/05	Evaluate, update and publish VDOT’s SWM Design Manual in collaboration with the Virginia Transportation Research Council (VTRC).	CO L&D, AM, VTRC	This activity is Complete. The VTRC issued a final report in December 2004 entitled <i>VDOT Manual of Practice For Stormwater Management</i> . This document along with appropriate instructions was distributed to all Districts in December 2005.
1/05 – 12/05	Evaluate and update VDOT Location and Design Informational and Instructional Memoranda for Stormwater Management (IIM-195).	CO L&D, AM, VTRC	<p>This activity is pending. An evaluation of VDOT’s SWM Informational and Instructional Memorandum 195 is being conducted. Proposed revisions and updates to IIM-195 will be submitted to DCR for review and approval within VDOT’s 2007 ESC &amp; SWM Annual Program submittal.</p> <p>All of the below guidance is on VDOT internet and intranet sites: Location and Design Division uses Information and Instructional Memoranda (IIM-LD-) to provide instructions relating to policies and procedures and they are issued by the Location and Design Division Administrator. Listed below are the primary ones relating to BMP 4B:</p> <ul style="list-style-type: none"> <li>• IIM-LD-11.24 – <i>Erosion and Sediment Control Program</i></li> <li>• IIM-LD-47.10 – <i>Demolition Of Existing Pavement – Obscuring old road</i></li> <li>• IIM-LD-71.8 – <i>Minor Structure Excavation</i></li> <li>• IIM-LD-73.4 – <i>Rip Rap</i></li> <li>• IIM-LD-94.1 – <i>Removal of Bridge fill</i></li> <li>• IIM-LD-110.17 – <i>General Notes</i></li> <li>• IIM-LD-121.15 – <i>Pipe Criteria for Culvert and Storm sewers</i></li> <li>• IIM-LD-130.7 – <i>Underdrains</i></li> <li>• IIM-LD-138.6 – <i>Earthwork Quantities</i></li> <li>• IIM-LD-166.3 – <i>Soil Stabilization Mat</i></li> <li>• IIM-LD-173 – <i>Temporary Construction Causeways</i></li> <li>• IIM-LD-182.4 – <i>Temporary Diversion Channels</i></li> <li>• IIM-LD-191.2 – <i>Hazardous Mater/Waste Sites</i></li> <li>• IIM-LD-195.5 – <i>Management of Stormwater</i></li> <li>• IIM-LD-202.2 – <i>Clearing and Grubbing</i></li> <li>• IIM-LD-210.4 – <i>Initial Field Review/Project Scoping</i></li> </ul>

**BMP 5.2: Update VDOT SWM Manual and Guidance**  
**(Continued)**

Target Date	BMP Activity	Resp. VDOT Division	Status
			<ul style="list-style-type: none"> <li>• IIM-LD-214.2 – <i>Culvert Design</i></li> <li>• IIM-LD-217.2 – <i>Wetland Compensation</i></li> <li>• IIM-LD-225.1 – <i>Pipe Bedding and Backfill</i></li> <li>• IIM-LD-226.2 – <i>Preliminary Engineering Project Development Process</i></li> <li>• IIM-LD-228 – <i>Sinkholes</i></li> <li>• IIM-LD-233 – <i>Natural Channel Design</i></li> <li>• IIM-LD-235 – <i>Context Sensitive Solutions</i></li> <li>• IIM-LD-236 – <i>Critical Infrastructure Information/Sensitive Security Information</i></li> <li>• IIM-LD-242 – <i>Virginia Stormwater Management Program</i></li> </ul> <p>Location and Design Division’s Hydraulics Section uses Hydraulic Design Advisories (HDA) to provide instructions relating to policies and procedures and are issued by the State Hydraulic Engineer. Below are the primary ones relating to BMP 4B:</p> <ul style="list-style-type: none"> <li>• HDA 06-05 – <i>Erosion and Sediment Control Plan Details</i></li> <li>• HDA 06-04 – <i>Recommendations for Manning’s “n” values for VDOT standard riprap sizes</i></li> <li>• HDA 06-03 – <i>Culvert Outlet Protection Road and Bridge Standards EC-1</i></li> <li>• HDA 06-02 – <i>Scour Consideration for three-sided structures</i></li> <li>• HDA 06-01 – <i>Road and Bridge Standard PC-1 Polyethylene Corrugated Pipe</i></li> <li>• HDA 05-05 – <i>Dan Anderson Peak Discharge Determination Procedural Revision</i></li> <li>• HDA 05-04 – <i>Application of NRCS “TR-55” and “TR-20” hydrologic computations using NOAA 14 rainfall data</i></li> </ul>

**BMP 5.2: Update VDOT SWM Manual and Guidance**  
**(Continued)**

Target Date	BMP Activity	Resp. VDOT Division	Status
			<ul style="list-style-type: none"> <li>• HDA 05-03 – <i>VDOT adoption and Implementation of NOAA atlas 14 rainfall precipitation frequency data</i></li> <li>• HDA 05-02 – <i>Change in procedure for determining mean high and low tide elevations</i></li> <li>• HDA 05-01 – <i>Consideration of floodplain storage in the design of drainage facilities</i></li> <li>• HDA 07-01 <i>Stormwater Management Plans</i></li> </ul> <p>Construction Division Memorandum (CD) provides guidance primarily to Construction Division Staff Statewide and they are issued by the Scheduling and Contracts Division Administrator.</p> <ul style="list-style-type: none"> <li>• CD-2002-8: <i>Contractors Performance Evaluations</i>: The Contractors performance report (C36) is one indicator used in assessing contractor qualifications. Contractors are evaluated in 5 categories: Quality, Company Management of Project, Communication (effectiveness &amp; timeliness), Safety, and Environmental. Unsatisfactory performance results in contractor’s removal from prequalification bidders list for 90 days.</li> <li>• CD-2002-7: <i>Notification of Non-compliance and Suspension of Work</i> outlines procedures for non-compliant issues in safety and environmental to include the state Scheduling and Contracts Engineer and the Commissioner’s Staff.</li> </ul> <p>VDOT, on a continual basis, evaluates staff certification requirements.</p>

**BMP 5.3: Stormwater BMP Maintenance and Inspection Program**

Target Date	BMP Activity	Resp. VDOT Division	Status
3/03 – 2/04	Refine Stormwater Basin Assessment data collection form, inventory, and condition assessment protocols.	CO/Dist. AM	<p>The protocol as defined in the <u>Hampton Roads District SWM Basin Inventory &amp; Inspection Manual</u> is being used by all nine VDOT districts in the initial assessment of the SWM Basins to determine the functional condition of all VDOT operated basins. Each of the twenty-seven inspection parameters is rated on a scale of 1 to 5 (in some cases 0 to 5). The objective is to provide a consistent frame work for performing the scoring of the individual parameters. In general the ratings reflect:</p> <ul style="list-style-type: none"> <li>0 – Not Applicable</li> <li>1 – Operating as Designed, No Issues Observed</li> <li>2 – Functional, Minor Problems Exist</li> <li>3 – Functional, Moderate Problems Exist</li> <li>4 – Performance is Compromised, Major Problems Exist</li> <li>5 – Non-Functional, Imminent Failure, Failure</li> </ul> <p>The SWB Overall Rating is a qualitative evaluation of the individual parameters to establish an overall rating value for the basin. The objective of the rating classes is to evaluate the existing conditions, while also considering impending conditions. The rating categories can be used by VDOT in planning inspection intervals, maintenance schedules, repair or replacement of SWB, and potentially identify SWBs at-risk for failure. A ratings of “A” (The SWB is functioning as designed with no problem conditions identified.) through “E” (Severe problems are observed, and basin is not functioning as designed with several critical parameters with problem conditions.) is assigned to the basin.</p>

**BMP 5.3: Stormwater BMP Maintenance and Inspection Program**  
**(Continued)**

Target Date	BMP Activity	Resp. VDOT Division	Status
			The evaluation of the individual parameters and the Overall Rating is used to establish a priority value for performing maintenance. The objective of the Maintenance Priority Rating is to provide recommended time estimation for maintenance, other than normal mowing and trash removal, on the existing SWB conditions. A maintenance priority rating of "A" (SWB requires no maintenance.) through "E" (SWB requires maintenance within 24 hours.) is assigned to the basin.
7/05 – 12/05	Develop Comprehensive VDOT SWB Management Program Manual to serve as basis for assessment/inventory, routine maintenance, minor repair, major repair/retrofit actions on VDOT stormwater basins and related facilities and develop a corresponding training program.	CO/Dist. AM	A comprehensive VDOT SWB Management Program Manual has not yet been prepared. The procedures necessary to complete the inventory and assessment have been developed and evolved as experience is gained by Central Office or the District personnel completing the assessment.
9/05 - 12/05	Complete inventory and condition assessment of VDOT owned/operated SWM basins through Asset Management System	CO/Dist. AM	<p>The completion of the inventory and condition assessment on all VDOT operated basins will be completed in several phases:</p> <ul style="list-style-type: none"> <li>• Six of the VDOT districts (Hampton Roads, Fredericksburg, Lynchburg, Richmond, Salem, and Northern Virginia) have completed an inventory of basins and completed one or more inspection in accordance with the accepted protocol and inspection forms. Three of the VDOT districts (Staunton, Culpeper, and Bristol) are in the process of completing the inventory and inspection based on the accepted protocol and inspection forms. All districts will be required to submit a complete inventory and condition assessment by September 2007.</li> <li>• Each district will submit a business plan for improvement of basins that have an Overall Rating of "D" or "E" (Major Problems Exist or Non-Functional, Imminent Failure) for inclusion in the next budget cycle. Normal maintenance expenses for basins are to be included in the district budget as a standard item in the budget process.</li> </ul>



**BMP 5.3: Stormwater BMP Maintenance and Inspection Program**  
**(Continued)**

Target Date	BMP Activity	Resp. VDOT Division	Status																														
			<ul style="list-style-type: none"> <li>• Attached is a listing of the BMPs installed identified by geographic location, waterbody, and number of acres treated. These facilities are inspected bi-annually.</li> <li>• A Quality control review will be conducted by comparing the inventory submitted by the district to an inventory developed by reviewing construction project plan sheets. All discrepancies will be investigated and inventories adjusted by September 2008. The quality control review will include the capture of basins that were constructed by VDOT but not operated by VDOT. This data will be reconciled with the Location and Design Tracking Database.</li> </ul> <p>The estimated number of basins for each MS4 permitted area based on the preliminary inventory is listed below. This number will be refined in September 2007 and after the Quality control review is completed.</p> <table style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: left;"><u>Urban Area</u></th> <th style="text-align: right;"><u>Estimated Basins</u></th> </tr> </thead> <tbody> <tr><td>Bristol</td><td style="text-align: right;">8</td></tr> <tr><td>Kingsport</td><td style="text-align: right;">2</td></tr> <tr><td>Blacksburg</td><td style="text-align: right;">22</td></tr> <tr><td>Roanoke</td><td style="text-align: right;">9</td></tr> <tr><td>Danville</td><td style="text-align: right;">6</td></tr> <tr><td>Lynchburg</td><td style="text-align: right;">13</td></tr> <tr><td>Harrisonburg</td><td style="text-align: right;">5</td></tr> <tr><td>Winchester</td><td style="text-align: right;">10</td></tr> <tr><td>Charlottesville</td><td style="text-align: right;">11</td></tr> <tr><td>Northern Virginia</td><td style="text-align: right;">215</td></tr> <tr><td>Fredericksburg</td><td style="text-align: right;">23</td></tr> <tr><td>Richmond</td><td style="text-align: right;">87</td></tr> <tr><td>Hampton Roads</td><td style="text-align: right;"><u>118</u></td></tr> <tr><td style="text-align: right;">Total</td><td style="text-align: right;">529</td></tr> </tbody> </table>	<u>Urban Area</u>	<u>Estimated Basins</u>	Bristol	8	Kingsport	2	Blacksburg	22	Roanoke	9	Danville	6	Lynchburg	13	Harrisonburg	5	Winchester	10	Charlottesville	11	Northern Virginia	215	Fredericksburg	23	Richmond	87	Hampton Roads	<u>118</u>	Total	529
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**BMP 5.3: Stormwater BMP Maintenance and Inspection Program**  
**(Continued)**

Target Date	BMP Activity	Resp. VDOT Division	Status
1/05 – 1/06	Initiate and implement in-house and/or contract mechanisms and activities to ensure/return all SWM basins to a low/routine maintenance protocol.	CO/Dist. AM	<p>The Construction Manual has been prepared to inform and assist construction inspection personnel in the performance of their duties and in the documentation of project activities with the goal of aiding in providing and maintaining the high quality construction standards for VDOT projects.</p> <p>The Construction Inspection Manual was prepared to define and strengthen the application of construction inspection throughout the Commonwealth. The manual sets inspection objectives and lists inspection activities for different stages of project implementation such as Mobilization, Clearing and Grubbing, pipe and culvert installation, excavation, etc.</p> <p>The VDOT Drainage Manual is an operations handbook for use in hydraulic and hydrologic analysis. It is intended to be used for the development of the drainage design for VDOT engineering projects. The objectives of the manual are as follows:</p> <ul style="list-style-type: none"> <li>• Provide concise technical information for drainage designers</li> <li>• Establish VDOT’s policy and procedures</li> <li>• Provide an educational tool for aspiring drainage designers</li> <li>• Provide guidelines to enhance the quality of drainage designs</li> </ul>
1/06 – 1/07	Reporting and tracking	CO/Dist. AM	<p>The collection of the inventory and completion of the inspection is accomplished on a Pocket PC or Tablet PC using ESRI’s ArcPad 6.0.3 software. The data collection was completed in accordance with procedures developed for collection of significant assets for the Asset Management Systems. The databases are currently kept at the district level. Inventories and condition assessment reports are prepared as needed from the district database.</p>

**BMP 5.3: Stormwater BMP Maintenance and Inspection Program**  
**(Continued)**

Target Date	BMP Activity	Resp. VDOT Division	Status
			A sub-committee of the Stormwater Technical Committee has been established to determine if a centralized database is desired and the procedures and database structure of a centralized database. The sub-committee will also discuss the procedures that should be implemented to cross reference the Asset Management Stormwater basin maintenance inventory to the Engineering database maintained by VDOT's Location and Design Division.

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**BMP 5.4: Program Evaluation and Assessment**

Target Date	BMP Activity	Resp. VDOT Division	Status
3/03 – 2/04	Develop and refine a consistent process to evaluate and report on compliance with approved project specific SWM plan, permit conditions, and VDOT Annual Plan.	CO/Dist Con, AM	<p>Construction Division Memorandum provides guidance primarily to Construction Division Staff Statewide and are issued by the Scheduling and Contracts Division Administrator.</p> <ul style="list-style-type: none"> <li>• CD-2002-8: <i>Unsatisfactory Contractor's Performance (C36)</i> results in contractor's removal from prequalification bidders list for 90 days.</li> <li>• CD-2002-9 <i>Improving Compliance with Environmental and Safety Laws</i> outlines procedures for addressing issues of non-compliance with environmental and safety laws.</li> </ul>
3/04 – 2/08	Implement the ECR system on all regulated VDOT Projects.	CO/Dist. L&D, Con, AM	An Environmental Compliance Reporting System was developed to document compliance with Environmental Commitments. This system allows VDOT Environmental Monitors and Residency Specialists to report project compliance review data to a central database. This database provides a real time assessment of the compliance on any project being inspected, and will provide the basis for annual assessment reports.

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**BMP 5.5: New Product Evaluation Protocol**

Target Date	BMP Activity	Resp. VDOT Division	Status
3/03 – 6/04  ➤ 6/03  ➤ 6/04	Develop New Product Evaluation Protocol  Establish New Product Technical Committee, including Materials Division and the Transportation Research Council.  Final recommendations for New Product Evaluation Protocol	CO/Dist. L&D, AM, Env, Matls VTRC.	Please see BMP 4.3.
6/04 – 2/08	Implement New Product Evaluation Protocol. Generate new product list for distribution to VDOT Districts, Residencies, VDOT contractors, and DCR.	CO/Dist. L&D, AM, Env, Matls VTRC.	Please see BMP 4.3.

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**BMP 6.1: Existing VDOT Training Programs**

Target Date	BMP Activity	Resp. VDOT Division	Status
3/03 – 2/04	Establish a catalogue of training programs currently available and consolidate training services through the VDOT Learning Center. Identify any gaps in the existing training program in addressing storm water related Department activities.	CO L&D, VDOT Learning Center, Env	<p>VDOT training and certification programs have been brought under one administrative umbrella led by the VDOT Learning Center (LC). In May 2005, VDOT’s LC deployed VDOT Virtual University, the Meridian KSI Learning Management System (LMS), to support its statewide training and development efforts.</p> <p>The VDOT Virtual University, provides immediate access to both individuals and program managers to on-line catalogued training programs and resources, as well as provides the ability to track all personnel by group, course types, etc. The target date for full deployment of the VDOT Virtual University to be populated with all existing VDOT training program data related to water quality-related asset management activity was November 2005.</p> <p>In partnership with divisions involved with the Stormwater Program, the LC is also evaluating existing and new courses to incorporate into VDOT Virtual University. After the program data is fully entered, annual updates can provide a detailed tracking report of numbers of personnel and corresponding courses/certifications completed that benefit the comprehensive Stormwater Program.</p> <p>BMP 6.2 identifies the number of VDOT personnel, for each reporting cycle of the permit that attended training courses of benefit to the Stormwater Program.</p>

**BMP 6.2: Develop New VDOT Training Programs**

Target Date	BMP Activity	Resp. VDOT Division	Status
3/03 – 2/05	Develop new training and education programs as needed specifically targeted towards the maintenance and upkeep of VDOT's stormwater related infrastructure, incorporating the water quality goals of this program, including (but not limited to): Automobile and Equipment Maintenance, Haz Mat Storage and Handling, Turf Management, Spill Response and Prevention, Storm Drain System Cleaning, etc.	CO L&D, AM, VDOT Learning Center	<p>The VDOT Learning Center (LC) has implemented a web-based application called the VDOT Virtual University, Meridian KSI Learning Management System (LMS). This software allows VDOT personnel and program managers to develop new on-line training programs related specifically to the MS-4 Permit Program requirements. A brief description of those courses/certifications that benefit the comprehensive Stormwater Program is provided below:</p> <ul style="list-style-type: none"> <li>• <b>Waste Management</b> training identifies proper management of hazardous, non-hazardous and universal wastes. It also provides information on spill response, including how to respond and who to contact. Persons who generate, store or handle hazardous waste at a Small Quantity Generator or Large Quantity Generator facility are subject to the <b>hazardous waste training</b> requirements. <ol style="list-style-type: none"> <li>1. Facility staff that handle hazardous wastes as their normal job responsibility;</li> <li>2. Facility personnel that are likely to handle hazardous wastes during an emergency situation;</li> <li>3. Facility staff who do not handle hazardous waste, but work in or adjacent to areas where hazardous wastes are generated, stored or handled. <ol style="list-style-type: none"> <li>a. Initial Training must occur within 6 months for an employee whose job duties involve handling, storing, or generating hazardous waste.</li> <li>b. Annual Refreshers must occur for the employee whose job duties involve handling, storing, or generating hazardous waste.</li> </ol> </li> </ol> </li> </ul>

**BMP 6.2: Develop New VDOT Training Programs**  
**(Continued)**

Target Date	BMP Activity	Resp. VDOT Division	Status																							
			<ul style="list-style-type: none"> <li>• <b>Advanced Hazardous Waste Management.</b> This training pertains directly to the role of the employee within the Hazardous Materials Section in that it provides an advanced opportunity for an update on USEPA hazardous waste regulatory initiatives and changes. This will allow for the Hazardous Materials Section to ultimately provide better guidance on complex hazardous waste issues.</li> <li>• <b>In Stream Maintenance Activities.</b> This training was developed and implemented as awareness training for our maintenance field forces. The training covers the following topics:             <table style="margin-left: 20px; border: none;"> <tr><td>1. Initiating Environmental Review &amp; Clearance</td><td style="text-align: right;">15 minutes</td></tr> <tr><td>2. Permits for Maintenance Activities</td><td style="text-align: right;">30 minutes</td></tr> <tr><td>3. In Stream Maintenance Activities</td><td style="text-align: right;">30 minutes</td></tr> <tr><td>4. Countersinking of Pipes &amp; Culverts</td><td style="text-align: right;">20 minutes</td></tr> <tr><td>5. Alternative Stream Stabilization Measures</td><td style="text-align: right;">20 minutes</td></tr> <tr><td>6. Erosion &amp; Sediment Control Plans (SLS)</td><td style="text-align: right;">30 minutes</td></tr> <tr><td>7. Ditch Maintenance</td><td style="text-align: right;">15 minutes</td></tr> <tr><td>8. Maintenance Disposal Areas</td><td style="text-align: right;">15 minutes</td></tr> <tr><td>9. Emergency!! Situations &amp; Solutions</td><td style="text-align: right;">20 minutes</td></tr> </table> </li> <li>• <b>USDOT Hazardous Material Shipping Training.</b> Those personnel involved with the transportation of hazardous materials must complete this training. This includes persons who:             <table style="margin-left: 20px; border: none;"> <tr><td>1. Load, unload, and handle hazardous materials;</td></tr> <tr><td>2. Mark packages for shipment;</td></tr> <tr><td>3. Prepare hazardous materials for transportation;</td></tr> <tr><td>4. Sign and maintain hazardous waste manifests;</td></tr> <tr><td>5. Each person must have Initial and Refresher <i>USDOT hazardous material shipping training</i>. Employees involved with hazardous materials (and waste) shipping must be Trained, Tested, and Certified in Hazardous Materials</td></tr> </table> </li> </ul>	1. Initiating Environmental Review & Clearance	15 minutes	2. Permits for Maintenance Activities	30 minutes	3. In Stream Maintenance Activities	30 minutes	4. Countersinking of Pipes & Culverts	20 minutes	5. Alternative Stream Stabilization Measures	20 minutes	6. Erosion & Sediment Control Plans (SLS)	30 minutes	7. Ditch Maintenance	15 minutes	8. Maintenance Disposal Areas	15 minutes	9. Emergency!! Situations & Solutions	20 minutes	1. Load, unload, and handle hazardous materials;	2. Mark packages for shipment;	3. Prepare hazardous materials for transportation;	4. Sign and maintain hazardous waste manifests;	5. Each person must have Initial and Refresher <i>USDOT hazardous material shipping training</i> . Employees involved with hazardous materials (and waste) shipping must be Trained, Tested, and Certified in Hazardous Materials
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4. Countersinking of Pipes & Culverts	20 minutes																									
5. Alternative Stream Stabilization Measures	20 minutes																									
6. Erosion & Sediment Control Plans (SLS)	30 minutes																									
7. Ditch Maintenance	15 minutes																									
8. Maintenance Disposal Areas	15 minutes																									
9. Emergency!! Situations & Solutions	20 minutes																									
1. Load, unload, and handle hazardous materials;																										
2. Mark packages for shipment;																										
3. Prepare hazardous materials for transportation;																										
4. Sign and maintain hazardous waste manifests;																										
5. Each person must have Initial and Refresher <i>USDOT hazardous material shipping training</i> . Employees involved with hazardous materials (and waste) shipping must be Trained, Tested, and Certified in Hazardous Materials																										



**BMP 6.2: Develop New VDOT Training Programs**  
**(Continued)**

Target Date	BMP Activity	Resp. VDOT Division	Status
			<p>General Awareness, Function Specific, Safety, and Security Awareness topics.</p> <ul style="list-style-type: none"> <li>a. Initial Training must occur within 90-days of when the employee's job functions first involve handling hazardous waste for transport.</li> <li>b. Refresher Training must occur every 3 years for those employees involved in handling hazardous waste for transport.</li> </ul> <ul style="list-style-type: none"> <li>• <b>SPCC Training</b> <ol style="list-style-type: none"> <li>1. The Spill Prevention Control and Countermeasure (SPCC) Program requires that all oil handling personnel at an SPCC site (see Guide 4.1) be trained in proper pollution prevention measures relevant to that site. Such measures and practices can be found in the site's SPCC Plan.</li> <li>2. This Training is required annually. Contact your site's SPCC Coordinator, Regional Hazardous Materials Manager, or the Central Office Hazardous Materials section for more information.</li> </ol> </li> <li>• <b>VDACS certification as a Pesticide Applicator.</b> This training and certification is required for those personnel directly involved with ornamental pest control, turf pest control, right of way pest control, Public health pest control, aquatic pest control, register technician, and forest pest control.</li> </ul>

**BMP 6.2: Develop New VDOT Training Programs**  
**(Continued)**

Target Date	BMP Activity	Resp. VDOT Division	Status
			<p>The Environmental Division staff has developed and implemented a Residency Environmental Specialist Water Quality Guidance Manual to provide a reference when working on water quality related issues and under environmental clearances.</p> <p>See BMP 6.4 for information pertaining to VDOT's Turf Management and Nutrient Management training.</p>
3/04 – 2/08	Track attendance of all VDOT personnel attending training courses	CO L&D, AM, VDOT Learning Center, Env	<p>FY06 - 160 employees received Waste Management Training          FY05 - 200 employees received Waste Management Training          FY04 - 214 employees received Waste Management Training          FY03 - 269 employees received Waste Management Training          FY03 - 229 employees attended SPCC Training          FY04 - 86 employees attended SPCC Training          FY05 - 175 employees attended SPCC Training          FY06 - 76 employees attended SPCC Training          FY05 - 102 employees attended Construction Inspector Training          FY06 - 162 employees attended Construction Inspector Training          FY06 - 76 employees were VDACS certified as a Pesticide Applicator</p>

**BMP 6.3: Update VDOT Best Practices Manual for Maintenance Activities**

Target Date	BMP Activity	Resp. VDOT Division	Status
5/05 – 3/07	Continue to update the VDOT Best Practices Manual for Maintenance Activities as new technologies, efficiencies, and improved performance life cycle of stormwater related assets can be improved.	CO/Dist AM	<p>Principal chapters of the VDOT Asset Management Best Practices Manual related to BMP 6.3 and VDOT’s MS4 permit requirements include Roadside Management (Chapter 11), Drainage &amp; Stormwater Management (Chapter 5), Hazardous Materials (Chapter 8), Snow and Ice Control (Chapter 14), and Training (Chapter 19). The manual was finalized in 2005 for statewide usage. VDOT developed an information sheet to guide the disposal of the following categories:</p> <ul style="list-style-type: none"> <li>• Aerosol cans, Animal Carcasses, Antifreeze, Asphalt equipment cleaning, Batteries,</li> <li>• Bridge Timbers and Treated Lumber, e-Wastes (Monitors and Computers),</li> <li>• Filters- oil, gas, diesel, paint, Fluorescent lamps, HID, and metal halide lights,</li> <li>• Freon, Herbicides and Pesticides, Light ballasts (PCB and non-PCB), Mercury switches and equipment,</li> <li>• Oil, Gas, and Diesel, Paint - latex, solvent based, Parts cleaners - low flashpoint, high flashpoint,</li> <li>• Solvent based, aqueous rags, wipes, absorbents, floor dry- oil, gas, diesel, solvents, Scrap Tires, Salt ponds, Salt spreaders, Solid waste - ‘trash’ Surplus and Excess property, Underground storage tanks, Vehicle Wash Pads, Approved products list from Materials Division, SPCC, Highway response - PREP Manual, Spills - response and reporting, oil - response and reporting, chemical, Storm drains, storm water, No Exposure BMP.</li> </ul> <p>VDOT developed WASTE MATERIALS MANAGEMENT PROCEDURES.          The purpose of these procedures is to provide a safe work place and a protected environment.</p>

**BMP 6.3: Update VDOT Best Practices Manual for Maintenance Activities**  
**(Continued)**

Target Date	BMP Activity	Resp. VDOT Division	Status
5/05 – 3/07	Continue to update the VDOT Best Practices Manual for Maintenance Activities as new technologies, efficiencies, and improved performance life cycle of stormwater related assets can be improved.	CO/Dist AM	<p>Specifically, it focuses on site personnel training, identifying people who will provide help &amp; information, identifying waste generating activities on VDOT work areas, teaching special handling methods, provides special storage requirements, explains how to manage spills, helps pass site inspections and audits, and shows how to keep good records.</p> <p>This guide is made up of specific instruction on how to store, transfer, and dispose of potentially hazardous and non-hazardous waste streams.</p> <p>Each work <u>activity</u> (such as replacing a battery in a vehicle) is covered by a chart or checklist, which provides an action to take.</p> <p>The charts for each <u>function</u> (such as auto maintenance) collectively make a booklet covering all the jobs in a facility; for example, district maintenance shop. The information for all the facilities is bound together in a binder for everyone at a VDOT work area to use.</p> <p>Each person is to use the activity flow charts, check lists, or record forms to help them do their specific jobs. The information also tells you who to call and where to go if you need help.</p>
3/04 – 2/06	Develop training courses on new Maintenance Policy and implement through the VDOT Learning Center as identified in BMP 6.2.	CO/Dist. AM, VDOT Learning Center	<p>The Area Headquarters Operations Team Site has been developed by the VDOT Learning Center – Maintenance Training Academy and Asset Management Roadside Development on the inside VDOT portal. The team site was developed to provide a resource for all residencies and area headquarters. Links are provided to allow the area headquarters to find the latest guidance from VDOT and external sources on such items as reporting a spill, HAZMAT contacts, DEQ Pollution Response Manual, Hazardous Material Spills, among others.</p> <p>Development is in the final stages for the implementation of online training courses for Cleaning of Asphalt Equipment and Salt Pond Management. The team site will contain a section on each of these topics with resources and links. After the management at the area headquarters has reviewed the material they will be required to take a quiz on the VDOT University related to the subject matter. More topics and subject matter will be added as training needs are identified.</p>

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**BMP 6.4: VDOT Turf Management Program**

Target Date	BMP Activity	Resp. VDOT Division	Status
10/04 – 6/06	Develop detailed and updated reference manuals for Turf Management and Nutrient Management and corresponding training materials to support the VDOT Best Practices Manual for Maintenance Activities and current Road & Bridge Specifications, Standards and corresponding construction activities.	CO/Dist AM	<p>VDOT's Turf and Nutrient Management Program best practices are contained within Chapter 11, Roadside, of the VDOT Best Practices Manual (see BMP 6.3).</p> <p>The <u>Turf &amp; Vegetation Management Manual</u> was completed by Virginia Tech and VDOT Roadside Management in 2005. A training session was held in Blacksburg in May of 2006 for all of the Roadside Management team with approximately 60 employees in attendance.</p> <p>The VDOT Nutrient Management Plan permits were developed by Virginia Tech and filed with DCR in June of 2006. All of the permits with the exception of Active Construction have been implemented. The development of the specifications, standards, other contract documents necessary for implementation as well as notification of the contractors association to implement the Active Construction permit is in progress.</p> <p>Prior to the implementation of the Nutrient Management Plan the Specification Section 603.03 (c) Applying Fertilizer was amended on June 10, 2004 to restrict the application of nitrogen to no more than 45 pounds per acre.</p> <p>Virginia Tech and Roadside Management continue to work with DCR in the development of an Urban Nutrient Management Certification program. Once the program is completed the District Roadside Managers and employees will be encouraged to obtain certification.</p>
6/06 – 2/08	Continue to update training courses and implement through the VDOT Learning Center as identified in BMP 6.2.	CO/Dist AM, VDOT Learning Center	<p>The VDOT Learning Center (LC) has implemented a web-based application called the VDOT Virtual University, Meridian KSI Learning Management System (LMS). This software allows VDOT personnel and program managers to develop new on-line training programs related specifically to the MS-4 Permit Program requirements.</p> <p>See BMP 6.2 for additional information regarding training courses.</p>

Begin Advertisement Date : 4/2003

End Advertisement Date : 7/2007

Hydrologic Unit: A09

Category: C

Type:	Drainage Area Treated (Acres)	Impervious Area Treated (Acres)	Disturbed Area (Acres)	Stream Name:
Extended Detention Basin	17.16	2.92	7.47	Indian Creek
Extended Detention Basin	9.31	2.95	7.59	Broad Run
Extended Detention Basin	10.3	5.9	10.3	Indian Creek
Extended Detention Basin	8.16	4	8.16	Indian Creek
Extended Detention Basin	43.1	7.84	21.1	Broad Run
Extended Detention Basin	6.07	1.85	6.07	Indian Creek
Extended Detention Basin	22.44	3.56	11.26	Indian Creek
Extended Detention Basin	11.07	6.89	11.07	Broad Run
<b>Category Totals:</b>	<b>127.61</b>	<b>35.91</b>	<b>83.02</b>	

Hydrologic Unit Totals: 127.61 35.91 83.02

Hydrologic Unit: A11

Category: B

Type:	Drainage Area Treated (Acres)	Impervious Area Treated (Acres)	Disturbed Area (Acres)	Stream Name:
Dry Detention Basin	4.901	2.072	2.885	Difficult Run
Dry Detention Basin	3.112	1.679	1.827	Difficult Run
<b>Category Totals:</b>	<b>8.013</b>	<b>3.751</b>	<b>4.712</b>	

Hydrologic Unit Totals: 8.013 3.751 4.712

Hydrologic Unit: A13

Category: B

Type:	Drainage Area Treated (Acres)	Impervious Area Treated (Acres)	Disturbed Area (Acres)	Stream Name:
Manufactured (hydro-dynamic) BMP	1.6	1.6	0	Storm Sewer System and box culvert
Manufactured (hydro-dynamic) BMP	1.42	1.42	0	Storm Sewer System / box culvert to
Manufactured (hydro-dynamic) BMP	5.4	5.4	0	Storm Sewer System/Ditch/culvert to
<b>Category Totals:</b>	<b>8.42</b>	<b>8.42</b>	<b>0</b>	

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Hydrologic Unit Totals:	8.42	8.42	0
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**Hydrologic Unit: A15**

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**Category: A**

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Type:	Drainage Area Treated (Acres)	Impervious Area Treated (Acres)	Disturbed Area (Acres)	Stream Name:
Retention Basin II	2.5	2.5	2.5	Calamo Branch
Category Totals:	2.5	2.5	2.5	

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Hydrologic Unit Totals:	2.5	2.5	2.5
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**Hydrologic Unit: A19**

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**Category: C**

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Type:	Drainage Area Treated (Acres)	Impervious Area Treated (Acres)	Disturbed Area (Acres)	Stream Name:
Extended Detention-enhanced Basin	7.31	3.33	7.31	Rocky Branch
Extended Detention-enhanced Basin	7.56	4.39	7.56	Rocky Branch
Category Totals:	14.87	7.72	14.87	

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Hydrologic Unit Totals:	14.87	7.72	14.87
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**Hydrologic Unit: A21**

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**Category: C**

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Type:	Drainage Area Treated (Acres)	Impervious Area Treated (Acres)	Disturbed Area (Acres)	Stream Name:
Extended Detention Basin	20.63	7.33	20.63	Little Bull Run
Extended Detention-enhanced Basin	13.16	8.08	13.16	Little Bull Run
Category Totals:	33.79	15.41	33.79	

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Hydrologic Unit Totals:	33.79	15.41	33.79
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**Hydrologic Unit: A22**

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**Category: B**

Type:	Drainage Area Treated (Acres)	Impervious Area Treated (Acres)	Disturbed Area (Acres)	Stream Name:
Dry Detention Basin	5.662	2.913	3.339	Rocky Run
<b>Category Totals:</b>	<b>5.662</b>	<b>2.913</b>	<b>3.339</b>	

**Category: C**

Type:	Drainage Area Treated (Acres)	Impervious Area Treated (Acres)	Disturbed Area (Acres)	Stream Name:
Extended Detention Basin	3.79	1.61	3.79	Cain Branch
Extended Detention Basin	7.17	2.49	7.17	Cub Run
Extended Detention Basin	12	7.7	11.44	Flatlick Branch
Extended Detention Basin	10.2	5.3	9	Flatlick Branch
Extended Detention Basin	13.7	4.6	9.38	Flatlick Branch
Extended Detention Basin	32.6	2.6	32.6	Cain Branch
Extended Detention Basin	12.18	5.27	12.18	Cain Branch
<b>Category Totals:</b>	<b>91.64</b>	<b>29.57</b>	<b>85.56</b>	

<b>Hydrologic Unit Totals:</b>	<b>97.302</b>	<b>32.483</b>	<b>88.899</b>
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**Hydrologic Unit: A25****Category: C**

Type:	Drainage Area Treated (Acres)	Impervious Area Treated (Acres)	Disturbed Area (Acres)	Stream Name:
Extended Detention Basin	72.31	1.32	3.8	Neabsco Creek
<b>Category Totals:</b>	<b>72.31</b>	<b>1.32</b>	<b>3.8</b>	

<b>Hydrologic Unit Totals:</b>	<b>72.31</b>	<b>1.32</b>	<b>3.8</b>
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**Hydrologic Unit: E09****Category: C**

Type:	Drainage Area Treated (Acres)	Impervious Area Treated (Acres)	Disturbed Area (Acres)	Stream Name:
Extended Detention Basin	10.6	2.93	0	Mountain Run
Extended Detention Basin	3.8	1.2	1.32	Mountain Run



Extended Detention Basin	11.81	4.17	0	Mountain Run
<b>Category Totals:</b>	<b>26.21</b>	<b>8.3</b>	<b>1.32</b>	
<b>Hydrologic Unit Totals:</b>	<b>26.21</b>	<b>8.3</b>	<b>1.32</b>	

**Hydrologic Unit: F14**

**Category: B**

Type:	Drainage Area Treated (Acres)	Impervious Area Treated (Acres)	Disturbed Area (Acres)	Stream Name:
Manufactured (hydro-dynamic) BMP	9	4.4	0.8	Pamunkey River
<b>Category Totals:</b>	<b>9</b>	<b>4.4</b>	<b>0.8</b>	
<b>Hydrologic Unit Totals:</b>	<b>9</b>	<b>4.4</b>	<b>0.8</b>	

**Hydrologic Unit: F25**

**Category: E**

Type:	Drainage Area Treated (Acres)	Impervious Area Treated (Acres)	Disturbed Area (Acres)	Stream Name:
Water Quality Swale	4.41	1.44	3.78	West Point Creek
Water Quality Swale	3.84	3.11	1.13	West Point Creek
<b>Category Totals:</b>	<b>8.25</b>	<b>4.55</b>	<b>4.91</b>	
<b>Hydrologic Unit Totals:</b>	<b>8.25</b>	<b>4.55</b>	<b>4.91</b>	

**Hydrologic Unit: G10**

**Category: C**

Type:	Drainage Area Treated (Acres)	Impervious Area Treated (Acres)	Disturbed Area (Acres)	Stream Name:
Extended Detention Basin	2.46	1.79	0.62	Powhatan Creek
Extended Detention Basin	25.38	5.68	2.49	Tutters Neck Pond
Extended Detention Basin	25.38	5.68	2.49	Tutters Neck Pond
<b>Category Totals:</b>	<b>53.22</b>	<b>13.15</b>	<b>5.6</b>	

**Category: E**

Type:	Drainage Area Treated (Acres)	Impervious Area Treated (Acres)	Disturbed Area (Acres)	Stream Name:
Water Quality Swale	3.14	1.55	0	College Creek
Water Quality Swale	5.31	0.75	5.31	College Creek
<b>Category Totals:</b>	<b>6.45</b>	<b>2.3</b>	<b>5.31</b>	
<b>Hydrologic Unit Totals:</b>	<b>61.87</b>	<b>15.45</b>	<b>10.91</b>	

**Hydrologic Unit: G11****Category: A**

Type:	Drainage Area Treated (Acres)	Impervious Area Treated (Acres)	Disturbed Area (Acres)	Stream Name:
Retention Basin 1	179	6	3.46	Lake Maury
<b>Category Totals:</b>	<b>179</b>	<b>6</b>	<b>3.46</b>	
<b>Hydrologic Unit Totals:</b>	<b>179</b>	<b>6</b>	<b>3.46</b>	

**Hydrologic Unit: H03****Category: A**

Type:	Drainage Area Treated (Acres)	Impervious Area Treated (Acres)	Disturbed Area (Acres)	Stream Name:
Retention Basin 1	25	3.7	5.5	Ivy Creek
<b>Category Totals:</b>	<b>25</b>	<b>3.7</b>	<b>5.5</b>	

**Category: B**

Type:	Drainage Area Treated (Acres)	Impervious Area Treated (Acres)	Disturbed Area (Acres)	Stream Name:
Dry Detention Basin	14.5	3	4.8	Ivy Creek
<b>Category Totals:</b>	<b>14.5</b>	<b>3</b>	<b>4.8</b>	
<b>Hydrologic Unit Totals:</b>	<b>39.5</b>	<b>6.7</b>	<b>10.3</b>	

Hydrologic Unit: L07

Category: C

Type:	Drainage Area Treated (Acres)	Impervious Area Treated (Acres)	Disturbed Area (Acres)	Stream Name:
Extended Detention Basin	0	0	0	Smith Mountain Lake/Roanoke River
Category Totals:	0	0	0	
Hydrologic Unit Totals:	0	0	0	

Hydrologic Unit: L27

Category: C

Type:	Drainage Area Treated (Acres)	Impervious Area Treated (Acres)	Disturbed Area (Acres)	Stream Name:
Extended Detention Basin	27.32	10.83	4.44	Tributary of Buffalo Creek
Category Totals:	27.32	10.83	4.44	
Hydrologic Unit Totals:	27.32	10.83	4.44	

Hydrologic Unit: L53

Category: C

Type:	Drainage Area Treated (Acres)	Impervious Area Treated (Acres)	Disturbed Area (Acres)	Stream Name:
Extended Detention Basin	15.6	2.423	5.2	
Category Totals:	15.6	2.423	5.2	
Hydrologic Unit Totals:	15.6	2.423	5.2	

Hydrologic Unit: L54

Category: E

Type:	Drainage Area Treated (Acres)	Impervious Area Treated (Acres)	Disturbed Area (Acres)	Stream Name:
Manufactured (Filtering) BMP	20	1.54	0	Jones Creek

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Category Totals:

20

1.54

0

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Hydrologic Unit Totals:

20

1.54

0

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**Chesapeake Bay  
Watershed**

	Total Acres Treated:	Total Impervious acres treated
BMP Category A	216.17	15.1
BMP Category B	597.835	139.664
BMP Category C	432.01	115.02
BMP Category E	16.7	6.85
<b>Watershed Totals</b>	<b>1262.715</b>	<b>276.634</b>

**Southern Rivers  
Watershed**

	Total Acres Treated:	Total Impervious acres treated
BMP Category C	6.2	1
<b>Watershed Totals</b>	<b>6.2</b>	<b>1</b>

**Southern Rivers Albemarle & Currituck Sounds  
Watershed**

	Total Acres Treated:	Total Impervious acres treated
BMP Category C	42.92	13.253
BMP Category E	20	1.54
<b>Watershed Totals</b>	<b>62.92</b>	<b>14.793</b>

**Virginia Statewide Totals**

Total Acres Treated:	Total Impervious Acres Treated
<b>1331.835</b>	<b>292.427</b>