

**Fairfax County, VA**

**MS4 VPDES Permit No. 0088587**

**Stormwater Management Program**

**March 24, 2015**



## Table of Contents

<b>Introduction</b> .....	<b>1</b>
<b>Stormwater Management Program</b> .....	<b>1</b>
A. Structural and Source Controls .....	1
B. Areas of New Development and Significant Redevelopment .....	6
C. Roadways .....	12
D. Floodplain Management and Retrofitting .....	13
E. Pesticide, Herbicide, and Fertilizer Application .....	16
F. Illicit Discharges and Improper Disposal .....	18
G. Spill Prevention and Response .....	21
H. Industrial & High Risk Runoff .....	23
I. Construction Site Runoff .....	27
J. Storm Sewer Infrastructure Management .....	30
K. Public Education .....	32
L. Monitoring Programs .....	37
<b>Summary of Proposed Changes to Stormwater Management Program</b> .....	<b>40</b>
Structural and Source Controls .....	40
Areas of New Development and Significant Redevelopment .....	40
Floodplain Management and Retrofitting .....	40
Illicit Discharge and Improper Disposal .....	40
Industrial & High Risk Runoff .....	40
Construction Site Runoff .....	40
Monitoring Programs .....	41
<b>Appendix A: Glossary of Acronyms</b> .....	<b>A-1</b>
<b>Appendix B: Stormwater Program Summary Tables</b> .....	<b>B-1</b>
Structural and Source Controls .....	B-1
Areas of New Development and Significant Redevelopment .....	B-3
Roadways .....	B-4
Floodplain Management and Retrofitting .....	B-5
Pesticide, Herbicide, and Fertilizer Application .....	B-6
Illicit Discharge and Improper Disposal .....	B-7
Spill Prevention & Response .....	B-8
Industrial & High Risk Runoff .....	B-9
Construction Site Runoff .....	B-10
Storm Sewer Infrastructure Management .....	B-12
Public Education .....	B-13
Monitoring Programs .....	B-15



## List of Tables

Table A.1: Inspection Frequency by Type of Facility .....	2
Table A.2: Maintenance Prioritization for County-Maintained Facilities .....	3
Table A.3: BMP Schedule for Structural and Source Controls.....	4
Table B: BMP Schedule for Areas of New Development and Significant Redevelopment .....	10
Table C: BMP Schedule for Roadways .....	12
Table D: BMP Schedule for Floodplain Management and Retrofitting .....	14
Table E: BMP Schedule for Pesticide, Herbicide, and Fertilizer Application .....	16
Table F: BMP Schedule for Illicit Discharge and Improper Disposal .....	19
Table G: BMP Schedule for Spill Prevention & Response .....	22
Table H: BMP Schedule for Industrial & High Risk Runoff.....	25
Table I: BMP Schedule for Construction Site Runoff .....	28
Table J: BMP Schedule for Storm Sewer Infrastructure Management.....	30
Table K: BMP Schedule for Public Education.....	34
Table L: BMP Schedule for Monitoring Programs.....	39



# Fairfax County, VA MS4 VPDES Permit No. 0088587 Stormwater Management Program

## Introduction

This document details the Virginia Pollutant Discharge Elimination System (VPDES) compliant stormwater management program for Fairfax County's Municipal Separate Storm Sewer System (MS4). The organization of the document follows the permit structure, with individual sections addressing each major component of the county's 2002 permit (VPDES Permit No. 0088587), which has been administratively continued pending permit reissuance since 2007. The county last submitted a program plan update in 2007, and that plan covered permit years one through five assuming that the permit would be renewed in 2007. The county's permit has not yet been reissued, and as a result this program plan update is a continuation of the previous approach and covers permit years six through ten. Each section provides background information on the program elements that are currently in place, as well as a table summarizing the proposed best management practices (BMPs), implementation schedules and responsible parties.

## Stormwater Management Program

### A. Structural and Source Controls

#### *Program Background*

The Maintenance and Stormwater Management Division (MSMD) of the Fairfax County Department of Public Works and Environmental Services (DPWES) inspects and maintains stormwater management (SWM) facilities on county property or within county easements. In addition, MSMD performs inspections of privately-owned and maintained SWM facilities within residential, commercial and industrial areas. Owners are provided a detailed inspection report documenting deficiencies and compliance deadlines.

The types of facilities found within the county's public and private inventories include: bioretention facilities, constructed wetlands, dry swales, extended detention ponds, enhanced extended detention ponds, filtering practices, grass channels, infiltration trenches, manufactured best management practices (BMPs), permeable pavement, rainwater harvesting, reforestation, sheet flow treatment, rooftop disconnection, underground detention, vegetated roofs, wet ponds, dry ponds (peak shavers), parking lot detention and rooftop detention facilities.

#### County-Maintained Stormwater Management Facilities

As of December 31, 2014, there were 1,749 SWM facilities maintained by the county. This includes 1,293 non-regional dry ponds, 56 regional ponds, 81 underground detention facilities, 43 infiltration trenches, 13 wet ponds, 190 bioretention facilities



(includes tree box filters or urban bioretention), eight manufactured BMPs, five vegetated roofs, 23 pervious pavement facilities, 18 reforested areas, five sand filters, one rooftop detention facility and ten vegetated swales. Most of these facilities are privately-owned and county-maintained.

Inspection frequency of county-maintained SWM facilities within the inventory is dependent on the type of facility. When deficiencies are identified by inspection personnel, MSMD staff ensures that the issues are resolved appropriately. Table A.1 shows the inspection frequency by type of facility.

**Table A.1: Inspection Frequency by Type of Facility**

TYPE OF FACILITY	INSPECTION FREQUENCY
Regional Pond	Annual
Non-Regional Pond	Every Other Year
Other (Non-Pond)	Annual

MSMD performs routine maintenance on ponds, bioretention facilities, vegetated roofs and permeable pavers within the public inventory. Depending on the type and age of the facility, maintenance is performed from once up to five times per year. In addition to the scheduled inspection, and to ensure overall program effectiveness, an inspection is conducted during each routine maintenance activity for bioretention facilities, vegetated roofs and permeable pavers. When deficiencies are identified by maintenance personnel, follow-up investigations are coordinated with MSMD staff to ensure that the issues are resolved appropriately.

Privately-Maintained Stormwater Management Facilities

Before a privately-maintained facility can be constructed in the county, a private maintenance agreement (PMA) is required to be executed and recorded in the land records of the county. Not all privately-owned and maintained facilities in the county have PMAs, due to a period in the 1980s when this requirement was not in place. The PMA gives the county the legal authority to inspect the facility and requires that the facility be maintained in good working condition. In addition to the inventory of county-maintained facilities described above, as of December 31, 2014, there were 3,825 privately-owned and maintained facilities in the inventory. This includes 307 wet ponds, 535 dry ponds, 219 sand filters, 163 manufactured BMPs, 948 infiltration trenches, 456 roof top detention areas, 49 parking lot detention areas, 532 underground detention facilities, one fore-bay, one vegetated roof, five pervious pavement facilities, 597 bioretention facilities (includes tree box filters or urban bioretention), nine vegetated swales and two constructed wetlands.

Private facilities are routinely scheduled for inspection by an engineering firm under contract with the county or by in-house staff, with the goal of inspecting each privately-maintained facility at least once every five years. A detailed inspection report, including photographs, plans and a geographic information system (GIS) map, is provided to the owner(s) upon completion of each inspection. The report informs the owner(s) of any maintenance deficiencies observed during the inspection and provides a timeline for addressing deficiencies. Education of owner/operators of SWM facilities continues to be effective in achieving the desired level of service for these facilities.



State-Regulated County-Maintained Dams

As of December 31, 2014, there were 20 state-regulated dams (17 high hazard and three low hazard) operated and maintained in accordance with the Virginia Dam Safety Act and Dam Safety Impounding Structure Regulations. Six of these dams were built by the county in cooperation with the Natural Resources Conservation Service (NRCS) and the Northern Virginia Soil and Water Conservation District (NVSWCD) as authorized by Public Law 83-566. In accordance with Virginia Department of Conservation and Recreation (DCR) and NRCS requirements, county professional engineering staff and/or contracted engineering firms with expertise in dam design and construction perform annual inspections of all of these facilities to identify any safety or operational items in need of corrective action. Based on inspection findings and other less formal assessments, work is scheduled to correct deficiencies and address maintenance items prior to the next annual inspection. Critical items such as the stability of the dam embankment and proper functioning of the facility are addressed on a priority basis. Routine items such as mowing are accomplished on a scheduled basis, currently five times per year. Each facility is reevaluated to address current DCR design standards as operation and maintenance certificates are renewed.

Maintenance Scheduling

During inspections, MSMD and their contractors identify any necessary non-routine maintenance work. Each inspection form is tailored to the type of facility being inspected and has a standardized prioritization process. Table A.2 shows how MSMD prioritizes and schedules this work for all county-maintained facilities.

**Table A.2: Maintenance Prioritization for County-Maintained Facilities**

<b>ASSESSED CONDITION</b>	<b>PRIORITY</b>	<b>TARGETED RESPONSE TIME</b>
Fair / Good / Excellent	N/A	N/A
Poor	3	1 to 2 years
Failed – Critical and Non-Emergency	2	2 weeks to 1 year
Failed – Emergency (house flooding, structural endangerment, roadway flooding)	1	Immediate to 2 weeks

During the process of maintenance, required work may move to a lower priority. For example, a Priority 1 issue can be downgraded to Priority 2 if a short term solution, such as stabilizing a cave-in, can be implemented, allowing time for the design of a longer-term structural solution. In other instances the targeted response time may not be met due to factors outside of the county’s control, such as land ownership affecting easements and access, facilities that need to be re-designed, and weather events. In all instances, the county will initiate measures to ensure public safety and take action to correct critical deficiencies in a timely manner.

***BMPs for Permit Years 6-10***

To meet the requirement of the VPDES permit, MSMD will continue to provide a maintenance program based on the above protocols for SWM facilities in the county. The specific BMPs for each permit year (PY) are presented in Table A3 below.



**Table A.3: BMP Schedule for Structural and Source Controls**

<b>BMP</b>	<b>PY6</b>	<b>PY7</b>	<b>PY8</b>	<b>PY9</b>	<b>PY10</b>	<b>DESCRIPTION</b>	<b>RESPONSIBLE PARTY</b>
1	X	X	X	X	X	Inspect inventoried county-maintained SWM facilities at least once every two years – report number of facilities inspected in annual reports.	Director, MSMD, DPWES
2	X	X	X	X	X	Inspect inventoried state-regulated dams at least once per year – report number of dams inspected in annual reports.	Director, MSMD, DPWES
3	X	X	X	X	X	Initiate maintenance on critical deficiencies – report number of work orders in annual reports.	Director, MSMD, DPWES
4	X	X	X	X	X	Require long-term responsibility for and maintenance of all new privately-maintained SWM facilities constructed in the county through PMAs or other enforceable mechanisms that address future maintenance.	Director, Director, Code Development & Compliance Division (CDCD), DPWES
5	X	X	X	X	X	Inspect inventoried privately-maintained SWM facilities with executed and recorded PMAs at least once every five years and send physical inspection reports to the facility owner(s) – report number of facilities inspected in annual reports.	Director, MSMD, DPWES
6	X	X	X	X	X	Maintain inventory of Fairfax County Park Authority (FCPA) SWM facilities.	Director, MSMD, DPWES



BMP	PY6	PY7	PY8	PY9	PY10	DESCRIPTION	RESPONSIBLE PARTY
7	X	X	X	X	X	Maintain tracking mechanism for newly-installed public and private SWM facilities to include: <ul style="list-style-type: none"> <li>• Facility Type,</li> <li>• Acres Treated,</li> <li>• Date Brought On Line (MMYYYY),</li> <li>• Receiving Waters,</li> <li>• VAHU6 Code, and</li> <li>• Maintenance Agreement (Y/N).</li> </ul>	Director, Director, CDCD, DPWES  Director, MSMD, DPWES
8	X	X	X	X	X	Track the above information for newly-installed public and private SWM facilities.	Director, Site Development and Inspection Division (SDID), DPWES  Director, MSMD, DPWES

**Governing Policy**

- *Storm drainage and stormwater management easements:* Stormwater management infrastructure owned and/or operated by the county is located in county storm drainage and stormwater management easements recorded in the land records of the county. These easements provide the county with access to private property in order to perform inspections and/or maintenance of county stormwater management infrastructure.
- *Private Maintenance Agreements:* PMAs for SWM facilities are legal agreements executed during the plan review process and recorded in the land records of the county. These agreements provide the county with access to private property to perform inspections and require the facility owner to perform any necessary maintenance.
- *Virginia Dam Safety Act (§10.1-604 et seq.)*
- *Virginia Dam Safety Impounding Structure Regulations (4VAC50-20-10 et seq.)*



## **B. Areas of New Development and Significant Redevelopment**

### ***Program Background***

The county uses a number of planning procedures and regulations to reduce discharges of pollutants from areas of new development and significant redevelopment.

### Comprehensive Plan

The Fairfax County Comprehensive Plan is a dynamic document which is actively used by the Board of Supervisors (BOS), the Planning Commission, the Board of Zoning Appeals, county staff, and the public to guide decisions about the built and natural environment, as well as the conservation of cultural and heritage resources. It is important to note that the Comprehensive Plan provides policy guidance to both public and private initiatives. It is also a guide for county staff and the public to use in the planning process.

The Comprehensive Plan is reviewed and amended through an amendment work program called Fairfax Forward. The process focuses on a geographical area for review and study while seeking public participation and stakeholder collaboration in development and adoption of Comprehensive Plan amendments. The Comprehensive Plan consists of the Policy Plan and four Area Plans which are described below.

The Policy Plan contains countywide objectives and policies relating to the BOS' goals for Fairfax County. This hierarchy of policy guides decision-making for countywide, area, and site-specific issues. The Policy Plan is used to provide direction for the Area Plans and guide existing implementation mechanisms (i.e., provide direction for evaluation of zoning proposals).

The Area Plans are key elements for implementing the direction from the Policy Plan to the more detailed Planning Districts and Community Planning Sectors, both during the Area Plan update process and during the development review process. Existing conditions and issues applicable to the immediate area around the subject site are also considered. Community attention and participation are inherent in both the Area Plan update and zoning processes because both directly affect residents and the business community.

On November 15, 2004, the BOS adopted an amendment to the Comprehensive Plan pursuant to the comprehensive planning requirements of Virginia's Chesapeake Bay Preservation Act and Chesapeake Bay Preservation Area Designation and Management Regulations. Included in the amendment were revisions and additions to Comprehensive Plan text and policies as well as the incorporation into the plan of a "Chesapeake Bay Supplement." The amendment satisfied the specific requirements identified by the state while more comprehensively addressing water resource conditions, issues, policies, regulations, and initiatives in support of the county's commitment to the regional Chesapeake Bay Program, in furtherance of the BOS' "Environmental Excellence 20-year Vision Plan," and in support of other environmental and open-space goals. The supplement presents information regarding water quality factors, water pollution sources, water quality conditions, and shoreline conditions in the county within the context of the county's land use and its water quality policies, regulations, and initiatives. The supplement culminates in an analysis and series of recommendations addressing water



pollution sources, infill development, redevelopment, shoreline erosion control, and shoreline access.

The Environmental Quality Corridor (EQC) policy, as found in the Environment section of the Policy Plan volume of the county's Comprehensive Plan, does not directly address stormwater discharges; however, it is particularly relevant to the county's overall water quality management program because it serves to identify, protect, and, in some cases, restore environmentally-sensitive resources. Specifically, the EQC policy recommends the preservation and restoration of areas including floodplains, steep slopes (slope gradients of 15 percent or greater) adjacent to streams or floodplains, wetlands connected to stream valleys, minimum stream buffers (variable in width depending on topography), and sensitive habitat areas. While there is no county regulation requiring EQC protection (resource protection area and floodplain provisions in the county code protect many, but not all, EQC areas), the application of the EQC policy during the zoning process has been effective in protecting and, in some cases, restoring environmentally sensitive areas.

The Comprehensive Plan also contains a series of policy statements addressing water quality and stream protection. This section of the plan was amended through 2013 to provide explicit support for better site design and low impact development measures, and opportunities to implement such measures are explored during the zoning process. In a number of cases, staff has negotiated successfully for measures such as reductions in proposed impervious cover and the provision of low impact development measures that will serve to reduce stormwater discharges.

The Comprehensive Plan is a guide that is applied to the review of development proposals for which the county has the discretion to approve or deny. Specifically, the county considers rezoning, special exception and special permit applications within the context of how well they comport with elements of the Comprehensive Plan and zoning/county code requirements. County staff makes recommendations based on plan guidance on all zoning applications and negotiates with applicants for commitments that will further Comprehensive Plan goals, objectives, and policies. However, "by right" development that does not require zoning approval (e.g. rezoning, special exception, special permit or variance approval) is not subject to this review but must still comply with the other development requirements in the county code, including the Zoning Ordinance and the Public Facilities Manual (PFM).

#### Capital Improvement Program

This document is a guide toward the efficient and effective provision of public facilities. The Capital Improvement Program (CIP) document is published annually and proposes the development, modernization or replacement of physical public infrastructure over a multi-year period. The CIP shows the arrangement of projects in a sequential order based on a schedule of priorities. The CIP also provides the estimated cost and anticipated method of financing for each project.

Programming capital facilities over time promotes sound use of the county's financial resources and assists in the coordination of public and private development. In addition, the programming process is valuable as a means of coordinating among county agencies to avoid duplication of efforts and to take advantage of joint planning and



development of facilities where possible. By looking beyond year to year budgeting to project what, where, when, and how capital investments should be made, capital programming enables public bodies to maintain an effective level of service to the present and future population. The CIP is a tool supporting implementation of the public facilities element of the Comprehensive Plan.

Although the Policy Plan presents a projection of types of facilities and approximate measures to determine their numbers, timing of facility construction is dependent upon a number of variables. For example, in addition to the CIP, projects are evaluated on an annual basis through the county budget process to determine viability in light of fiscal constraints. Additionally, facilities proposed now may not be necessary in the future due to any number of factors, such as the provision of services through the private sector or changes in federal policy and funding.

#### Subdivision Control Ordinance

The Subdivision Control Ordinance is the basic tool for controlling the subdivision of land. It contains the regulations for dividing parcels of land into lots of any size less than five acres and for the provision of public facilities, if required, to serve the lots so formed. Lots to be developed must conform to applicable zoning regulations.

#### Zoning Ordinance

The Zoning Ordinance and its accompanying map(s) prescribe both the size (intensity and bulk regulations) of lots and the uses which may be placed on the property. All property in the county is mapped to a certain zoning district. The Zoning Ordinance Map, therefore, is a primary means by which the use and intensity for specific land use recommendations of the Comprehensive Plan are implemented during the zoning process. An important component of the rezoning process is the proffer system, which enables a property owner to voluntarily commit to conditions that supplement the Zoning Ordinance and ensure conformance with the Comprehensive Plan.

#### Chesapeake Bay Preservation Ordinance

The Chesapeake Bay Preservation Ordinance was adopted by the BOS on March 22, 1993, and became effective July 1, 1993. This ordinance protects certain areas along stream corridors, designated as Resource Protection Areas (RPAs), from most development and requires that the remaining areas outside RPAs be designated as Resource Management Areas (RMAs). Performance criteria have been established that require water quality control measures designed to prevent a net increase in non-point source pollution from new development, based on average land cover conditions.

The Chesapeake Bay Preservation Ordinance has been amended several times since its initial adoption in 1993. A particularly noteworthy amendment was adopted on July 7, 2003, and became effective on November 18, 2003. This amendment was adopted to comply with changes to the Chesapeake Bay Preservation Area Designation and Management Regulations and designated RPAs along all perennial streams, including many that were not previously so designated. The amendment also included: 1) changes to the performance criteria for development and redevelopment in RPAs and RMAs; 2) changes in the information to be provided with plans of development in applications for construction permits; and 3) changes to the procedures and criteria for the granting of exceptions to the requirements of the Chesapeake Bay Preservation Ordinance.



Revisions to the Chesapeake Bay Preservation Areas were adopted by the BOS on July 11 and December 5 2005 and again on September 25, 2006. The revisions included corrections to the buffer components of RPAs and the refinement of RPA designations based on an extensive quality control effort that was pursued subsequent to the initial mapping of perennial streams throughout the county.

An additional noteworthy amendment to the Chesapeake Bay Preservation Ordinance was adopted on January 28, 2014, and became effective on July 1, 2014. This amendment was adopted to reflect changes to the authority and mandates of the Virginia Stormwater Management Program (VSMP) Regulation and update references to the Code of Virginia.

The DPWES enforces compliance with the Chesapeake Bay Preservation Ordinance through the development review and inspection process. This process assures that the development plans address the requirements of the ordinance and are constructed as approved. Civil and criminal penalties are available to address violations.

#### Stormwater Management Ordinance

The Stormwater Management Ordinance was adopted by the BOS on January 28, 2014, and became effective July 1, 2014. This ordinance establishes a local stormwater management program to protect property, state waters, stream channels, and other natural resources from the potential harm of illicit discharges and unmanaged stormwater. Provisions established in the ordinance are: 1) criteria for land-disturbing activities, including monitoring, reporting and inspections, stormwater pollution prevention plan requirements, stormwater management plan review, and long-term maintenance requirements; 2) fees for land disturbing permits; 3) technical requirements for water quality and water quantity for development; including design criteria requirements; 4) technical criteria for grandfathered projects; and 5) prohibition of illicit discharges to the storm sewer system and state waters.

#### Public Facilities Manual

The PFM sets forth the guidelines which govern the design of all facilities which must be constructed to serve new development. The Zoning Ordinance, Subdivision Ordinance and Stormwater Management Ordinance all make specific reference to the requirements of the PFM. Chapters 6 and 12 of the PFM were updated in conjunction with the adoption of the Stormwater Management Ordinance to reflect water quality controls, adequate outfall, detention, maintenance of SWM facilities, and replanting of disturbed areas.

#### ***BMPs for Permit Years 6-10***

To meet the requirement of the VPDES permit, the county will continue its planning and review efforts to reduce discharges of pollutants from areas of new development and significant redevelopment. The specific BMPs for each permit year (PY) are presented in Table B.



**Table B: BMP Schedule for Areas of New Development and Significant Redevelopment**

BMP	PY6	PY7	PY8	PY9	PY10	DESCRIPTION	RESPONSIBLE PARTY
1	X	X	X	X	X	Review rezoning applications, special exceptions and amendments, and special permits for environmental considerations related to the Comprehensive Plan – report number of rezoning applications, special exceptions and amendments, and special permits in annual reports.	Director, Planning Division, Department of Planning and Zoning (DPZ)  Director, Zoning Evaluation Division, DPZ
2	X	X	X	X	X	Encourage the use of environmentally sensitive design and low impact development principles and practices – report on methods used to encourage these practices.	Director, Planning Division, DPZ  Director, Zoning Evaluation Division, DPZ
3	X	X	X	X	X	Implement and enforce the county’s Chesapeake Bay Preservation Ordinance through the plan review process – report as part of special exceptions and amendments and special permits under BMP 1.	Director, SDID, DPWES
4	X	X	X	X	X	Strive to maintain a consistent Chesapeake Bay Preservation Program with the Virginia Department of Environmental Quality (DEQ) – report any audits and any changes made as the result of an audit.	Director, CDCD, DPWES
5	X	X	X	X	X	Implement a stormwater management program consistent with the Virginia Stormwater Management Act and VSMP Regulations.	Director, CDCD, DPWES



### **Governing Policy**

- *Fairfax County Comprehensive Plan*: Provides policy guidance for decision-making about the built and natural environment throughout the county. This includes extensive environment and environmental resources sections that provide policy guidance for water resources.
- *Subdivision Control Ordinance – Chapter 101 of Fairfax County Code*: Provides conditions for design, dedication, improvement and restrictive use of land so as to conform to the adopted Comprehensive Plan.
- *Zoning Ordinance – Chapter 112 of Fairfax County Code*: Provides regulatory language and accompanying map(s) to prescribe both the size (intensity and bulk regulations) of lots and the uses which may be placed on the property.
- *Chesapeake Bay Preservation Ordinance – Chapter 118 of Fairfax County Code*: Regulates land use and development in resource protection and management areas, as required by the Chesapeake Bay Preservation Act (§62.1-44.15:67 et seq.) This includes establishing buffers, specific requirements for land disturbing activities exceeding 2,500 square feet, and water quality impact assessments.
- *Stormwater Management Ordinance – Chapter 124 of Fairfax County Code*: Provides conditions for administration of a local Virginia Stormwater Management Program (VSMP) including criteria for regulated land disturbing activities, fees, post-construction stormwater requirements, violations and penalties.
- *Fairfax County Public Facilities Manual (PFM)*: Provides guidelines which govern the design of all facilities which must be constructed to serve new development.
- *Virginia’s Chesapeake Bay Preservation Act (§62.1-44.15:67 et seq.)*
- *Virginia’s Chesapeake Bay Preservation Area Designation and Management Regulations (9VAC25-830-10 et seq.)*
- *Virginia Stormwater Management Act (§62.1-44.15:24 et seq.)*
- *Virginia Stormwater Management Program Regulations (9VAC25-870 et seq.)*



**C. Roadways**

***Program Background***

Fairfax County is responsible for maintaining several miles of discontinuous road segments, many of which are unpaved. The majority of public roads in the county (interstate, primary, secondary, and residential) are maintained and operated by the Virginia Department of Transportation (VDOT), which is covered by a separate Phase II MS4 permit. The county’s street maintenance program is an interim program designed to provide essential maintenance, pending acceptance of the road segment into Virginia’s Secondary Road System. The following commitments were made under the first two permit cycles:

- Fairfax County will maintain the streets it operates and maintains in a manner to minimize the discharge of pollutants.
- Fairfax County will continue to conduct street sweeping in parking lots and other paved areas associated with county facilities where chemicals are applied.
- Fairfax County currently uses sand as an abrasive and calcium chloride or rock salt for deicing roadways. The county has changed from calcium chloride to magnesium chloride for deicing walkways; however, this change is not feasible for roadways where safety is the first priority. These materials will be stored in a covered area and will remain covered from precipitation until application.
- Good housekeeping and pollution prevention practices are employed during roadway maintenance.

The county currently operates and maintains parking lots associated with county facilities (such as government centers, libraries, fire stations, police stations, health centers, bus transit facilities, park and ride lots, commuter rail stations, public housing facilities, and staffed park locations) and several miles of discontinuous road segments.

***BMPs for Permit Years 6-10***

To meet the requirement of the VPDES permit, the county will continue to provide a maintenance program for parking lots and streets in the county’s control. The specific BMPs for each permit year (PY) are presented in Table C.

**Table C: BMP Schedule for Roadways**

<b>BMP</b>	<b>PY6</b>	<b>PY7</b>	<b>PY8</b>	<b>PY9</b>	<b>PY10</b>	<b>DESCRIPTION</b>	<b>RESPONSIBLE PARTY</b>
<b>1</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	Conduct street sweeping in county-owned public parking lots where chemicals are applied.	Director, MSMD, DPWES
<b>2</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	Employ good housekeeping / pollution prevention practices at material storage facilities where deicing materials are stored.	Director, MSMD, DPWES



## **D. Floodplain Management and Retrofitting**

### ***Floodplain Management***

The county has existing floodplain management and adequate outfall policies that strive to improve water quality by ensuring that receiving channels and streams are adequate to receive flow from proposed development, thus minimizing downstream erosion. The county implements some flood management projects to relieve house and yard flooding. These small projects generally involve construction of flood walls or replacement or repair of storm sewer pipes. Proposed projects are reviewed for impacts on floodplains and receiving waters. Section 6-0701.1 of the PFM states that:

*In the interpretation of Part 9 of Article 2 of the Zoning Ordinance and in recognition of the County's desire to participate in the National Flood Insurance Program, it is the intent of § 6-0000 et seq. that the following goals be met:*

- A. The preservation of the hydraulic and flood carrying capacity within the altered or relocated portion of the natural channel of any adopted floodplain;*
- B. The preservation of the storage characteristics of floodplains, and*
- C. The preservation of the natural environment.*

Land disturbing activities are also reviewed for compliance with the channel protection and flood protection requirements of the Stormwater Management Ordinance and PFM (adequate drainage). The requirements for adequate drainage from a land disturbing activity include the extent of review and demonstration of no adverse impact with a proportional improvement. Section 6-0201 of the PFM states that:

- 1. In order to protect and conserve the land and water resources of this County for the use and benefit of the public, measures for the adequate drainage of surface waters shall be taken and facilities provided in connection with all land development activities. (See also § 2-602 of the Zoning Ordinance).*
- 2. Adequate drainage of surface waters means the effective conveyance of storm and other surface waters through and from the development site and the discharge of such waters into a natural watercourse, i.e., a stream with a defined channel (bed and banks), or man-made drainage facility of sufficient capacity without adverse impact upon the land over which the waters are conveyed or upon the watercourse or facility into which such waters are discharged. (See § 6-0202 et seq.)*
- 3. The provision of the necessary onsite and offsite easements to accomplish this also shall be required. These are to include sufficient easement extensions to property lines to permit future development reasonable access to drainage ways or drainage facilities for connections.*

### ***Retrofitting***

Stormwater retrofit projects are implemented to mitigate individual house flooding, alleviate yard flooding, stabilize streams, rehabilitate dams and provide stormwater management through the construction of a range of practices from onsite low impact development facilities to regional detention ponds. All projects designed to address these problem areas take water quality impacts into consideration. Retrofits to existing



facilities are also implemented to improve water quality. These can include the use of shallow wetland marshes to enhance nutrient uptake and provide an increase in water absorption and transpiration. A secondary benefit of wetland marshes and naturally vegetated pond floors is the creation of habitat for wildlife.

**BMPs for Permit Years 6-10**

To meet the requirement of the VPDES permit, the county will continue its assessment of floodplain management projects and stormwater retrofit program. The specific BMPs for each permit year (PY) are presented in Table D.

**Table D: BMP Schedule for Floodplain Management and Retrofitting**

BMP	PY6	PY7	PY8	PY9	PY10	DESCRIPTION	RESPONSIBLE PARTY
1	X	X	X	X	X	Continue to review proposed projects for adherence to floodplain management and adequate outfall requirements.	Director, SDID, DPWES
2	X	X	X	X	X	When structural maintenance (e.g. dam repair) is required at a county-maintained facility, the facility will be evaluated for stormwater retrofit opportunities.	Director, MSMD, DPWES
3	X	X	X	X	X	Report status of watershed management planning effort in annual reports.	Director, Stormwater Planning Division (SWPD), DPWES
4	X	X	X	X	X	Evaluate retrofits identified in the watershed management planning process – report number of retrofit projects completed in annual reports.	Director, SWPD, DPWES

**Governing Policy**

- *Zoning Ordinance – Chapter 112 of Fairfax County Code:* Provides regulatory language and accompanying map(s) to prescribe both the size (intensity and bulk regulations) of lots and the uses which may be placed on the property.
- *Chesapeake Bay Preservation Ordinance – Chapter 118 of Fairfax County Code:* Regulates land use and development in resource protection and management areas, as required by the Chesapeake Bay Preservation Act (§62.1-44.15:67 et seq.) This includes establishing buffers, specific requirements for land disturbing activities exceeding 2,500 square feet, and water quality impact assessments.



- *Stormwater Management Ordinance – Chapter 124 of Fairfax County Code:* Provides conditions for administration of a local Virginia Stormwater Management Program (VSMP) including criteria for regulated land disturbing activities, fees, post-construction stormwater requirements, violations and penalties.
- *Fairfax County Public Facilities Manual (PFM) – Section 6:* Describes Policy and Requirements for Storm Drainage.



## E. Pesticide, Herbicide, and Fertilizer Application

### **Program Background**

Fairfax County committed to minimizing pesticide, herbicide and fertilizer use to reduce the potential environmental impacts of runoff containing these substances. Pesticide, herbicide, and fertilizer application is currently regulated by the Virginia Department of Agriculture and Consumer Services' (VDACS') Office of Pesticide Services and DCR's Nutrient Management Program through training, certification, and licensing.

In accordance with the VPDES permit requirement, the county submitted a Pesticide, Herbicide, and Fertilizer Application Program to DEQ for review on January 24, 2003. An application rate reduction report was generated, recommending that the county develop a countywide Nutrient Management Plan (NMP) and an Integrated Pest Management Plan (IPMP) for public rights-of-way, parks, and other municipal facilities.

These countywide plans are now being superseded by site-specific plans developed for applicable county lands where pesticides, herbicides and/or nutrients are applied. County personnel and private contractors develop and implement the plans in accordance with DCR's nutrient management guidelines, VDACS' guidelines, and the Virginia Pesticide Control Act (§ 3.2-3900 et seq.)

There are a number of programs run by the county aimed at educating the public about the proper use of pesticides, herbicides and fertilizers. The county has administered several programs through the Virginia Cooperative Extension, including *Integrated Pest Management*, *What Goes Down the Drain*, *Urban Citizens Guide to Storm Run-Off*.

### **BMPs for Permit Years 6-10**

To meet the requirement of the VPDES permit, the county will continue to provide a comprehensive program for application and management of pesticides, herbicides and fertilizers at county facilities. The specific BMPs for each permit year (PY) are presented in Table E.

**Table E: BMP Schedule for Pesticide, Herbicide, and Fertilizer Application**

<b>BMP</b>	<b>PY6</b>	<b>PY7</b>	<b>PY8</b>	<b>PY9</b>	<b>PY10</b>	<b>DESCRIPTION</b>	<b>RESPONSIBLE PARTY</b>
1	X	X	X	X	X	Continue development of NMPs for applicable county lands.	Director, SWPD, DPWES
2	X	X	X	X	X	Continue development of IPMPs for applicable county lands.	Director, SWPD, DPWES
3	X	X	X	X	X	Track and report acreage managed under NMPs and IPMPs in annual reports.	Director, SWPD, DPWES



BMP	PY6	PY7	PY8	PY9	PY10	DESCRIPTION	RESPONSIBLE PARTY
4	X	X	X	X	X	Encourage good housekeeping/pollution prevention measures in the application, storage, transport and disposal of pesticides, herbicides and fertilizers on municipal properties.	Director, SWPD, DPWES

**Governing Policy**

- *Virginia Pesticide Control Act (§3.2-3900 et seq.)*
- *Regulations Governing Pesticide Applicator Certification under Authority of Virginia Pesticide Control Act (2VAC5-685-10 et seq.)*
- *Nutrient Management Training and Certification Regulations (4VAC50-85)*



## **F. Illicit Discharges and Improper Disposal**

### ***Program Background***

Fairfax County enforces illicit discharges through the county's Fire Protection and Stormwater Management Ordinances. Article 9 of the Stormwater Management Ordinance addresses illicit discharges to state waters and the county's MS4 and is enforced by the SWPD. The Fire and Rescue Department's (FRD's) Fire and Hazardous Materials Investigative Services section enforces the Fire Protection Ordinance which includes police powers to investigate and prosecute certain offenses including those related to storage, use, and transportation of hazardous materials and hazardous waste, and environmental crimes.

Illegal dumping is addressed by the Health or Safety Menaces Ordinance. Procedural Memorandum No. 71-01, Illegal Dump Site Investigation, Response, and Cleanup, outlines the process of follow-up action for non-emergency incidents; illegal dumping; establishes action under the Health or Safety Menaces Ordinance; and provides referrals for action on complaints.

### ***Infiltration into Sanitary Sewers***

DPWES Land Development Services (LDS) oversees all new construction and conducts quality assurance inspections on all sanitary sewer mains, laterals and manholes. Air testing or water testing is required for all gravity sewer mains and laterals. All manholes must be water tested. Force mains must be certified by a professional engineer as having passed pressure testing appropriate for the given design and as specified on the approved construction plans. Prior to acceptance into Fairfax County's sanitary sewer system, all new sanitary sewer must also be inspected by the Wastewater Collection Division (WCD) of DPWES using closed circuit television (CCTV) equipment.

The WCD has an aggressive infiltration abatement program, which assures the continuing integrity of the county's sanitary sewer system, and includes the operation of full time metering stations linked to a central station that receives flow information every 15 minutes. There are additional portable stations which also record flow rates every 15 minutes. This extensive network of monitoring stations is linked to rain gauge stations, allowing detailed analysis of both dry and wet weather flows. Inspections are performed using CCTV equipment as needed to investigate identified problems.

Once problems in the sanitary sewer system are identified, rehabilitation techniques are employed to address them. One technique is the cured in place pipe (CIPP) method, whereby a resin-impregnated felt liner is installed and hardened within the host sanitary sewer pipe from manhole to manhole, ensuring years of additional system life, and inhibiting groundwater infiltration into the sanitary sewer system. Field crews in WCD also periodically inspect sanitary sewer crossings of streams throughout the county, further reducing the likelihood of exfiltration from, or infiltration of groundwater or surface water into, the sanitary sewer system.

The Sanitary Sewer Extension and Improvement Program (SSEIP) is administered by DPWES Capital Facilities (CAP). The purpose of this program is to provide sanitary sewer service to eligible areas that have been identified by the Fairfax County Health Department (FCHD) as having non-repairable, malfunctioning septic systems. Pollution



abatement and addressing public health considerations are achieved by providing sanitary sewer service to these areas.

The FCHD plays an active role in preventing the failure of septic systems by inspecting and ensuring that new systems are designed and installed according to code requirements, and by overseeing repairs to malfunctioning systems. Environmental Health Specialists present public awareness programs to county residents and mail notification letters to remind homeowners about the Chesapeake Bay Preservation Act requirements to perform septic tank pump-outs at least once every five years and to perform normal septic system maintenance. Other public outreach programs by the FCHD include preventative maintenance issues for alternative onsite sewage disposal systems that are becoming more widely used for new homes in the county.

***BMPs for Permit Years 6-10***

To meet the requirement of the VPDES permit, the county will continue to provide a comprehensive program to address illicit discharges and improper disposal. The specific BMPs for each permit year (PY) are presented in Table F.

**Table F: BMP Schedule for Illicit Discharge and Improper Disposal**

<b>BMP</b>	<b>PY6</b>	<b>PY7</b>	<b>PY8</b>	<b>PY9</b>	<b>PY10</b>	<b>DESCRIPTION</b>	<b>RESPONSIBLE PARTY</b>
1	X	X	X	X	X	Continue to enforce the prohibition of illicit discharges and improper disposal.	Director, SWPD, DPWES  Fire Marshal, Fire Prevention Division (FPD), FRD
2	X	X	X	X	X	Continue to inspect new construction and conduct continuous quality assurance inspections on sanitary sewer mains, laterals and manholes.	Director, WCD, DPWES  Director, SDID, DPWES
3	X	X	X	X	X	Continue to implement the infiltration abatement program.	Director, WCD, DPWES
4	X	X	X	X	X	Report miles of sanitary sewer inspected and rehabilitated in annual reports.	Director, WCD, DPWES
5	X	X	X	X	X	Continue to implement the SSEIP – report new sanitary sewer constructed in annual reports.	Director, Utilities Design & Construction Division (UDCD), DPWES



### **Governing Policy**

- *Health or Safety Menaces Ordinance – Chapter 46 of Fairfax County Code:* Addresses illegal dumping.
- *Fire Protection Ordinance – Chapter 62 of Fairfax County Code:* Includes police powers to investigate and prosecute certain offenses including those related to storage, use, and transportation of hazardous materials and hazardous waste, and environmental crimes.
- *Stormwater Management Ordinance – Chapter 124 of Fairfax County Code:* Provides conditions to protect the county's MS4 and state waters from illicit discharges.
- *Procedural Memorandum No. 71-01, Illegal Dump Site Investigation, Response, and Cleanup:* Outlines the process of follow-up action for non-emergency incidents; illegal dumping; and provides referrals for action on complaints.
- *Fairfax County Public Facilities Manual (PFM) – Section 10:* Provides design criteria for sanitary sewers and septic systems.



## **G. Spill Prevention and Response**

### ***Program Background***

The Hazardous Materials Response Team in the Fairfax County Fire Marshal's Office responds to reported incidents of hazardous material releases, spills and discharges in the county, regardless of whether the material has potential to enter the county's MS4, another MS4 such as VDOT's, or waters of the state. The county maintains Occupational Safety and Health Administration (OSHA) 1910.120 training for all firefighters, which includes spill response training, hazardous materials (HAZMAT) first responder certification, and state spill response training for the designated hazardous materials team. Currently, over 1,440 firefighters are OSHA 29 Code of Federal Regulations (CFR) 1910.120 (q) and National Fire Protection Association (NFPA) 472 trained. The full-time HAZMAT team has special training and an emergency vehicle designed to respond to spills. In addition to the full-time HAZMAT team, there are three satellite HAZMAT teams. The HAZMAT team has representation at the Metropolitan Washington Council of Governments (COG) level in developing regional response protocols for responding to hazardous materials emergencies in the COG region.

The Virginia Emergency Response Council appointed a Fairfax Joint Local Emergency Planning Committee (FJLEPC) that includes representation for Fairfax County, the city of Fairfax, and the towns of Vienna and Herndon. The FJLEPC Coordinator maintains a list of critical hazard facilities and all other facilities submitting Tier II reports under the Emergency Planning & Community Right to Know Act (EPCRA). The FJLEPC is responsible for maintaining a current spill response plan and for updating and distributing the Hazardous Materials Emergency Response Plan annually to county agencies that may respond to HAZMAT incidents or clean up. The main goal of the plan is to ensure that the county has policies and procedures in place in the event that a spill occurs. In addition to developing the spill response plan, the county updates and maintains facility data sheets for each private facility known to handle hazardous materials.

Additionally, businesses storing, using or processing HAZMAT in the county are required to obtain a Fire Prevention Code Permit (FPCP) when in excess of limits established by Fairfax County code amendments to the Statewide Fire Prevention Code. The Fire Inspections Branch issues the FPCP and periodically checks permit-holders for storage compliance. Hazardous Materials Management Plans (HMMPs) are required on a case-by-case basis by the fire inspector or as deemed necessary by the Hazardous Materials and Investigative Services (HMIS) Section. Spill Prevention, Control and Countermeasure (SPCC) Plan requirements are federally mandated items or are part of the HMMP if required by the Fire Prevention Division (FPD) Inspection Branch or the HMIS Section.

### ***BMPs for Permit Years 6-10***

To meet the requirement of the VPDES permit, the county will continue to provide a comprehensive program for spill prevention and response. The specific BMPs for each permit year (PY) are presented in Table G.



**Table G: BMP Schedule for Spill Prevention & Response**

BMP	PY6	PY7	PY8	PY9	PY10	DESCRIPTION	RESPONSIBLE PARTY
1	X	X	X	X	X	Maintain membership in the FJLEPC.	Fire Marshal, FPD, FRD
2	X	X	X	X	X	Maintain, track and annually report firefighter training/certification under OSHA 29 CFR 1910.120 (q) and NFPA 472.	Fire and Rescue Academy Training Division, FRD
3	X	X	X	X	X	Continue to issue and enforce FPCPs.	Fire Marshal, FPD, FRD
4	X	X	X	X	X	Update the Hazardous Material Emergency Response Plan annually.	Fire Marshal, FPD, FRD

**Governing Policy**

- *Hazardous Materials Management Plan (HMMP)*: Provided on a case-by-case basis for hazardous occupancies, as mandated by the FPD.
- *OSHA 29 CFR 1910.120 (q)*: Requires an emergency response program to hazardous substance releases.
- *NFPA 472*: Provides standards on the Professional Competence of Responders to Hazardous Materials Incidents.
- *Virginia Emergency Response Council, Local Emergency Planning Committee Guidelines*: Requires Local Emergency Planning Committees to develop plans that identify facilities subject to emergency planning requirements, provide methods and procedures to be followed in the event of a chemical release, establish evacuation plans, training programs and many other emergency preparedness guidelines.
- *Fire Prevention Code Permit (FPCP) requirements, Fairfax County Code Section 62-2-7*: Establishes regulations for fire inspections prior to issuance of a residential or nonresidential use permit as required by State law.
- *Spill Prevention, Control and Countermeasure (SPCC) Plan requirements*: SPCC Plan requirements are federally mandated items or are part of the HMMP if required by the FPD Inspection Branch or the Hazardous Materials and Investigative Services Section. [40-CFR Chapter 1-§ 112.3]



## **H. Industrial & High Risk Runoff**

### ***Industrial & High Risk Runoff Inspection Program***

The county's Industrial & High Risk Runoff (IHRR) Program is implemented by the SWPD. The goal of the program is to identify, investigate and potentially monitor industrial and other high risk areas to determine if they are contributing a substantial pollutant loading to the county's MS4 and to refer them to DEQ for permitting as appropriate. The U.S. Environmental protection Agency (EPA) inspected the county's MS4 Program in 2011 and found that county IHRR inspectors did not identify sources of pollutants or assess management practices for controlling pollutants in discharges that may enter the county's MS4. The county implemented a number of program enhancements in response to EPA's findings, and in December 2014, EPA notified the county that the inspection findings had been addressed. The IHRR program enhancements were as follows:

- A team composed of several county agencies developed a draft standard operating procedure (SOP) to identify and control pollutants in stormwater discharges to the county's MS4 from IHRR facilities.
- A database of industrial and high risk facilities that have the potential to discharge to the county's MS4 was developed and is being used to prioritize inspections associated with the IHRR program. The database includes facility type, watershed, location, priority classification, contact information, existing permit information and proximity to an impaired waterway, and is geocoded so that all facilities have been mapped in a GIS layer.
- A spreadsheet was developed and is being used to track discharge monitoring reports (DMRs) that are submitted to the county from facilities holding VPDES permits for discharges of stormwater associated with industrial activity.
- As part of the fiscal year 2013 budget, the BOS approved the addition of two new positions for the purpose of conducting IHRR inspections which have since been filled.
- New educational materials are being developed to assist other county agencies with recognizing and reporting IHRR during their inspections.

The SWPD developed a new list of industrial and high risk facilities, as well as protocols, standardized forms and enforcement tools for the IHRR inspection program. As of December 31, 2014, the list includes 140 facilities that discharge to the county's MS4. Facilities are included in the inspection program based on the following definitions:

- Industrial Facility (as identified within the permit) – a municipal landfill; other treatment, storage, or disposal facility for municipal waste; a hazardous waste treatment, storage, disposal and recovery facility; a facility that is subject to EPCRA Title III, Section 313; a VPDES industrial stormwater permitted facility; an industrial stormwater facility granted no exposure certification by DEQ; and any other facility with a “storm water discharge associated with industrial activity,” as the term is defined in 40 CFR 122.26(b)(14), to the county's MS4; and



- High Risk Facility – any commercial or industrial facility that has caused a discharge that has contributed a significant pollutant loading to the county’s MS4 on a recurring basis.

Outfalls of these facilities are inspected at their point of connection to the county’s MS4. The county inspects non-VPDES-permitted industrial and high risk facilities where there is evidence of a significant pollutant loading entering the county’s MS4. Inspection procedures are outlined in procedural memorandum SWPD14-01 – Standard Operating Procedures for Industrial and High Risk Runoff (IHRR) Program MS4 Point of Connection and Facility Inspections.

The county requires facilities to eliminate significant pollutant loadings to the county’s MS4 as expeditiously as possible. Inspectors record initial findings on the IHRR facility inspection form and inform facility representatives verbally and/or in writing of discharges that must be addressed. Enforcement is conducted by issuing a Corrective Action Notice or a Notice of Violation.

### ***Municipal Industrial Facilities***

The county owns and operates facilities of an industrial nature that house vehicle maintenance activities, fueling depots, and material handling and storage areas. These facilities have coverage under the General VPDES Permit for Discharges of Storm Water Associated with Industrial Activity and are listed below.

- Fairfax County Division of Solid Waste Disposal and Resource Recovery
  - I-95 Landfill Complex, Permit No. VAR051076
  - I-66 Transfer Station, Permit No. VAR051074
- Fairfax County Department of Vehicle Services
  - Alban Maintenance Facility, Permit No. VAR051772
  - Jermantown Maintenance Facility, Permit No. VAR051770
  - Newington Maintenance Facility, Permit No. VAR051771
  - West Ox Road Maintenance Facility, Permit No. VAR051773
- Fairfax County Department of Transportation
  - Newington Connector Bus Yard, Permit No. VAR051047
- Fairfax County Wastewater Treatment Division
  - Noman M Cole Jr Pollution Control Plant, Permit No. VAR051411

### ***BMPs for Permit Years 6-10***

To meet the requirement of the VPDES permit, the county will continue to provide a comprehensive program to manage industrial and high risk runoff. The focus for this permit term will be conducting inspections of industrial and high risk facilities as identified, ensuring that county-owned industrial facilities obtain VPDES Industrial Stormwater General Permits where applicable, and implementing appropriate stormwater pollution prevention practices at those facilities. The specific BMPs for each permit year (PY) are presented in Table H.



**Table H: BMP Schedule for Industrial & High Risk Runoff**

BMP	PY6	PY7	PY8	PY9	PY10	DESCRIPTION	RESPONSIBLE PARTY
1	X	X	X	X	X	Continue current program for industrial and high risk runoff monitoring to identify and control pollutants in stormwater discharges to the county's MS4.	Director, SWPD, DPWES
2	X	X	X	X	X	Identify new industrial facilities discharging to the county's MS4 and refer owners to DEQ for permitting, as appropriate.	Director, SWPD, DPWES
3	X	X	X	X	X	Maintain an inventory of industrial and high risk facilities that discharge to the county's MS4.	Director, SWPD, DPWES
4	X	X	X	X	X	Maintain a master inventory of county industrial facilities.	Director, SWPD, DPWES
5	X	X	X	X	X	Ensure that appropriate stormwater pollution prevention measures are in place at county industrial facilities.	County Industrial Facility Managers
6		X	X	X	X	Track DMRs submitted to the county from facilities holding VPDES permits for discharges of stormwater associated with industrial activity.	Director, SWPD, DPWES
7		X	X	X	X	Develop educational materials to assist other county agencies with recognizing and reporting IHRR during their inspections.	Director, SWPD, DPWES

**Governing Policy**

- *Stormwater Management Ordinance – Chapter 124 of Fairfax County Code:* Prohibits illicit discharges to the county's MS4 and state waters and establishes Standards for inspections of industrial and commercial property discharging to the county's MS4.



- *General VPDES Permit for Discharges of Storm Water Associated with Industrial Activity (9VAC25-151 et seq.)*



## **I. Construction Site Runoff**

### ***Program Background***

The county's Erosion and Sediment Control (ESC) Program has been determined to be fully consistent with the requirements of the Virginia Erosion and Sediment Control Law and Regulations implemented by DEQ. The county's ESC Program requirements are outlined in detail the Erosion and Sedimentation Control Ordinance and in Chapter 11 of the PFM, and include procedures for plan review, plan approval, field inspections and enforcement.

EPA inspected the county's MS4 Program in 2011 and found that county construction site inspectors did not fully and accurately document their observations concerning E&S compliance or non-compliance, or any changes they required to ESC plans to address their inspection findings. While the Virginia Erosion and Sediment Control Handbook does not specify how inspections should be documented, the county implemented a number of program enhancements in response to EPA's findings, and in December 2014, EPA notified the county that the inspection findings had been addressed. The Construction Site Runoff program enhancements were as follows:

- The site inspection database (Site Inspections 2000 or SI2K) was updated to require an entry from the inspectors for location information and comments regarding compliance or noncompliance for ESC inspections.
- Chapter 2 of the Inspector's Handbook (SI2K User Manual) was updated to require documentation in SI2K of location information and comments regarding compliance or noncompliance.
- Chapter 4 of the Inspector's Handbook (Erosion and Sediment Control) was updated to require the following:
  - Documentation in SI2K of any verbal communications regarding ESC inspections.
  - Use of comments in SI2K to capture specific information regarding ESC inspections.
  - Revisions to the inspector's copy of the plan to reflect any minor changes in the ESC features made during construction. Major revisions currently require formal submission of a plan revision, and are reviewed by county engineering staff and appropriate outside agencies for compliance with state and local regulations.
- Annual training is conducted to ensure that the revisions to SI2K and the Inspector's Handbook are followed and result in a change in practice in the field.

### ***BMPs for Permit Years 6-10***

To meet the requirement of the VPDES permit, the county will continue its ESC Program, implement updates to SI2K and the Inspector's Handbook, and train inspectors. The specific BMPs for each permit year (PY) are presented in Table I.



**Table I: BMP Schedule for Construction Site Runoff**

BMP	PY6	PY7	PY8	PY9	PY10	DESCRIPTION	RESPONSIBLE PARTY
1	X	X	X	X	X	Continue the existing ESC program, including: <ul style="list-style-type: none"> <li>• Plan Review,</li> <li>• Inspection, and</li> <li>• Enforcement.</li> </ul> Report number of plans reviewed, inspections conducted and any enforcement measures in annual reports.	Director, SDID, DPWES
2	X	X	X	X	X	Strive to maintain a consistently rated ESC program with the DEQ – report any audit by DEQ and resulting program changes in annual reports.	Director, SDID, DPWES
3	X	X	X	X	X	Submit a monthly summary of approved plans to the DEQ, Northern Regional Office, that will include: <ul style="list-style-type: none"> <li>• Owner's Name,</li> <li>• Owner's Address,</li> <li>• Site Name,</li> <li>• Site Address, and</li> <li>• Disturbed Acreage.</li> </ul>	Director, SDID, DPWES
4	X	X	X	X	X	Maintain certified ESC inspectors and plan reviewers on staff.	Director, SDID, DPWES
5	X	X	X	X	X	Require Responsible Land Disturber Certification before issuing grading permits – report number of plans reviewed in annual reports.	Director, CDCD, DPWES
6	X	X	X	X	X	Recognize excellence in ESC design and implementation through the Land Conservation and Tree Preservation Awards program.	Director, LDS, DPWES



BMP	PY6	PY7	PY8	PY9	PY10	DESCRIPTION	RESPONSIBLE PARTY
7		X	X			Update the SI2K database to require location information and comments regarding compliance or noncompliance.	Director, SDID, DPWES
8		X	X			Update the Inspector's Handbook to require documentation in SI2K of location information, comments regarding compliance or noncompliance, and verbal communications regarding ESC inspections.	Director, SDID, DPWES
9				X	X	Conduct annual training for inspectors to ensure that revisions to SI2K and the Inspector's Handbook are followed.	Director, SDID, DPWES

**Governing Policy**

- *Erosion and Sedimentation Control Ordinance, Chapter 104 of Fairfax County Code:* This chapter was adopted “to conserve and protect the land, water, air, vegetation and other natural resources of Fairfax County; to alleviate erosion, siltation and other harmful effects of land-disturbing activities on neighboring land and streams, by ensuring that the owner of the property on which land-disturbing activities are to be carried out provides adequate controls of erosion and sedimentation; and takes necessary measures to preserve and protect trees and other vegetation during all phases of any land-disturbing activity.”
- *Fairfax County Public Facilities Manual, Chapter 11:* Provides design and plan requirements for ESC.
- *Virginia Erosion & Sediment Control Law (§62.1-44.15:51 et seq.):* Provides the state requirements for Erosion and Sediment Control Programs.
- *Virginia Erosion and Sediment Control Law Regulations (9VAC25-840-10 et seq.)*
- *Virginia Erosion & Sediment Control Handbook, current edition:* Establishes minimum design and implementation standards for ESC measures in the effort to control erosion and sedimentation from land-disturbing activities in Virginia.



**J. Storm Sewer Infrastructure Management**

***Program Background***

A Storm Sewer Infrastructure Management Plan and Schedule was submitted to DEQ on July 24, 2002, in accordance with the requirements of the VPDES permit. The location of the storm drainage conveyance system was field verified on 436 tax map grids covering 399 square miles by MSMD staff. The effort identified storm sewer pipes, outfalls and associated appurtenant structures, and resulted in the development of a GIS layer which was completed in 2005. A GIS layer of county easements was developed in 2009 to verify the county's storm drainage conveyance inventory. The requirements in the 2002 plan have been fulfilled, and the infrastructure inventory is now continuously updated with new as-built plans and field verification of system components within identified easements in conjunction with condition assessments.

The county conducts routine inspections of the storm drainage system. When defining the condition of the system and determining corrective actions, MSMD staff distinguishes between deficiencies that are structural in nature and those that can be addressed through operations and maintenance activities. The county is developing a prioritization process that considers both the likelihood and consequences of storm drainage conveyance failure in determining the order in which deficiencies are addressed.

The county has an ongoing program to digitally video and physically inspect the storm sewer system. As part of this process, MSMD is developing GIS layers representing the results of these inspections and using the layers to develop a Physical Condition Assessment (PCA) layer for segments of each pipe and channel for use in prioritizing assets in most need of repair or rehabilitation. The PCA will identify the condition of, and assign a structural rating for, each pipe and channel segment in the inventory. Point repairs are also identified. Staff uses the structural rating to identify a proposed method of rehabilitation where needed.

***BMPs for Permit Years 6-10***

To meet the requirement of the VPDES permit, the county will continue its evaluation, repair, rehabilitation and renewal of its storm sewer infrastructure. The county's focus will be to refine the inventory, and to identify and perform maintenance on the system as well as provide asset renewal where needed. The specific BMPs for each permit year (PY) are presented in Table J.

**Table J: BMP Schedule for Storm Sewer Infrastructure Management**

<b>BMP</b>	<b>PY6</b>	<b>PY7</b>	<b>PY8</b>	<b>PY9</b>	<b>PY10</b>	<b>DESCRIPTION</b>	<b>RESPONSIBLE PARTY</b>
1	X	X	X	X	X	Continue on-going field verification and resulting updates of storm sewer GIS layer – report progress in annual reports.	Director, MSMD, DPWES



BMP	PY6	PY7	PY8	PY9	PY10	DESCRIPTION	RESPONSIBLE PARTY
2	X	X	X	X	X	Continue to update the storm sewer GIS layer with newly constructed storm sewer information – report progress in annual reports.	Director, MSMD, DPWES
3	X	X	X	X	X	Continue development of PCA GIS layer – report progress in annual reports.	Director, MSMD, DPWES
4	X	X	X	X	X	Continue repair, rehabilitation and renewal of storm sewer segments – report miles rehabilitated in annual reports.	Director, MSMD, DPWES

**Governing Policy**

- *Storm drainage and stormwater management easements:* Stormwater management infrastructure owned and/or operated by the county is located in county storm drainage and stormwater management easements recorded in the land records of the county. These easements provide the county with access to private property in order to perform inspections and/or maintenance of county stormwater management infrastructure.



## **K. Public Education**

### ***Program Background***

Public outreach and education are of foremost importance to environmentally sound stormwater management. They raise the level of awareness of the county at large with regard to existing stormwater problems and environmentally friendly solutions. The primary goal of public outreach and education is “pollution prevention.” A county resident who is aware of the impacts that his or her actions can have on the environment is more likely to change pollution-causing behaviors and to support environmental programs.

The county’s public education program raises awareness about stormwater challenges throughout the county and offers opportunities for residents to become involved in efforts to restore and protect local waterways, the Occoquan Reservoir, the Potomac River and the Chesapeake Bay. A number of county organizations contribute to the public education program including SWPD, DPWES Solid Waste Management Program (SWMP), FCPA and NVSWCD. County staff uses a variety of methods to provide public education on stormwater management and watershed basics including in-person presentations, print publications, television, radio and online resources.

### **Clean Water Partners**

In partnership with the Northern Virginia Regional Commission and surrounding jurisdictions, the county participates in stormwater education campaigns across various media outlets through the Clean Water Partners. The program selects a specific message each year, conveys that message through an advertising campaign and conducts a survey following the campaign to determine any changes in behavior.

### **Illicit Discharges**

The county participates in a variety of activities to educate residents about the importance of reporting and preventing illicit discharges. The county distributes brochures with contact information for reporting illicit discharges and maintains a Web page designed to help residents identify and report illicit discharges at:

[www.fairfaxcounty.gov/dpwes/stormwater/stuffinstream.htm](http://www.fairfaxcounty.gov/dpwes/stormwater/stuffinstream.htm)

The county’s Department of Code Compliance enforces zoning, property maintenance, building, blight, grass, fire and health codes all within in a single department and provides information on a range of topics as well as a process for residents to register complaints at:

[www.fairfaxcounty.gov/code/](http://www.fairfaxcounty.gov/code/)

The county also maintains a Web page that provides contact information for residents to report a range of environmental crimes including illicit discharges, erosion and sedimentation issues and health hazards at:

[www.fairfaxcounty.gov/living/environment/report-environmental-crimes.htm](http://www.fairfaxcounty.gov/living/environment/report-environmental-crimes.htm)

### **Exhibition/Educational Booths at Public Events**

The county hosts educational booths at several public events annually to raise awareness among residents about stormwater issues and to encourage behaviors that



positively impact watersheds. At these events, the county distributes a variety of educational materials concerning stormwater and prevention of stormwater pollution. The following list includes events the county has participated in as an exhibitor and/or environmental educator:

- Celebrate Fairfax
- Fall for Fairfax
- Fairfax County Earth Day/Arbor Day Celebration

#### Storm Drain Marking

The county and NVSWCD have forged a partnership whereby DPWES purchases storm drain markers and NVSWCD provides oversight and guidance for volunteers to carry out the community education and marking projects. The information and education program culminates with affixing a small plastic marker on the top of drains that reads “No Dumping, Drains to Stream” in both English and Spanish. The NVSWCD has the responsibility for guiding storm drain marking projects in the county and ensuring they adhere to NVSWCD and VDOT standards.

#### Used Oil and Hazardous Household Waste

The county manages two facilities where residents can properly dispose of Hazardous Household Waste (HHW) at no charge: the I-66 Transfer Station and the I-95 Landfill Complex. Both of these facilities have been operational since 1995; and they accept used motor oil, paint and lead-acid car batteries in addition to other HHW during regular business hours at no charge to county residents. The county also sponsors mobile HHW collection events at locations around the county.

The county also has a Web page dedicated to educating residents about HHW management; it includes directions to the facilities and hours of operation:

[www.fairfaxcounty.gov/dpwes/trash/disphhw.htm](http://www.fairfaxcounty.gov/dpwes/trash/disphhw.htm)

#### Violations of Environmental Regulations Pertaining to Land Development

The following Web page has been established that describes possible violations of the county’s environmental regulations pertaining to land development and how to report suspected violations:

[www.fairfaxcounty.gov/dpwes/sitedevelopment/land\\_dev\\_concerns.htm](http://www.fairfaxcounty.gov/dpwes/sitedevelopment/land_dev_concerns.htm)

A 24-hour hotline established by the Code Enforcement Branch of DPWES continues to be an effective means for citizens to report complaints about erosion and sedimentation.

#### Pesticide, Herbicide, and Fertilizer Application

The county distributes educational material on proper use of pesticides, herbicides and fertilizer, and on preventing nonpoint source fertilizer pollution. The county provides support to the NVSWCD, which provides educational services on the proper use of pesticides, herbicides, and fertilizer.

#### Floatables

The DPWES Stormwater staff, in partnership with numerous other local agencies, support the ongoing efforts to improve the water quality and habitat of local waterways



by participating in semiannual and annual watershed cleanups. Large-scale annual and/or semiannual events in which the county participates include:

- The Alice Ferguson Foundation’s Potomac Watershed Cleanup
- The Virginia Department of Conservation and Recreation’s Adopt-a-Stream Program
- The International Coastal Cleanup
- The Friends of the Occoquan’s Occoquan River Shoreline Cleanup
- Various “Friends of” Group Cleanups

The SWMP is a strong supporter of the education of the community regarding recycling and the prevention of litter. This educational effort assists the county in protecting the surface water by preventing litter and by emphasizing the benefits of recycling.

***BMPs for Permit Years 6-10***

To meet the requirement of the VPDES permit, the county will continue its public education program. The specific BMPs for each permit year (PY) are presented in Table K.

**Table K: BMP Schedule for Public Education**

<b>BMP</b>	<b>PY6</b>	<b>PY7</b>	<b>PY8</b>	<b>PY9</b>	<b>PY10</b>	<b>DESCRIPTION</b>	<b>RESPONSIBLE PARTY</b>
<b>1</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	Maintain Web page to provide information about identification and reporting of illicit discharges.	Director, SWPD, DPWES
<b>2</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	Continue to provide support for storm drain marking activities in the county run by other organizations such as the NVSWCD – report number of markers installed in annual reports.	Director, SWPD, DPWES
<b>3</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	Continue to give presentations to community groups that include education on illicit discharges; proper use of pesticides, herbicides and fertilizer; HHW disposal; and litter prevention – report number of presentations in annual reports.	Director, SWPD, DPWES Director, SWMP, DPWES



BMP	PY6	PY7	PY8	PY9	PY10	DESCRIPTION	RESPONSIBLE PARTY
4	X	X	X	X	X	Continue to distribute educational materials on illicit discharges; proper use of pesticides, herbicides and fertilizer; HHW disposal; and litter prevention at community events– report number of events attended in annual reports.	Director, SWPD, DPWES  Director, SWMP, DPWES
5	X	X	X	X	X	Maintain Web page with information on used motor oil and HHW management.	Director, SWMP, DPWES
6	X	X	X	X	X	Maintain Web page and 24 hour hotline to report possible violations of the county’s environmental regulations pertaining to land development activities.	Director, LDS, DPWES
7	X	X	X	X	X	Continue to provide support to educational programs on illicit discharges; proper use of pesticides, herbicides and fertilizer; household hazardous waste disposal; and litter prevention provided by other organizations in the county such as the NVSWCD and Clean Fairfax – report support provided in annual reports.	Director, SWPD, DPWES

**Governing Policy**

- *Board of Supervisors’ Environmental Agenda:* The Environmental Agenda outlines the Board’s environmental plan related to growth and land use, air quality and transportation, water quality, solid waste, parks, trails, open space and environmental stewardship.
- *The Environmental Improvement Program (EIP):* The EIP supports the goals and objectives in the BOS’ Environmental Agenda. The EIP addresses both environmental project and policy needs by providing a framework for the County



Executive and the BOS to make decisions regarding environmental investment and project planning, as well as a policy needs assessment.



## **L. Monitoring Programs**

### ***Dry Weather Screening***

Currently, the determination of dry weather screening areas in the county – and ultimately the selection of the specific storm sewer outfalls that comprise each year’s Dry Weather Screening Program – is made by selecting tax map grids for sampling with preference given to grids with commercial and industrial parcels, in older areas of the county, and that have not been sampled in the past. Dry weather screening sites are selected using GIS layers (buildings with land use codes, stormwater outfalls and their ownership, and stormwater conveyance infrastructure) to select representative outfalls across the county for screening. At least 100 outfalls per year are identified for screening. Water quality measurements of temperature, pH, conductivity, ammonia, copper, detergents, fluoride, chlorine and phenol are taken in the field.

The following steps are followed when one or more analytes exceeds water quality criteria or benchmarks and an illicit discharge is suspected:

- Outfalls are retested for continued analyte exceedances at least eight hours after initial screening.
- If an analyte is confirmed through retesting and continues to exceed the criteria or benchmarks, the discharge is tracked to its source by testing farther up the storm drain network.
- Once the source of an illicit discharge has been identified, call the appropriate contact as listed in the Dry Weather Screening to inform them of the discharge.
- Contact DEQ and inform them of the discharge.
- Work with the appropriate contact to eliminate the discharge.

### ***Wet Weather Screening***

Wet Weather Screening is conducted according to the 2014 Fairfax County Wet Weather Screening Program Plan. Two sites are monitored over two storm events each year. Runoff samples are collected via automated sampler and event mean concentrations (EMCs) calculated for total petroleum hydrocarbons, chemical oxygen demand, total phosphorous, total nitrogen, Kjeldahl nitrogen, nitrate-nitrite nitrogen, zinc, cadmium, copper, lead, chromium, nickel, hardness, total suspended solids, ortho-phosphorous, and alkalinity. The sites are primarily identified in industrial and commercial areas and ranked according to their land use, potential to contribute pollutants to the county’s MS4 and information gathered from field reconnaissance.

### ***Watershed Monitoring***

The watershed monitoring program is used to verify the effectiveness and adequacy of control measures in the county’s stormwater management program and to identify areas of water quality improvement or degradation. The current permit requires monitoring to be conducted at representative stations in at least two watersheds at in-stream locations and/or stormwater outfalls with a minimum drainage area of 100 acres. The county’s goals for the watershed monitoring program are to:

- Obtain data for the development, calibration, and verification of water quality simulation models, and



- Determine whether the concentrations of constituents in stormwater runoff from different residential land-uses (low density and medium/high density) are statistically significant.

To support these goals, a long-term monitoring program was established at two in-stream stations. The first station (VNA) drains approximately 100 acres of medium/high density residential area in the Accotink Creek watershed, while the second station (OQN) drains approximately 100 acres of low density residential area in the Sandy Run watershed. Station VNA has an estimated imperviousness of 25.1 percent while station OQN has an estimated imperviousness of 10.1 percent.

Multiple storm events are monitored each year and the data collected include rainfall, flow, and water quality (all the constituents in Attachment A to the county's current MS4 permit). A statistical analysis to determine if there are significant differences between observed constituent concentrations at the two stations is conducted annually. Seasonal and annual unit-area constituent loadings from the monitored sites are computed using the Simple Method.

### ***Rapid Bioassessment***

The long-term biological (fish and benthic macroinvertebrates) monitoring program provides a comprehensive analysis of stream conditions throughout the county. The program has developed a substantial dataset, which helps determine the overall rate of change or trends in the conditions of local streams and supports the prioritization of implementation measures to restore and protect the county's watersheds.

A probabilistic-based site selection sampling methodology is used to identify randomly selected stream bioassessment locations throughout the county. The selected sites are stratified and proportionally distributed throughout the county based on Stahler stream order. This methodology eliminates any site selection bias and is commonly used as a cost-effective way of obtaining statistically defensible determination of stream conditions at a countywide scale. The following types of sites are sampled each year:

- Sites randomly selected in Fairfax County
- Reference sites in Prince William National Forest Park
- Coastal plain reference sites in Fairfax County
- Sites at stream restoration locations (pre-restoration samples)

### ***Floatables***

Fairfax County will continue to work with and support organizations, such as those listed below, that coordinate large and small-scale volunteer cleanups:

- The Alice Ferguson Foundation
- The Virginia Department of Conservation and Recreation
- The International Coastal Cleanup
- The Friends of the Occoquan
- Various "Friends of" groups



**BMPs for Permit Years 6-10**

The county will continue to implement a comprehensive monitoring program that includes dry and wet weather screening, watershed, rapid bioassessment and floatables monitoring. The focus for this permit term will be on reviewing, evaluating, updating and implementing a comprehensive monitoring program that meets industry, state and federal standards. The specific BMPs for each permit year (PY) are presented in Table L.

**Table L: BMP Schedule for Monitoring Programs**

BMP	PY6	PY7	PY8	PY9	PY10	DESCRIPTION	RESPONSIBLE PARTY
1	X	X	X	X	X	Continue dry weather screening program.	Director, SWPD, DPWES
2	X	X	X	X	X	Continue wet weather screening program.	Director, SWPD, DPWES
3	X	X	X	X	X	Continue watershed, rapid bioassessment and floatables monitoring programs to assess program effectiveness. Review and update as necessary to ensure that program meets federal and state standards.	Director, SWPD, DPWES



## Summary of Proposed Changes to Stormwater Management Program

The county plans to continue the current stormwater management program and proposes the following minor changes.

### Structural and Source Controls

One BMP was modified to reflect implementation of the new VSMP regulations:

- BMP 4: Require long-term responsibility for and maintenance of all new privately-maintained SWM facilities constructed in the county through PMAs or other enforceable mechanisms that address future maintenance.

### Areas of New Development and Significant Redevelopment

One BMP was modified to reflect implementation of the new VSMP regulations:

- BMP 5: Continue to implement a stormwater management program consistent with the Virginia Stormwater Management Act and VSMP Regulations.

### Floodplain Management and Retrofitting

Two BMPs were moved from Areas of New Development and Redevelopment:

- BMP 3: Report status of watershed management planning effort in annual reports.
- BMP 4: Evaluate retrofits identified in the watershed management planning process – report number of retrofit projects completed in annual reports.

### Illicit Discharge and Improper Disposal

One BMP was added to specifically reference the prohibition of illicit discharges:

- BMP 1: Continue to enforce the prohibition of illicit discharges and improper disposal.

### Industrial & High Risk Runoff

One BMP was modified and two BMPs were added in response to EPA's 2011 inspection of the county's MS4 program. In December 2014, EPA notified the county that the inspection findings had been addressed. The Industrial & High Risk Runoff program enhancements were as follows:

- BMP 1: Continue current program for industrial and high risk runoff monitoring to identify and control pollutants in stormwater discharges to the county's MS4.
- BMP 6: Track DMRs submitted to the county from facilities holding VPDES permits for discharges of stormwater associated with industrial activity.
- BMP 7: Develop educational materials to assist other county agencies with recognizing and reporting IHRR during their inspections.

### Construction Site Runoff

One BMP was modified replace ESC training of construction site operators, which is now provided by DEQ, with an awards program for developers, engineering firms, site superintendents and contractors:

- BMP 6: Recognize excellence in ESC design and implementation through the Land Conservation and Tree Preservation Awards program.



Three BMPs were added in response to EPA's 2011 inspection of the county's MS4 program. In December 2014, EPA notified the county that the inspection findings had been addressed. The Construction Site Runoff program enhancements were as follows:

- BMP 7: Update the SI2K database to require location information and comments regarding compliance or noncompliance.
- BMP 8: Update the Inspector's Handbook to require documentation in SI2K of location information, comments regarding compliance or noncompliance, and verbal communications regarding ESC inspections.
- BMP 9: Conduct annual training for inspectors to ensure that revisions to SI2K and the Inspector's Handbook are followed.

### **Monitoring Programs**

One BMP was moved from Illicit Discharge and Improper Disposal:

- BMP 1: Continue dry weather screening program.

One BMP was moved from Industrial & High Risk Runoff:

- BMP 2: Continue wet weather screening program.



## Appendix A: Glossary of Acronyms

BMP: best management practice  
BOS: Fairfax County Board of Supervisors  
CAP: DPWES Capital Facilities  
CCTV: closed-circuit television  
CDCD: Code Development & Compliance Division  
CFR: Code of Federal Revisions  
CIP: Capital Improvement Program  
CIPP: cured in place pipe  
COG: Metropolitan Washington Council of Governments  
DCR: Virginia Department of Conservation and Recreation  
DEQ: Virginia Department of Environmental Quality  
DMR: discharge monitoring report  
DPWES: Fairfax County Department of Public Works and Environmental Services  
DPZ: Fairfax County Department of Planning and Zoning  
EIP: Environmental Improvement Program  
EMC: event mean concentration  
EPA: U.S. Environmental protection Agency  
EPCRA: Emergency Planning & Community Right to Know Act  
EQC: Environmental Quality Corridor  
ESC: Erosion and Sediment Control  
FCPA: Fairfax County Park Authority  
FJLEPC: Fairfax Joint Local Emergency Planning Committee  
FPCP: Fire Prevention Code Permit  
FPD: Fire Prevention Division  
FRD: Fairfax County Fire and Rescue Department  
GIS: geographic information system  
HAZMAT: hazardous materials  
HHW: Hazardous Household Waste  
FCHD: Fairfax County Health Department  
HMIS: Hazardous Materials and Investigative Services  
HMMP: Hazardous Materials Management Plans  
IPMP: Integrated Pest Management Plan



LDS: Land Development Services  
MS4: Municipal Separate Storm Sewer System  
MSMD: Maintenance and Stormwater Management Division  
NFPA: National Fire Protection Association  
NMP: Nutrient Management Plan  
NRCS: Natural Resources Conservation Service  
NVSWCD: Northern Virginia Soil and Water Conservation District  
OSHA: Occupational Safety and Health Administration  
PCA: Physical Condition Assessment  
PFM: Fairfax County Public Facilities Manual  
PMA: private maintenance agreement  
PY: permit year  
RMA: Resource Management Area  
RPA: Resource Protection Area  
SDID: Site Development and Inspection Division  
SI2K: site inspection database (Site Inspections 2000)  
SOP: standard operating procedure  
SPCC: Spill Prevention, Control and Countermeasure  
SSEIP: Sanitary Sewer Extension and Improvement Program  
SWM: stormwater management (facility)  
SWMP: DPWES Solid Waste Management Program  
SWPD: Stormwater Planning Division  
UDCD: CAP Utilities Design & Construction Division  
VDACS: Virginia Department of Agriculture and Consumer Services  
VDOT: Virginia Department of Transportation  
VPDES: Virginia Pollutant Discharge Elimination System  
VSMP: Virginia Stormwater Management Program  
WCD: Wastewater Collection Division



## Appendix B: Stormwater Program Summary Tables

### Structural and Source Controls

BMP	PY6	PY7	PY8	PY9	PY10	DESCRIPTION	RESPONSIBLE PARTY
1	X	X	X	X	X	Inspect inventoried county-maintained SWM facilities at least once every two years – report number of facilities inspected in annual reports.	Director, MSMD, DPWES
2	X	X	X	X	X	Inspect inventoried state-regulated dams at least once per year – report number of dams inspected in annual reports.	Director, MSMD, DPWES
3	X	X	X	X	X	Initiate maintenance on critical deficiencies – report number of work orders in annual reports.	Director, MSMD, DPWES
4	X	X	X	X	X	Require long-term responsibility for and maintenance of all new privately-maintained SWM facilities constructed in the county through PMAs or other enforceable mechanisms that address future maintenance.	Director, Director, Code Development & Compliance Division (CDCD), DPWES
5	X	X	X	X	X	Inspect inventoried privately-maintained SWM facilities with executed and recorded PMAs at least once every five years and send physical inspection reports to the facility owner(s) – report number of facilities inspected in annual reports.	Director, MSMD, DPWES
6	X	X	X	X	X	Maintain inventory of Fairfax County Park Authority (FCPA) SWM facilities.	Director, MSMD, DPWES



BMP	PY6	PY7	PY8	PY9	PY10	DESCRIPTION	RESPONSIBLE PARTY
7	X	X	X	X	X	Maintain tracking mechanism for newly-installed public and private SWM facilities to include: <ul style="list-style-type: none"> <li>• Facility Type,</li> <li>• Acres Treated,</li> <li>• Date Brought On Line (MMYYYY),</li> <li>• Receiving Waters,</li> <li>• VAHU6 Code, and</li> <li>• Maintenance Agreement (Y/N).</li> </ul>	Director, Director, CDCD, DPWES  Director, MSMD, DPWES
8	X	X	X	X	X	Track the above information for newly-installed public and private SWM facilities.	Director, Site Development and Inspection Division (SDID), DPWES  Director, MSMD, DPWES



**Areas of New Development and Significant Redevelopment**

<b>BMP</b>	<b>PY6</b>	<b>PY7</b>	<b>PY8</b>	<b>PY9</b>	<b>PY10</b>	<b>DESCRIPTION</b>	<b>RESPONSIBLE PARTY</b>
1	X	X	X	X	X	Review rezoning applications, special exceptions and amendments, and special permits for environmental considerations related to the Comprehensive Plan – report number of rezoning applications, special exceptions and amendments, and special permits in annual reports.	Director, Planning Division, Department of Planning and Zoning (DPZ)  Director, Zoning Evaluation Division, DPZ
2	X	X	X	X	X	Encourage the use of environmentally sensitive design and low impact development principles and practices – report on methods used to encourage these practices.	Director, Planning Division, DPZ  Director, Zoning Evaluation Division, DPZ
3	X	X	X	X	X	Implement and enforce the county's Chesapeake Bay Preservation Ordinance through the plan review process – report as part of special exceptions and amendments and special permits under BMP 1.	Director, SDID, DPWES
4	X	X	X	X	X	Strive to maintain a consistent Chesapeake Bay Preservation Program with the Virginia Department of Environmental Quality (DEQ) – report any audits and any changes made as the result of an audit.	Director, CDCD, DPWES
5	X	X	X	X	X	Implement a stormwater management program consistent with the Virginia Stormwater Management Act and VSMP Regulations.	Director, CDCD, DPWES



**Roadways**

<b>BMP</b>	<b>PY6</b>	<b>PY7</b>	<b>PY8</b>	<b>PY9</b>	<b>PY10</b>	<b>DESCRIPTION</b>	<b>RESPONSIBLE PARTY</b>
1	X	X	X	X	X	Conduct street sweeping in county-owned public parking lots where chemicals are applied.	Director, MSMD, DPWES
2	X	X	X	X	X	Employ good housekeeping / pollution prevention practices at material storage facilities where deicing materials are stored.	Director, MSMD, DPWES



**Floodplain Management and Retrofitting**

<b>BMP</b>	<b>PY6</b>	<b>PY7</b>	<b>PY8</b>	<b>PY9</b>	<b>PY10</b>	<b>DESCRIPTION</b>	<b>RESPONSIBLE PARTY</b>
1	X	X	X	X	X	Continue to review proposed projects for adherence to floodplain management and adequate outfall requirements.	Director, SDID, DPWES
2	X	X	X	X	X	When structural maintenance (e.g. dam repair) is required at a county-maintained facility, the facility will be evaluated for stormwater retrofit opportunities.	Director, MSMD, DPWES
3	X	X	X	X	X	Report status of watershed management planning effort in annual reports.	Director, Stormwater Planning Division (SWPD), DPWES
4	X	X	X	X	X	Evaluate retrofits identified in the watershed management planning process – report number of retrofit projects completed in annual reports.	Director, SWPD, DPWES



**Pesticide, Herbicide, and Fertilizer Application**

<b>BMP</b>	<b>PY6</b>	<b>PY7</b>	<b>PY8</b>	<b>PY9</b>	<b>PY10</b>	<b>DESCRIPTION</b>	<b>RESPONSIBLE PARTY</b>
1	X	X	X	X	X	Continue development of NMPs for applicable county lands.	Director, SWPD, DPWES
2	X	X	X	X	X	Continue development of IPMPs for applicable county lands.	Director, SWPD, DPWES
3	X	X	X	X	X	Track and report acreage managed under NMPs and IPMPs in annual reports.	Director, SWPD, DPWES
4	X	X	X	X	X	Encourage good housekeeping/pollution prevention measures in the application, storage, transport and disposal of pesticides, herbicides and fertilizers on municipal properties.	Director, SWPD, DPWES



**Illicit Discharge and Improper Disposal**

<b>BMP</b>	<b>PY6</b>	<b>PY7</b>	<b>PY8</b>	<b>PY9</b>	<b>PY10</b>	<b>DESCRIPTION</b>	<b>RESPONSIBLE PARTY</b>
1	X	X	X	X	X	Continue to enforce the prohibition of illicit discharges and improper disposal.	Director, SWPD, DPWES  Fire Marshal, Fire Prevention Division (FPD), FRD
2	X	X	X	X	X	Continue to inspect new construction and conduct continuous quality assurance inspections on sanitary sewer mains, laterals and manholes.	Director, WCD, DPWES  Director, SDID, DPWES
3	X	X	X	X	X	Continue to implement the infiltration abatement program.	Director, WCD, DPWES
4	X	X	X	X	X	Report miles of sanitary sewer inspected and rehabilitated in annual reports.	Director, WCD, DPWES
5	X	X	X	X	X	Continue to implement the SSEIP – report new sanitary sewer constructed in annual reports.	Director, Utilities Design & Construction Division (UDCD), DPWES



**Spill Prevention & Response**

<b>BMP</b>	<b>PY6</b>	<b>PY7</b>	<b>PY8</b>	<b>PY9</b>	<b>PY10</b>	<b>DESCRIPTION</b>	<b>RESPONSIBLE PARTY</b>
1	X	X	X	X	X	Maintain membership in the FJLEPC.	Fire Marshal, FPD, FRD
2	X	X	X	X	X	Maintain, track and annually report firefighter training/certification under OSHA 29 CFR 1910.120 (q) and NFPA 472.	Fire and Rescue Academy Training Division, FRD
3	X	X	X	X	X	Continue to issue and enforce FPCPs.	Fire Marshal, FPD, FRD
4	X	X	X	X	X	Update the Hazardous Material Emergency Response Plan annually.	Fire Marshal, FPD, FRD



**Industrial & High Risk Runoff**

<b>BMP</b>	<b>PY6</b>	<b>PY7</b>	<b>PY8</b>	<b>PY9</b>	<b>PY10</b>	<b>DESCRIPTION</b>	<b>RESPONSIBLE PARTY</b>
1	X	X	X	X	X	Continue current program for industrial and high risk runoff monitoring to identify and control pollutants in stormwater discharges to the county's MS4.	Director, SWPD, DPWES
2	X	X	X	X	X	Identify new industrial facilities discharging to the county's MS4 and refer owners to DEQ for permitting, as appropriate.	Director, SWPD, DPWES
3	X	X	X	X	X	Maintain an inventory of industrial and high risk facilities that discharge to the county's MS4.	Director, SWPD, DPWES
4	X	X	X	X	X	Maintain a master inventory of county industrial facilities.	Director, SWPD, DPWES
5	X	X	X	X	X	Ensure that appropriate stormwater pollution prevention measures are in place at county industrial facilities.	County Industrial Facility Managers
6		X	X	X	X	Track DMRs submitted to the county from facilities holding VPDES permits for discharges of stormwater associated with industrial activity.	Director, SWPD, DPWES
7		X	X	X	X	Develop educational materials to assist other county agencies with recognizing and reporting IHRR during their inspections.	Director, SWPD, DPWES



**Construction Site Runoff**

<b>BMP</b>	<b>PY6</b>	<b>PY7</b>	<b>PY8</b>	<b>PY9</b>	<b>PY10</b>	<b>DESCRIPTION</b>	<b>RESPONSIBLE PARTY</b>
1	X	X	X	X	X	Continue the existing ESC program, including: <ul style="list-style-type: none"> <li>• Plan Review,</li> <li>• Inspection, and</li> <li>• Enforcement.</li> </ul> Report number of plans reviewed, inspections conducted and any enforcement measures in annual reports.	Director, SDID, DPWES
2	X	X	X	X	X	Strive to maintain a consistently rated ESC program with the DEQ – report any audit by DEQ and resulting program changes in annual reports.	Director, SDID, DPWES
3	X	X	X	X	X	Submit a monthly summary of approved plans to the DEQ, Northern Regional Office, that will include: <ul style="list-style-type: none"> <li>• Owner's Name,</li> <li>• Owner's Address,</li> <li>• Site Name,</li> <li>• Site Address, and</li> <li>• Disturbed Acreage.</li> </ul>	Director, SDID, DPWES
4	X	X	X	X	X	Maintain certified ESC inspectors and plan reviewers on staff.	Director, SDID, DPWES
5	X	X	X	X	X	Require Responsible Land Disturber Certification before issuing grading permits – report number of plans reviewed in annual reports.	Director, CDCD, DPWES
6	X	X	X	X	X	Recognize excellence in ESC design and implementation through the Land Conservation and Tree Preservation Awards program.	Director, LDS, DPWES



<b>BMP</b>	<b>PY6</b>	<b>PY7</b>	<b>PY8</b>	<b>PY9</b>	<b>PY10</b>	<b>DESCRIPTION</b>	<b>RESPONSIBLE PARTY</b>
<b>7</b>		<b>X</b>	<b>X</b>			Update the SI2K database to require location information and comments regarding compliance or noncompliance.	Director, SDID, DPWES
<b>8</b>		<b>X</b>	<b>X</b>			Update the Inspector's Handbook to require documentation in SI2K of location information, comments regarding compliance or noncompliance, and verbal communications regarding ESC inspections.	Director, SDID, DPWES
<b>9</b>				<b>X</b>	<b>X</b>	Conduct annual training for inspectors to ensure that revisions to SI2K and the Inspector's Handbook are followed.	Director, SDID, DPWES



**Storm Sewer Infrastructure Management**

<b>BMP</b>	<b>PY6</b>	<b>PY7</b>	<b>PY8</b>	<b>PY9</b>	<b>PY10</b>	<b>DESCRIPTION</b>	<b>RESPONSIBLE PARTY</b>
1	X	X	X	X	X	Continue on-going field verification and resulting updates of storm sewer GIS layer – report progress in annual reports.	Director, MSMD, DPWES
2	X	X	X	X	X	Continue to update the storm sewer GIS layer with newly constructed storm sewer information – report progress in annual reports.	Director, MSMD, DPWES
3	X	X	X	X	X	Continue development of PCA GIS layer – report progress in annual reports.	Director, MSMD, DPWES
4	X	X	X	X	X	Continue repair, rehabilitation and renewal of storm sewer segments – report miles rehabilitated in annual reports.	Director, MSMD, DPWES



**Public Education**

<b>BMP</b>	<b>PY6</b>	<b>PY7</b>	<b>PY8</b>	<b>PY9</b>	<b>PY10</b>	<b>DESCRIPTION</b>	<b>RESPONSIBLE PARTY</b>
1	X	X	X	X	X	Maintain Web page to provide information about identification and reporting of illicit discharges.	Director, SWPD, DPWES
2	X	X	X	X	X	Continue to provide support for storm drain marking activities in the county run by other organizations such as the NVSWCD – report number of markers installed in annual reports.	Director, SWPD, DPWES
3	X	X	X	X	X	Continue to give presentations to community groups that include education on illicit discharges; proper use of pesticides, herbicides and fertilizer; HHW disposal; and litter prevention – report number of presentations in annual reports.	Director, SWPD, DPWES Director, SWMP, DPWES
4	X	X	X	X	X	Continue to distribute educational materials on illicit discharges; proper use of pesticides, herbicides and fertilizer; HHW disposal; and litter prevention at community events– report number of events attended in annual reports.	Director, SWPD, DPWES Director, SWMP, DPWES
5	X	X	X	X	X	Maintain Web page with information on used motor oil and HHW management.	Director, SWMP, DPWES



<b>BMP</b>	<b>PY6</b>	<b>PY7</b>	<b>PY8</b>	<b>PY9</b>	<b>PY10</b>	<b>DESCRIPTION</b>	<b>RESPONSIBLE PARTY</b>
<b>6</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	Maintain Web page and 24 hour hotline to report possible violations of the county's environmental regulations pertaining to land development activities.	Director, LDS, DPWES
<b>7</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	Continue to provide support to educational programs on illicit discharges; proper use of pesticides, herbicides and fertilizer; household hazardous waste disposal; and litter prevention provided by other organizations in the county such as the NVSWCD and Clean Fairfax – report support provided in annual reports.	Director, SWPD, DPWES



**Monitoring Programs**

<b>BMP</b>	<b>PY6</b>	<b>PY7</b>	<b>PY8</b>	<b>PY9</b>	<b>PY10</b>	<b>DESCRIPTION</b>	<b>RESPONSIBLE PARTY</b>
1	X	X	X	X	X	Continue dry weather screening program.	Director, SWPD, DPWES
2	X	X	X	X	X	Continue wet weather screening program.	Director, SWPD, DPWES
3	X	X	X	X	X	Continue watershed, rapid bioassessment and floatables monitoring programs to assess program effectiveness. Review and update as necessary to ensure that program meets federal and state standards.	Director, SWPD, DPWES

