

# **LOUDOUN COUNTY SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) STORMWATER MANAGEMENT PROGRAM PLAN**

**For July 2013 – June 2018  
[Revised June 2017 for Permit Year 5]**



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## INTRODUCTION/OVERVIEW

The following document represents Loudoun County's (County) proposed Stormwater Management Program to comply with the Virginia General Permit for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems (MS4 General Permit). This MS4 Program Plan enables the County to meet the following goals:

- Reduce the discharge of pollutants to the "maximum extent practicable" (MEP)
- Protect water quality
- Ensure compliance with water quality standards
- Satisfy the appropriate water quality requirements of the Clean Water Act (CWA)

The MS4 Program Plan addresses all six minimum control measures (MCMs) and the Special Conditions regarding approved Total Maximum Daily Loads (TMDLs) outlined in Sections I and II of the MS4 General Permit. In addition to detailing the best management practices (BMPs) for each MCM, the County has incorporated an additional Administration/Special Conditions section with associated BMPs crafted to facilitate program updates and TMDL implementation.

To arrive at appropriate and cost-effective BMPs, the County reviewed existing stormwater management operations, ordinances, and programming as they relate to the compliance requirements of the MS4 General Permit. Further, in consideration of Virginia's MEP threshold, the County examined each proposed BMP to determine whether the County had the legal, technical, administrative, and financial ability to ensure effective implementation. The County's financial considerations included potential budget implications for each proposed BMP, such as the resources required and any existing synergies between tasks. Based on those findings and current budget allocations, the County can support the Program through appropriations from the General Fund.

For each selected BMP, the County has identified measurable goals, responsible parties, timelines, and evaluation methods. This MS4 Program Plan has seven sections, covering Administration/Special Conditions and each of the six MCMs in the MS4 General Permit. Each section details control measure requirements, an existing program summary, a programmatic BMPs inventory, and a BMP summary table.

The County recognizes that the following four (4) TMDLs, as shown in Table 1, have been developed and approved by the Environmental Protection Agency (EPA) or the Virginia Department of Environmental Quality (VDEQ) for which a wasteload allocations (WLAs) have been established for this MS4.

## Introduction/Overview

**Table 1: Approved TMDLs with WLA to Loudoun County, Virginia MS4**

<b>Water Body/Reach</b>	<b>Identified Impairment</b>	<b>Pollutant of Concern</b>
Chesapeake Bay	Fish, Shellfish, and Grasses	Nitrogen, Phosphorus, and Sediment
Bull Run/A23R	Bacteria	E. coli
Bull Run/A23R	Benthic	Sediment
Goose Creek/A08R	Benthic	Sediment
* Sugarland Run / A10R	Bacteria	E. coli

\* This TMDL with WLA was approved mid permit cycle and a TMDL action plan will be developed in the future as outlined in the General Permit.

## ADMINISTRATION/SPECIAL CONDITIONS

### *Control Measure Requirements*

As operator of a regulated Small MS4, the County shall annually evaluate:

1. Program compliance
2. Appropriateness of identified BMPs
3. Progress towards achieving identified measurable goals

Additionally, the County shall develop action plans for all TMDLs for which the MS4 has been given a WLA.

### *Existing Program*

The County manages stormwater through a comprehensive local program featuring the following primary functions:

1. Design review and inspection of new construction
  - a. Ensures quality and quantity control of increased stormwater is adequately addressed
2. Erosion and sediment control/management on open construction sites
3. Inspection, repair, and maintenance of existing stormwater facilities
4. Management of the MS4 Permit

The program is administered by two departments: *Building and Development* and *General Services*. *Building and Development* performs design review/inspection of new construction and also manages the Erosion and Sedimentation Control (E&S) Program. *General Services* provides for inspection, repair, and maintenance of existing stormwater facilities and also manages the MS4 General Permit.

Stormwater Management is governed by a series of ordinances and documents referenced throughout this MS4 Program Plan which guide the planning, development, implementation, maintenance, and enforcement of stormwater management practices and facilities within the County.

### *Administration/Special Conditions BMPs*

#### **BMP A: Evaluate Effectiveness of Program and TMDL BMPs**

Objective: Ensure that, to the MEP, all program and TMDL BMPs are achieving the objectives intended; to correct identified deficiencies and/or inefficiencies

## Administration/Special Conditions

Measurable Goal: Each program BMP will be evaluated/critiqued annually via quantitative or qualitative methodologies, per the nature of the established BMP metric to determine its effectiveness in achieving its stated objective, with recommendations for continuance or revision provided

Necessary Documents: Loudoun County Small MS4 Program Plan

Responsible Party: Department of General Services

Schedule: 1<sup>st</sup> evaluation conducted/reported during Permit Year 2 with future implementation through the end of the permit cycle

Items to Report: Evaluation/critique report

### **BMP B: Develop and Implement the Chesapeake Bay TMDL Action Plan for the Loudoun County MS4**

Objective: Develop a Chesapeake Bay TMDL Action Plan that meets the requirements of the MS4 General Permit Section I C 2 for nitrogen, phosphorus, and sediment including a list of BMPs to be added to the MS4 Program Plan that will be implemented over the course of the final three years of this permit

Measurable Goal: Action plan is completed and submitted with the Permit Year 2 Annual Report

Necessary Documents: County GIS (digital), construction plans for land disturbing projects construction after June 30, 2009, and Tables 2b and 3b of the MS4 General Permit

Responsible Party: Department of General Services

Schedule: Action plan submitted by the end of Permit Year 2 with future implementation through the end of the permit cycle

Items to Report: Completed action plan and associated BMPs to be added to the MS4 Program Plan for Permit Years 3, 4, and 5

Method of Evaluation: Assess effectiveness in reducing the pollutants identified in the WLAs as described in action plan

### **BMP C: Develop the Goose Creek TMDL Action Plan for the Loudoun County MS4**

Objective: Develop a Goose Creek TMDL Action Plan that meets the requirements of MS4 General Permit Section I B 1 for sediment including a list of BMPs to be added to the MS4 Program Plan that will be implemented over the course of the final three years of this permit

## Administration/Special Conditions

Measurable Goal: Action plan is completed and submitted with the next annual report

Necessary Documents: Calculations/methodology used to determine the required reductions and the anticipated type and estimated quantity of new BMPs or retrofits that will be implemented to achieve the required reductions

Responsible Party: Department of General Services

Schedule: Action plan submitted by the end of Permit Year 2 with future implementation through the end of the permit cycle

Items to Report: Completed action plan and associated BMPs to be added to the MS4 Program Plan for Permit Years 3, 4, and 5

Method of Evaluation: Assess effectiveness in reducing the pollutants identified in the WLAs as described in action plan

### **BMP D: Develop the Bull Run TMDL Action Plan for the Loudoun County MS4**

Objective: Develop a Bull Run TMDL Action Plan that meets the requirements of MS4 General Permit Section I B 1 for E. coli and sediment including a list of BMPs to be added to the MS4 Program Plan that will be implemented over the course of the final three years of this permit

Measurable Goal: Plan is completed and submitted with the next annual report

Necessary Documents: Calculations/methodology used to determine the required reductions and the anticipated type and estimated quantity of new BMPs or retrofits that will be implemented to achieve the required reductions

Responsible Party: Department of General Services

Schedule: Action plan submitted by the end of Permit Year 2 with future implementation through the end of the Permit Cycle

Items to Report: Completed action plan and associated BMPs to be added to the MS4 Program Plan for Permit Years 3, 4, and 5

Method of Evaluation: Assess effectiveness in reducing the pollutants identified in the WLAs as described in action plan

## Administration/Special Conditions

### **BMP E: Conduct Annual TMDL Action Plan Assessments for Bull Run Sediment TMDL and Goose Creek Sediment TMDL**

Objective: Develop and implement a method to annually assess TMDL Action Plans for their effectiveness in reducing sediment discharges to Goose Creek and Bull Run

Measurable Goal: Update the Goose Creek TMDL Assessment and the Bull Run TMDL Assessment Spreadsheets on an annual basis

Necessary Documents: Loudoun County, Virginia Comprehensive TMDL Action Plan; Goose Creek TMDL Assessment Spreadsheet Bull Run TMDL Assessment Spreadsheet

Responsible Party: Department of General Services

Schedule: On an annual basis, update the estimated land use acreage, BMP types, and treatment acreage and compare the estimated pollutant discharge load against the appropriate Target Discharges described in the appropriate Comprehensive TMDL Action Plan Chapter

Items to Report: Progress made towards the Target Discharges

Method of Evaluation: Discussion of progress towards the measurable goal

### **BMP F: Conduct Review of Biennial 305(b)/303(d) Integrated Report for Changes to the Applicable Stream Segment of Bull Run**

Objective: To monitor the biennial 305(b)/303(d) Integrated Report to ensure that the applicable segment is not relisted and that the County's current implementation strategy remains appropriate

Measurable Goal: Determine whether the impaired stream segment remains delisted

Necessary Documents: VDEQ 305(b)/303(d) report of Impaired Waters (produced by the Virginia DEQ in even number years)

Responsible Party: Department of General Services

Schedule: Review ongoing, biennially in even numbered years

Items to Report: The impaired status of the applicable Bull Run stream segment regarding its listing concerning bacteria impairment

Method of Evaluation: Review the most recent version of the 305(b)/303(d) Integrated Report to verify the applicable stream segment remains delist

## Administration/Special Conditions

### **BMP G: Evaluate Bull Run Dry Pond Facilities for Potential Retrofit**

Objective: To evaluate the retrofit potential of existing dry ponds located within the Bull Run watershed

Measurable Goal: Determine which dry ponds have good retrofit potential

Necessary Documents: Comprehensive TMDL Action Plan, Appendix D

Responsible Party: Department of General Services

Schedule: Complete the dry pond evaluations for potential retrofits by the end of Permit Year 3

Items to Report: A summary of the retrofit evaluations

Method of Evaluation: Determine the BMPs retrofit potential based on their cost per pound of phosphorous removal

### **BMP H: Design and Completion of One Public Dry Pond Facility Retrofit Project in the Bull Run Watershed**

Objective: To design and complete construction of one public dry pond facility retrofit project in the Bull Run watershed

Measurable Goal: The completion of one public dry pond retrofit project

Necessary Documents: Bull Run dry pond retrofit evaluations and Design and Construction plans

Responsible Party: Department of General Services

Schedule: Complete retrofit design by end of Permit Year 4 Complete construction of retrofit by end of Permit Year 5

Items to Report: Progress made towards the measurable goal

Method of Evaluation: Written status report

### **BMP I: Retrofit of Existing Stormwater Management Facilities - Gwen Thompson Briar Patch Park**

Objective: To install a constructed wetland in Gwen Thompson Briar Patch Park

Measurable Goal: The installation of a constructed wetland at Briar Patch Park

Necessary Documents: Approved construction plans and associated VSMP Permit

Responsible Party: Department of General Services

## Administration/Special Conditions

Schedule: Complete construction, weather permitting, in summer 2016

Items to Report: Progress made towards the measurable goal

Method of Evaluation: Written status report

### **BMP J: Retrofit of Existing Stormwater Management Facilities - Loudoun Valley Estates, Section III**

Objective: Design and install a constructed wetland on an existing dry pond located in Loudoun Valley Estates

Measurable Goal: The retrofit of an existing dry pond, located in Loudoun Valley Estates, to a constructed wetland

Necessary Documents: Approved construction plans and associated VSMP Permit

Responsible Party: Department of General Services

Schedule: Adhere to the schedule contained in Table 5 of the Chesapeake Bay TMDL Action Plan, weather permitting. Modifications to the schedule resulting from issues outside the County's control will be reported as part of the appropriate MS4 Annual Report

Items to Report: Progress made towards the measurable goal

Method of Evaluation: Written status report

## Administration/Special Conditions

### *BMP Summary Table*

**Table 2: Program Administration BMP Summary**

<b>BMP</b>	<b>Task</b>	<b>Permit Year Implement /Complete</b>	<b>Primary Responsible Party(ies)</b>	<b>Measurable Goal(s)/Report Item(s)</b>
A	Evaluate Effectiveness of Program and TMDL BMPs	Year 1*	Department of General Services	Annual evaluation/critique report
B	Develop and Implement the Chesapeake Bay TMDL Action Plan for the Loudoun County MS4	Year 2	Department of General Services	Completed Action Plan and associated BMPs to be added
C	Develop the Goose Creek TMDL Action Plan for the Loudoun County MS4	Year 2	Department of General Services	Completed Action Plan and associated BMPs to be added
D	Develop the Bull Run TMDL Action Plan for the Loudoun County MS4	Year 2	Department of General Services	Completed Action Plan and associated BMPs to be added
E	Conduct Annual TMDL Action Plan Assessments for Bull Run Sediment TMDL and Goose Creek Sediment TMDL	Year 3*	Department of General Services	Annual Assessment Report
F	Conduct Review of Biennial 305(b)/303(d) Integrated Report for Changes to the Applicable Stream Segment of Bull Run	Year 2*	Department of General Services	Biennial evaluation/critique report
G	Evaluate Bull Run Dry Pond Facilities for Potential Retrofit	Year 3	Department of General Services	Site Evaluation Reports
H	Design and Completion of One Public Dry Pond Facility Retrofit Project in the Bull Run watershed	Year 5	Department of General Services	Completion of one public dry pond retrofit project
I	Retrofit of Existing Stormwater Management Facilities - Gwen Thompson Briar Patch Park	Year 3	Department of General Services	Installation of a constructed wetland
J	Retrofit of Existing Stormwater Management Facilities-Loudoun Valley Estates, Section III	Year 4	Department of General Services	Installation of a constructed wetland

\* Denotes ongoing programming once initiated

## MINIMUM CONTROL MEASURES

### I. Public Education and Outreach

#### *Control Measure Requirements*

As an operator of a regulated small MS4, the County shall develop and implement a Public Education Outreach Plan (PEOP). The PEOP should be designed with consideration of the following goals:

1. Increased target audience knowledge regarding the steps that can be taken to reduce stormwater pollution, placing priority on reducing impacts to impaired waters and other local water pollution concerns
2. Increased target audience knowledge of hazards associated with illegal discharges and improper disposal of waste, including pertinent legal implications
3. Implementing a diverse program with strategies targeted towards audiences most likely to have significant stormwater impacts

The three high-priority water quality issues identified in the County's 2014 PEOP are as follows:

- Bacteria impacts to water quality
- Illicit discharges from commercial and community swimming pools
- Nutrient impacts to water quality

The operator shall identify/estimate the target audience and develop relevant message(s) in order to conduct sufficient education and outreach activities designed to reach an equivalent of 20% of each high-priority issue's target audience.

#### *Existing Program*

The County maintains a Stormwater Management Program webpage on its website ([www.loudoun.gov/stormwater](http://www.loudoun.gov/stormwater)), which provides citizens with information about the stormwater program. Page resources include the County's Stormwater Management Ordinance, annual progress reports, MS4 Program Plan, news releases for upcoming events, useful educational information, and links to other pages with educational and environmental information.

The County website also links to the County's Online Mapping System, which can be used to view a variety of land-based information. Citizens can access maps depicting the entire county stormwater system, floodplain mapping, planning and zoning districts, environmental data, watersheds, and more.

The Department of General Services maintains a Speakers' Bureau to provide sources knowledgeable about county stormwater issues for public gatherings, such as Homeowners' Association (HOA) meetings.

**Minimum Control Measures (MCMs)  
Public Education and Outreach**

The County is also a member of the Northern Virginia Clean Water Partners (NVCWP). Through that organization, the county participates in an annual media campaign to educate the public on stormwater concerns.

***Public Education and Outreach BMPs***

**BMP 1A: Develop Written Materials to Distribute to Target Audiences for Each of the High Priority Water Quality Issues Identified in the PEOP**

Objective: Ensure the County has an adequate array of written materials to effectively reach identified target audiences

Measurable Goal: Produce written materials for each of the high priority water quality issues in sufficient time to allow distribution during Permit Year 2

Necessary Documents: None

Responsible Party: Department of General Services

Schedule: Materials to be developed by the third quarter of Permit Year 2

Items to Report: List of additional materials developed

Method of Evaluation: Review of the availability and effectiveness of public education materials to target stormwater management, water quality, and stormwater pollution prevention messages to the County's target audiences

**BMP 1B: Conduct Training for Target Audiences for Each of the High Priority Water Quality Issues Identified in the PEOP**

Objective: Conduct training for target audience designed to reach 20% of target audience(s) for each identified high-priority water quality issue, as detailed in the PEOP, with relevant message(s) and associated educational and outreach materials

Measurable Goal: Confirmation that sufficient training effort was made to reach 20% of target audience(s) on the three identified high-priority water quality issues identified in the PEOP

The three high-priority water quality issues identified in the 2014 PEOP are, as follows:

- Bacteria impacts to water quality
- Illicit discharges from commercial and community swimming pools
- Nutrient impacts to water quality

**Minimum Control Measures (MCMs)  
Public Education and Outreach**

<u>Necessary Documents:</u>	PEOP
<u>Responsible Party:</u>	Department of General Services
<u>Schedule:</u>	Ongoing program starting with Permit Year 2
<u>Items to Report:</u>	Items required in the MS4 General Permit, as follows: <ul style="list-style-type: none"><li>• Description and estimation of their associated target audience(s)</li><li>• Method of training (take-home training slides, in person training, etc.)</li><li>• Associated educational and outreach materials</li><li>• Number of trainings</li><li>• Number of materials distributed/individuals reached</li><li>• Planned PEOP activities for next reporting period</li></ul>
<u>Method of Evaluation:</u>	Observations and evaluations for the following key points in the process as described in PEOP: <ul style="list-style-type: none"><li>• Planning and Development</li><li>• Execution of Actions</li><li>• Target Audience Feedback</li><li>• Behavior Change and Evaluation Period</li></ul>

**BMP 1C: Deliver Stormwater or Water Quality Announcements through Broadcast Media**

<u>Objective:</u>	Reach as wide and diverse an audience as possible using public media to convey basic messages regarding household and public strategies for reducing stormwater pollution impacts and other related topics
<u>Measurable Goal:</u>	Reach of the NVCWP media campaign, in which the County participates, which broadcasts messages on public media (radio and/or other public media)
<u>Necessary Documents:</u>	End of year summary by NVCWP
<u>Responsible Party:</u>	Department of General Services
<u>Schedule:</u>	Ongoing program
<u>Items to Report:</u>	Number of announcements run per year, estimates of listening/viewing audience
<u>Method of Evaluation:</u>	Review of third party polling service results, if engaged by the NVCWP, and station estimates of audience reached with the Public Service Announcements (PSAs)

**Minimum Control Measures (MCMs)  
Public Education and Outreach**

**BMP 1D: Establish/Maintain Standard Delivery Points for Printed Stormwater Materials**

Objective: Provide a standard delivery and distribution point for printed education materials on proper household strategies for stormwater management, surface water quality improvements, and stormwater pollution prevention

Measurable Goal: Printed materials established and maintained at the Government Center and Public Libraries

Necessary Documents: Printed materials distributed

Responsible Party: Department of General Services

Schedule: Provide printed materials by the conclusion of Permit Year 2 and maintain throughout the remainder of the permit cycle

Items to Report: Number of distribution points utilized, as well as the number and type of printed materials supplied to each distribution point through the year

Method of Evaluation: Review number and type of materials distributed throughout the year to evaluate utilization of this media

**BMP 1E: Provide Public Access to Online Stormwater Materials**

Objective: Provide educational stormwater materials via an electronic, downloadable format on the County's Stormwater Management Program webpage or related County website pages

Topics will be the same as those delivered to printed distribution points (BMP 1D), covering general issues such as proper household strategies for stormwater management, surface water quality improvements, and stormwater pollution prevention

Measurable Goal: Posting on County's Stormwater Management Program webpage, or related County website pages, of downloadable materials used at printed distribution points (BMP 1D)

Necessary Documents: Materials utilized at printed distribution points (BMP 1D)

Responsible Party: Department of General Services

Schedule: Post downloadable materials used at printed distribution points (BMP 1D) by the conclusion of Permit Year 2

**Minimum Control Measures (MCMs)  
Public Education and Outreach**

Items to Report: Number of items available for download via the internet and number of visitors to the webpage

Method of Evaluation: Evaluate utility of this media for distribution of materials

**BMP 1F: Distribute Written Materials for High Priority Water Quality Issues to Reach the Target Audiences**

Objective: Provide educational stormwater materials via an electronic, downloadable format on the County's Stormwater Management Program webpage or related County website pages

Topics will be the same as those delivered to printed distribution points (BMP 1D), covering general issues such as proper household strategies for stormwater management, surface water quality improvements, and stormwater pollution prevention

Measurable Goal: Posting on County's Stormwater Management Program webpage, or related County website pages, of downloadable materials used at printed distribution points (BMP 1D)

Necessary Documents: Materials utilized at printed distribution points (BMP 1D)

Responsible Party: Department of General Services

Schedule: Post downloadable materials used at printed distribution points (BMP 1D) by the conclusion of Permit Year 2

Items to Report: Number of items available for download via the Internet, and number of visitors to the webpage

Method of Evaluation: Review number of downloads of material to evaluate utility of this media for distribution of materials

**BMP 1G: Evaluate and Update PEOP for Sediment Reduction Promotion**

Objective: To evaluate and update the existing PEOP, so it promotes methods to eliminate or reduce the discharge of sediment in the Goose Creek and Bull Run watersheds

Measurable Goal(s): Permit Year 3—Evaluate and update the PEOP so it includes methods to eliminate or reduce the discharge of sediment in the Goose Creek and Bull Run watersheds

Permit Year 4 & Permit Year 5—Perform public education and outreach activities that are designed to inform respective identified target audiences, 20% in the Goose Creek watershed and 50% in the Bull Run watershed, on methods to reduce or eliminate sediment discharge into the corresponding waters

**Minimum Control Measures (MCMs)  
Public Education and Outreach**

Permit Year 5—evaluate the PEOP program as required prior to reapplication for coverage under the MS4 General Permit

Necessary Documents: MS4 Program Plan, Comprehensive TMDL Action Plan, Existing PEOP materials

Responsible Party: Department of General Services

Schedule: Permit Year 3—Evaluate and update the PEOP so it includes methods to eliminate or reduce the discharge of sediment in the Goose Creek and Bull Run watershed

Permit Year 4 & Permit Year 5—Implement sufficient public education and outreach activities to reach 20% of the identified target audiences in the Goose Creek watershed and 50% of the identified target audiences in the Bull Run watershed

Permit Year 5—Reevaluate the updates to the PEOP as part of the MS4 Permit required PEOP evaluation prior to reapplication for coverage under the MS4 General Permit

Items to Report: Permit Year 3—A report of the adjustments made to the PEOP resulting from implementation of this BMP. The County will include a list of PEOP activities in its Permit Year 3 MS4 Annual Report that will be completed during Permit Year 4 that are designed to reach 20% of the target audiences in the Goose Creek watershed and 50% of the target audiences in the Bull Run watershed

Permit Year 4 & Permit Year 5—Report on the outreach activities conducted

Method of Evaluation: Written status report

**Minimum Control Measures (MCMs)  
Public Education and Outreach**

***BMP Summary Table***

**Table 3: Public Education and Outreach BMP Summary**

<b>BMP</b>	<b>Task</b>	<b>Permit Year Implement /Complete</b>	<b>Primary Responsible Party(ies)</b>	<b>Measurable Goal(s)/Report Item(s)</b>
1A	Develop Written Materials to Distribute to Target Audiences for Each of the High Priority Water Quality Issues Identified in the PEOP	Year 2*	Department of General Services	Produce written materials for each of the high priority water quality issues
1B	Conduct Training for Target Audiences for Each of the High Priority Water Quality Issues Identified in the PEOP	Year 2*	Department of General Services	Method of trainings, list of materials, # of trainings, # of materials distributed/ individuals reached
1C	Deliver Stormwater or Water Quality Announcements Through Broadcast Media	Year 1*	Department of General Services	# of announcements/ year and estimates of listening/ viewing audience
1D	Establish/Maintain Standard Delivery Points for Printed Stormwater Materials	Year 2*	Department of General Services	# of distribution points utilized and number/type of printed materials supplied/year
1E	Provide Public Access to Online Stormwater Materials	Year 2*	Department of General Services	# of items available for download, # of visitors to the webpage, and # of downloaded documents
1F	Distribute Written Materials for High Priority Water Quality Issues to Reach the Target Audiences	Year 2*	Department of General Services	# of items available for download via the Internet and # of visitors to the webpage
1G	Evaluate and Update the PEOP for Sediment Reduction Promotion	Year 3*	Department of General Services	Produce updated PEOP and perform outreach activities in Bull Run and Goose Creek Watersheds

\* Denotes ongoing programming once initiated

**Minimum Control Measures (MCMs)  
Public Involvement/Participation**

## **II. Public Involvement/Participation**

### ***Control Measure Requirements***

As operator of a regulated small MS4, the County shall maintain practices that meet the following goals:

1. Maintain an updated MS4 Program Plan, completing required updates at a minimum of once a year in conjunction with each annual report
2. Post the MS4 Program Plan on the County's webpage at a minimum of once a year and within 30 days of submittal of the annual report
3. Post copies of each annual report on its webpage within 30 days of its submittal and retain these copies on line for the duration of this permit
4. As part of the permit re-application process, the operator shall address how it considered the public comments received in the development of its MS4 Program Plan
5. Participate through promotion, sponsorship, or other involvement in a minimum of four local activities, annually
  - a. Activities shall be aimed at increasing public participation to reduce stormwater pollutant loads and/or improve water quality support of local restoration/clean-up projects, programs, groups, meetings, or other opportunities for public involvement

### ***Existing Program***

The County currently provides two ways for citizens to contact Stormwater Management staff regarding concerns or complaints: a stormwater telephone hotline and an online comment form. Both typically generate a response within two (2) business days.

The County also operates a passive Storm Drain Decal program, providing decals to citizens upon request. The purpose of the decal program is to provide opportunities, primarily for students, to participate in clean water activities while simultaneously informing citizens that water entering storm drains goes directly to the County's rivers.

Finally, the County's Stormwater Management Program webpages are a gateway for citizens to access information on public events, such as the annual Family Stream Day, via the County's calendar, as well as updates on public and private group events and opportunities via the Quick Links. The County maintains two Stormwater pages, each with specific information. The first page is maintained by the Department of General Services for their Stormwater Management Program; this page includes links to public outreach, the stormwater complaint form, the County ordinance, etc. The second page is maintained by the Department of Building and Development for their Water & Hydrology/Stormwater programs; this page includes a basic overview of the stormwater program and links to VDEQ's Stormwater Management page and a link to the Department of General Services Stormwater page.

**Minimum Control Measures (MCMs)  
Public Involvement/Participation**

***Public Involvement/Participation BMPs***

**BMP 2A: Provide Online Access to the MS4 Program Plan and Annual Reports**

Objective: To make the MS4 Program Plan and annual reports available online to the County citizens in multiple formats and multiple venues

Measurable Goal: Posting of downloadable copies of the MS4 Program Plan and annual reports on the County's Stormwater Management Program webpage

Necessary Documents: MS4 Program Plan and annual reports

Responsible Party: Department of General Services

Schedule: Both documents shall be available online within 30 days of submittal of each annual report

Items to Report: Date MS4 Program Plan and annual reports were posted online, and verification of a web link to them

Method of Evaluation: Verification that both documents were posted within the required time frame, verification the web link works, and verification of successful downloads of the posted documents

**BMP 2B: Issue Public Announcement and Comment Solicitation of MS4 Program Plan**

Objective: Inform County citizens of the availability of the MS4 Program Plan and provide those potentially affected by the MS4 Program Plan an opportunity to participate in the process via public commentary

Measurable Goal: Publicly announce that the proposed MS4 Program Plan is available for comment via platforms such as the County Stormwater Management Program webpage, and that public comment will be accepted

Public announcement/comment solicitation shall allow sufficient time for public comment and consideration of received comments, prior to the submittal of the MS4 Program Plan and registration statement to VDEQ for next permit reapplication (at least 90-days prior to permit expiration)

Necessary Documents: MS4 Program Plan

Responsible Party: Department of General Services

Schedule: Implement during Permit Year 4

**Minimum Control Measures (MCMs)  
Public Involvement/Participation**

Items to Report: Copy of public announcement/comment solicitation, list of venues to which announcement/solicitation was submitted, any public comments received and their consideration (last item submitted as part of next permit reapplication process)

Evaluation: Successful posting of public announcement/comment solicitation during Permit Year 4, number and type of public comments received, and evaluation of public comments

**BMP 2C: Maintain County-Owned Pet Waste Stations and Promote the Installation of Additional Pet Waste Stations at Select Public and Private Locations within the MS4 Permit Area**

Objective: Facilitate the removal of pet waste from County-owned public park sites and promote the installation of additional pet waste stations at select public and private locations within the MS4 permit area in efforts to reduce their contribution to excessive bacterial loads into impaired waters, particularly those with E. coli WLAs

Measurable Goal: Maintain the pet waste stations, including bags and receptacles, located on Department of Parks, Recreation & Community Services properties located in watersheds with E. coli WLAs

Promote the installation of additional pet waste stations at public and private locations within the MS4 permit area, particularly within watersheds with E. coli WLAs

Necessary Documents: None

Responsible Party: Department of General Services with assistance from Parks, Recreation & Community Services

Schedule: Pet waste stations to be maintained by the conclusion of Permit Year 2 and promotion of the installation of additional pet stations in public and private areas throughout the permit term

Items to Report: List of park properties containing stations that the County maintains and a brief description of how often maintenance is performed

List of promotional activities for the installation of additional pet waste stations at public and private locations within the MS4 permit area

**Minimum Control Measures (MCMs)  
Public Involvement/Participation**

Method of Evaluation: Review supplies consumed in park facilities to evaluate use of pet stations each year and evaluate whether there is an increase in usage after routine ongoing maintenance is provided

**BMP 2D: Participate in Four Local Activities**

Objective: Participate via promotion, sponsorship, or other involvement in a minimum of four local activities, annually

- a. Activities shall be aimed at increasing public participation to reduce stormwater pollutant loads and/or improve water quality
- b. Activities shall support local restoration/clean-up projects, programs, groups, meetings, or other opportunities for public involvement

Measurable Goal: Active participation in a minimum of four local activities

Necessary Documents: None

Responsible Party: Department of General Services

Schedule: Ongoing program

Items to Report: List of local activities in which County participated

Method of Evaluation: Review activities for their effectiveness in promoting public involvement and education/outreach

**Minimum Control Measures (MCMs)  
Public Involvement/Participation**

***BMP Summary Table***

**Table 4: Public Involvement/Participation BMP Summary**

<b>BMP</b>	<b>BMP/Task</b>	<b>Permit Year Implement /Complete</b>	<b>Primary Responsible Party(ies)</b>	<b>Measurable Goal(s)/Report Item(s)</b>
2A	Provide Online Access to the MS4 Program Plan and Annual Reports	Year 1*	Department of General Services	Date program posted, confirmation of formats available, and verification of web link
2B	Issue Public Announcement and Comment Solicitation of MS4 Program Plan	Year 4	Department of General Services	Copy of public announcement and where submitted, any public comments received with County's considerations
2C	Maintain County-Owned Pet Waste Stations and Promote the Installation of Additional Pet Waste Stations at Select Public and Private Locations within the MS4 Permit Area	Year 2*	Department of General Services with assistance from Parks, Recreation & Community Services	Number of stations installed, list of park properties containing stations, and # of promotional activities for the installation of additional pet waste stations
2D	Participate in Four Local Activities	Year 1*	Department of General Services	List of local activities in which County participated

\* Denotes ongoing programming once initiated

**Minimum Control Measures (MCMs)  
Illicit Discharge Detection and Elimination (IDDE)**

### **III. Illicit Discharge Detection and Elimination (IDDE)**

#### ***Control Measure Requirements:***

As operator of a regulated small MS4, the County shall:

1. Maintain an accurate storm sewer system map and associated information table
  - a. The map shall show, to the MEP, the location and unique identifier of all known MS4 outfalls, the names and locations of all surface waters that receive discharges from those outfalls, and the associated Hydrologic Unit Code (HUC)
2. For each MS4 outfall, the associated information table shall include:
  - a. Its unique identifier
  - b. Estimated MS4 acreage served
  - c. Name of the receiving surface water
    - i. Indication if surface water is considered impaired per the 2010 303(d)/305(b) Water Quality Integrated Report
  - d. Name of any applicable TMDL(s)
3. Effectively prohibit, to the MEP through ordinance or other legal mechanism, non-stormwater discharges into the storm sewer system to the extent allowable under federal, state, or local law, regulation, or ordinance
4. Develop, implement and update, when appropriate, written procedures to detect, identify, and address unauthorized non-stormwater discharges, including illegal dumping, to the County's MS4
5. Promote, publicize, and facilitate public reporting of illicit discharges into or from its MS4
6. Include within their MS4 Program Plan all procedures developed to detect, identify, and address non-stormwater discharges to the County's MS4

#### ***Existing Program***

As part of the Stormwater Management Ordinance, Chapter 1096 adopted in 2003, and most recently updated in May 2014, illicit discharges were defined, prohibited, and penalties established for violations. Subsequently, a Standard Operating Procedure (SOP) for enforcing violations was adopted by the Department of General Services. In addition, the County has two ordinances in effect that address the proper prevention and management of solid waste and litter (Chapter 1080 and 1088, Codified Ordinances of Loudoun County), which both include specific prohibitions for surface water contamination, inspection measures, and enforcement options. The County has also drafted and adopted a Hazardous Materials Emergency Response Plan as required under Title III Superfund Amendments and Reauthorization Act (SARA), PL 99-499.

The County storm sewer system was initially mapped and outfalls identified during a period running from 2003 to 2005. The system is updated approximately every six months to identify new construction, and that process will continue into the foreseeable future.

Regulated outfalls have been ranked, based on surrounding land uses, for the likelihood of an illicit discharge. Dry weather screening has historically been conducted on those outfalls with a high ranking. Those outfalls with a moderate ranking are field checked for evidence

**Minimum Control Measures (MCMs)  
Illicit Discharge Detection and Elimination (IDDE)**

of illicit discharge activity within the watershed. The County currently operates a citizen hotline and online citizen complaint form for reporting illicit discharges and related concerns.

The County originally developed its IDDE procedures in 2003. These procedures were refined, with additional attention focused on detection methods, in 2010 and 2011. The County's IDDE procedures were updated in May 2014 in accordance with the Section II B 3 c requirements of the County's discharge permit, and again in April 2016 to take into account more efficient procedures. In April 2017, the County published an addendum to the April 2017 IDDE procedure to allow for dry weather screening outfall selection based on industry types identified as having a high likelihood for illicit discharge based upon historic dry weather screening data, in addition to the land use based selection.

***IDDE BMPs***

**BMP 3A: Maintain County Storm Sewer System Map**

Objective: Maintain an accurate storm sewer system map in order to identify MS4 outfall discharge points to waters of the Commonwealth

Measurable Goal: Semi-annual updates to the County Storm Sewer System Map basis shall include:

1. All known MS4 outfalls
2. Their unique identifiers
3. Associated HUCs
4. Names and locations of all waters receiving MS4 outfall discharges

Necessary Documents: None

Responsible Party: Department of General Services

Schedule: Ongoing program

Items to Report: Dates of storm sewer map updates and the current map

Method of Evaluation: Review of system map to confirm it remains accurate and current

**BMP 3B: Maintain MS4 Outfall Data Information Table**

Objective: Maintain specific and required information related to each MS4 outfall

**Minimum Control Measures (MCMs)  
Illicit Discharge Detection and Elimination (IDDE)**

<u>Measurable Goal:</u>	Semi-annual update of the data in the MS4 Outfall Data Information Table, coinciding with the updates of the County Storm Sewer System Map, to ensure the table is up to date and contains the following data for each MS4 outfall: <ol style="list-style-type: none"><li>1. Its unique identifier</li><li>2. Estimated MS4 acreage served</li><li>3. Name of the receiving surface water<ol style="list-style-type: none"><li>a. Indication if surface water is considered impaired per the 2010 303(d)/305(b) water quality integrated report</li></ol></li><li>4. Name of applicable TMDL(s)</li></ol>
<u>Necessary Documents:</u>	2010 303(d)/305(b) list
<u>Responsible Party:</u>	Department of General Services
<u>Schedule:</u>	Data table created by the conclusion of Permit Year 4 with updates continuing as an ongoing program thereafter
<u>Items to Report:</u>	Dates of MS4 Outfall Data Information Table updates. In Permit Year 4 the current Data Information Table is to be included in the Annual Report
<u>Method of Evaluation:</u>	Review of GIS Data Information Tables associated with County Storm Sewer System Map and MS4 Outfall Data Information

**BMP 3C: Conduct System Screening for Illicit Discharge Detection**

<u>Objective:</u>	Effectively and efficiently identify, to the MEP, illicit discharges to the County's MS4
<u>Measurable Goal:</u>	Continue dry weather screening of MS4 outfall pipes and source reconnaissance per the revised IDDE procedures
<u>Necessary Documents:</u>	IDDE Procedure (May 2014)
<u>Responsible Party:</u>	Department of General Services
<u>Schedule:</u>	Ongoing program, with implementation of revised IDDE procedures by the start of Permit Year 2
<u>Items to Report:</u>	Total number of outfalls screened, screening results, and detail of any related follow-up actions. Results of the source reconnaissance effort and detail of any related follow-up actions
<u>Method of Evaluation:</u>	Review of IDDE procedures, including dry weather screening and source reconnaissance techniques, and their success in detecting illicit discharges to the County's MS4

**Minimum Control Measures (MCMs)  
Illicit Discharge Detection and Elimination (IDDE)**

**BMP 3D: Investigate and Address Illicit Discharges**

Objective: Eliminate, to the MEP, illicit discharges to the MS4 based on the County's revised IDDE procedures established per Section II B 3 c of the MS4 General Permit

Measurable Goal: Implement the County's IDDE procedures to address suspected illicit discharges discovered through dry weather screening, observations of County staff, or calls and reports from the general public

Necessary Documents: IDDE Procedure (April 2016), County Stormwater Management Ordinance (Chapter 1096, Codified Ordinances of Loudoun County, §1096.04: Violations)

Responsible Party: Department of General Services

Schedule: Ongoing program, with implementation of revised IDDE procedures (May 2014) at the start of Permit Year 2

Items to Report: Summary of each investigation of any suspected illicit discharge as follows:

1. Date(s) suspected discharge observed and/or reported
2. Results of the investigation
3. Any follow-ups to the investigation
4. Resolution of investigation
5. Date investigation completed/closed

Method of Evaluation: Review of IDDE procedures and their success in finding and eliminating illicit discharges to the County's MS4

**BMP 3E: Notify Downstream MS4 Operators of Any Physical Interconnections**

Objective: Notify downstream MS4 operators, in writing, of any physical interconnections to the County's MS4

Measurable Goal: Written notification of any applicable downstream MS4 operators of storm sewer systems physically interconnected with the Loudoun County MS4

Necessary Documents: County Storm Sewer System Map

Responsible Party: Department of General Services

Schedule: Completion by end of Permit Year 4

Items to Report: List of any written notifications to applicable downstream MS4 operators

**Minimum Control Measures (MCMs)  
Illicit Discharge Detection and Elimination (IDDE)**

Method of Evaluation: Successful notification of any applicable downstream MS4 operators. Failure to perform this task should trigger a review of the process for improvements/adjustments

***BMP Summary Table***

**Table 5: IDDE BMP Summary**

<b>BM P</b>	<b>BMP/Task</b>	<b>Permit Year Implement /Complete</b>	<b>Primary Responsible Party(ies)</b>	<b>Measurable Goal(s)/Report Item(s)</b>
3A	Maintain County Storm Sewer System Map	Year 1*	Department of General Services	Dates of storm sewer map updates and the current map
3B	Maintain MS4 Outfall Data Information Table	Year 4*	Department of General Services	Dates of MS4 Outfall Data Information Table updates and current data table
3C	Conduct System Screening for Illicit Discharge Detection	Year 1*	Department of General Services	Total number of outfalls screened, screening results, and detail of any related follow-up actions
3D	Investigate and Address Illicit Discharges	Implement Revised Procedure in Year 2*	Department of General Services	Investigation summary of any suspected illicit discharges
3E	Notify Downstream MS4 Operators of Any Physical Interconnections	Year 4	Department of General Services	List of written notification to applicable downstream MS4 operators

\* Denotes ongoing programming once initiated

**Minimum Control Measures (MCMs)  
Construction Site Stormwater Runoff Control**

## **IV. Construction Site Stormwater Runoff Control**

### ***Control Measure Requirements:***

As operator of a regulated small MS4, the County must develop, implement, and enforce procedures to reduce pollutants in stormwater runoff to the regulated small MS4 from construction activities that result in a land disturbance of greater than or equal to 5,000 square feet or in accordance with the Virginia Erosion and Sediment Control Law requirements. The procedures shall include:

1. A description of the legal authorities utilized to ensure compliance with the MCM related to construction site stormwater runoff control
2. Written plan review of procedures and all associated documents utilized in the plan review
3. Written inspection procedures for land disturbing activities, with all associated documents utilized during inspections, including an inspection schedule
4. Public promotion of a mechanism to receive and follow-up on complaints regarding regulated land-disturbing activities with potential water quality and compliance issues
5. Written procedures for compliance and enforcement, including a progressive compliance and enforcement strategy, where appropriate
6. The roles and responsibilities of each of the operator's departments, divisions, or subdivisions in implementing the MCMs related to construction site stormwater runoff control

### ***Existing Program***

The County currently operates an E&S Program that has earned the rating of "consistent" by the Virginia Department of Conservation and Recreation (DCR), which was most recently confirmed in November 2007.

The E&S Program includes an E&S ordinance, Chapter 1220 of the Codified Ordinances of Loudoun County (Erosion Control), updated in 2011. The purpose of this chapter is to prevent the degradation of properties, stream channels, waters and other natural resources of Loudoun County by establishing requirements for the control of soil erosion, sediment deposition and stormwater runoff and by establishing procedures whereby these requirements shall be administered and enforced and contribute thereby to the health, safety and general welfare of the citizens of Loudoun County.

Construction site operators are required to have an approved E&S plan prior to commencement of land disturbing activities. E&S plans are required to be compliant with the minimum standards of the E&S ordinance. County E&S plan reviewers, certified by the state, ensure the adequacy of the submitted plans.

For construction activities that result in a land disturbance of greater than one acre, a Virginia Stormwater Manager Program (VSMP) General Permit for Stormwater Discharges from Construction Activities is required. The County will not issue a land disturbance permit until the VSMP requirements have been met.

**Minimum Control Measures (MCMs)  
Construction Site Stormwater Runoff Control**

The *Loudoun County Online Citizen Response* program, *Stormwater Complaint Hotline*, and online *Stormwater Complaint Form* are all managed by the County to encourage citizens to call on a variety of issues such as: erosion, sediment control, stormwater management, water quality, and other compliance issues or concerns. Information on or access to these programs is available online at the County’s main website (service request) or the County’s Stormwater Management Program webpage. Complaints are routed to the appropriate department for follow-up.

The Department of Building and Development performs both the E&S plan reviews and approvals, E&S inspections, and any related enforcement actions. All enforcement actions are handled collaboratively with the County Attorney’s Office, and the E&S inspections are maintained under a VDEQ approved alternate inspection program. As such, the inspection schedule is derived by prioritizing sites based on disturbed area, slope, distance to a watercourse, buffer, vegetation, and distance to downstream properties. All inspections are conducted using a standardized checklist by certified and dedicated inspectors, whose only task is to inspect the E&S controls. Building inspections and engineering inspections are conducted by other certified personnel.

***Construction Site Stormwater Runoff Control BMPs***

**BMP 4A: Administer County E&S Program**

Objective: Ensure, to the MEP, that administration and implementation of County E&S Program complies with the Virginia Erosion and Sediment Control Law and attendant Regulations

Measurable Goal: Maintain a rating of “consistent” for the County’s E&S Program during permit cycle

Necessary Documents: Most current version of documents, as follows:

- a. Facilities Standards Manual (FSM)
- b. E&S Ordinance (County Code Chapter 1220)
- c. Grading Permit Application
- d. Plan Review Checklist
- e. Site Inspection Checklist
- f. Compliance and Enforcement Policies

Responsible Party: Department of Building and Development

Schedule: Ongoing program

Items to Report: For each annual report, the following shall be tracked and submitted:

- a. Total number of regulated land-disturbing activities
- b. Total number of acres disturbed
- c. Total number of inspections conducted
- d. A summary of the enforcement actions taken, including the type and total number of enforcement actions taken during the reporting period

**Minimum Control Measures (MCMs)  
Construction Site Stormwater Runoff Control**

Method of Evaluation: County self-audit procedures (BMP 4E) and periodic County program audit by VDEQ

- a. Should the County be found inconsistent during a permit cycle, the County will work with VDEQ to develop a Corrective Action Agreement (CAA) suitable to both the County and VDEQ, and implement the CAA in accordance to the schedule included in the CAA

**BMP 4B: Ensure VSMP Permits are Issued for Projects Meeting State Established Thresholds**

Objective: Verify compliance with construction site management protocols and BMPs for land disturbing activities, meeting the permit thresholds

Measurable Goal: Ensure VSMP permits are issued for those projects meeting the VSMP threshold requirements

Necessary Documents: Copies of the VSMP General Permits issued for Stormwater Discharges from Construction Activities and the County Grading Permit Application

Responsible Party: Department of Building and Development

Schedule: Ongoing program

Items to Report: Number of grading permits approved and total number of VSMP Permits issued

Method of Evaluation: N/A

**BMP 4C: Implement Procedures to Identify Non-Fileers of Grading Permits**

Objective: Ensure, to the MEP, land disturbing activities in the County are properly permitted

Measurable Goal: Implementation shall include two conceptual tools:

- a. E&S hotline, for receipt of information from the public
- b. County employee “all eyes” program, to note un-permitted land disturbances

Necessary Documents: E&S hotline call records and enforcement/corrective action records

Responsible Party: Department of Building and Development

Schedule: Ongoing program

**Minimum Control Measures (MCMs)  
Construction Site Stormwater Runoff Control**

Items to Report: Number of non-filers identified each year; number of enforcement/corrective actions initiated each year

Method of Evaluation: Review of established and implemented procedures to evaluate success in identifying non-filers for required County grading permits

**BMP 4D: Provide Training for County Construction Site Inspection Staff**

Objective: Ensure County E&S Program staff maintain the proper certifications, based on their job descriptions

Measurable Goal: E&S Program staff remain certified as required by Virginia Erosion and Sediment Control Law, attendant regulations, and the County's E&S program

Necessary Documents: Certification tracking

Responsible Party: Department of Building and Development

Schedule: Ongoing program-staff are required to re-certify on a rolling schedule, at least once every three years

Items to Report: Total number of staff members and number of certified staff for E&S combined administration, plan review, and inspection

Method of Evaluation: County self-audit procedures (BMP 4E) and periodic County E&S Program audits by VDEQ

**BMP 4E: Audit County Construction Site Inspections**

Objective: Ensure, to the MEP, E&S Inspection staff are adequately and consistently evaluating and inspecting open project sites that meet the regulatory requirements for land disturbance

Measurable Goal: Perform annual auditing program which reviews and critiques selected E&S inspections, throughout the year, to ensure their consistency/appropriateness

Necessary Documents: E&S inspection audit policy and checklist

Responsible Party: Department of Building and Development

Schedule: Ongoing program

Items to Report: Number of E&S inspection audits and findings, and program documentation for audits conducted each year

**Minimum Control Measures (MCMs)  
Construction Site Stormwater Runoff Control**

Method of Evaluation: Review audit procedures and outcomes to guarantee E&S Inspection staff are adequately and consistently evaluating and inspecting open project sites that meet the regulatory requirements for disturbed area

***BMP Summary Table:***

**Table 6: Construction Site Stormwater Runoff Control BMP Summary**

<b>BM P</b>	<b>BMP/Task</b>	<b>Permit Year Implement/ Complete</b>	<b>Primary Responsible Party(ies)</b>	<b>Measurable Goal(s)/Report Item(s)</b>
4A	Administer County E&S Program	Year 1*	Department of Building & Development	Maintain E&S Program rating of “consistent”, annual summary report per requirements
4B	Ensure VSMP Permits are Issued for Projects Meeting State Established Thresholds	Year 1*	Department of Building & Development	# of grading permits approved and total # of VSMP Permits issued
4C	Implement Procedures to Identify Non-Filers of Grading Permits	Year 1*	Department of Building & Development	# of grading permits approved and total # of enforcement/ corrective actions initiated
4D	Provide Training for County Construction Site Inspection Staff	Year 1*	Department of Building & Development	Total # of staff members and # of certified staff by noted E&S tasks
4E	Audit County Construction Site Inspections	Year 1*	Department of Building & Development	# of E&S inspection audits, findings, and program documentation

\* Denotes ongoing programming once initiated

**Minimum Control Measures (MCMs)  
Post-Construction Stormwater Management**

## **V. Post-Construction Stormwater Management**

### ***Control Measure Requirements***

As operator of a regulated small MS4, the County shall:

1. Include a list of the applicable legal authorities that ensure compliance with minimum control measure for post construction stormwater management in new development and development on prior developed lands
2. Include written policies and procedures utilized to ensure that stormwater management facilities are designed and installed in accordance with required design criteria for stormwater runoff controls
3. Include written inspection policies and procedures utilized in conducting inspections
4. Include written procedures for inspection, compliance and enforcement to ensure maintenance is conducted on private stormwater facilities to ensure long-term operation in accordance with approved design
5. Include written procedures for inspection and maintenance of operator-owned stormwater management facilities
6. Include the roles and responsibilities of each of the operator's departments, divisions, or subdivisions in implementing this minimum control measure effort including any written agreements with other entities implementing portions of it

### ***Existing Program***

The County has an adopted FSM which addresses the design of stormwater conveyance systems and related BMPs. In addition to some specific supplemental standards, the FSM adopts the most current versions of the VDOT Drainage Manual, the Virginia Erosion and Sediment Control Handbook, Virginia Stormwater BMP Clearinghouse Website ([www.vwrrc.vt.edu/swc](http://www.vwrrc.vt.edu/swc)), and the Virginia Stormwater Management Handbook as the County's routine reference sources. Low Impact Design (LID) methods are also encouraged in the Zoning Ordinance, the County General Plan, and the FSM.

Chapter 1096 of the Codified Ordinances of Loudoun County, Stormwater Management, was adopted October 20, 2003 and most recently revised in May 2014. It established the stormwater management program. Under the ordinance, the County assumes maintenance responsibilities for those portions of the storm sewer system located within drainage easements dedicated to the County. The ordinance provides a process for property owners to transfer privately-owned facilities to the County for long-term maintenance. Based on the latest revision to the ordinance, there are written policies and procedures ensuring stormwater management facilities are designed and installed in accordance with regulations. For some manufactured stormwater management facilities, maintenance responsibility remains with the property owner. Further, the ordinance created an enforcement capability to certify that those facilities remaining under private control are regularly inspected and maintained.

The County's current maintenance program includes an annual inspection of all BMPs. Once every three years, a more thorough structural inspection is performed on the wet and dry stormwater management ponds. All other stormwater facilities are inspected on a five-

**Minimum Control Measures (MCMs)  
Post-Construction Stormwater Management**

year inspection cycle. Policies and procedures regarding inspection and maintenance of privately-owned and operator-owned stormwater facilities are located in Chapter 1096 of the County's ordinances and Chapter 5 (Sections 5.225 and 5.230) of the FSM.

The Department of Building and Development is responsible for review, approval, and construction inspection of stormwater management facilities. Post-construction inspection and maintenance of stormwater management facilities, in both new development and re-development, is the responsibility of the Department of General Services.

***Post-Construction Stormwater Management BMPs***

**BMP 5A: Require Permanent Post-Construction BMPs per FSM**

**Objective:** Require permanent post-construction BMPs for stormwater runoff from land development projects, within the County, as provided in the County's FSM, as follows:

- a. FSM Chapter Five (Sections 5.225 and 5.230) outlines the County's design, implementation, and construction requirements for the management of stormwater quantity and quality runoff through the use of structural and non-structural stormwater BMPs
- b. The FSM directly references the latest requirements and guidance found in the VDOT Drainage Manual, Virginia Erosion and Sediment Control Handbook, Virginia Stormwater BMP Clearinghouse Website ([www.vwrrc.vt.edu/swc](http://www.vwrrc.vt.edu/swc)), and Virginia Stormwater Management Handbook

**Measurable Goal:** Ensure post-construction stormwater runoff from land development projects, both quantity and quality, meets the requirements of the FSM through the current permit cycle

**Necessary Documents:** FSM, Chapter Five

**Responsible Party:** Department of Building and Development

**Schedule:** Ongoing program

**Items to Report:** Information required for updating the inventory of permanent post-construction BMPs that discharge to the regulated small MS4, as detailed in BMP 5F

**Method of Evaluation:** Review County's FSM and stormwater management post-construction BMP report to evaluate effectiveness in requiring post-construction BMPs, both quantity and quality, with adjustments/alternatives to be determined, as needed

**Items to Report:** Findings of FSM and ordinance review and copies of any initiated amendments, if applicable, to the ordinance

**Minimum Control Measures (MCMs)  
Post-Construction Stormwater Management**

Method of Evaluation: Review of FSM and County Stormwater Management Ordinance (Chapter 1096, Codified Ordinances of Loudoun County)

**BMP 5B: Inspect Permanent Post-Construction Stormwater BMPs**

Objective: Ensure, to the MEP, that the County's permanent post-construction stormwater management facilities are functioning as designed for stormwater runoff quality and quantity management

Measurable Goal: The County will perform annual inspections of the permanent post-construction stormwater management BMPs within the County that are situated outside of the VDOT maintained right-of-way, Dulles Greenway property and right-of-way, Dulles International Airport property and right-of-way, and the County's incorporated towns

Necessary Documents: Stormwater Management Ordinance (Chapter 1096, Codified Ordinances of Loudoun County) and County stormwater facility inspection checklist

Responsible Party: Department of General Services

Schedule: Ongoing program

Items to Report: Stormwater management facility inspection finding summary

Method of Evaluation: N/A

**BMP 5C: Provide Long-Term Maintenance for Operator-Owned BMPs**

Objective: Provide long-term maintenance, as necessary, so that permanent stormwater facilities for which the County has primary maintenance responsibility are functioning to their original design capabilities

Measurable Goal: Maintenance performed, as necessary, so applicable facilities are functioning to original design capabilities

Necessary Documents: Stormwater management facility inspection findings

Responsible Party: Department of General Services

Schedule: Ongoing program

Items to Report: Stormwater management facility maintenance activity

Method of Evaluation: N/A

**Minimum Control Measures (MCMs)  
Post-Construction Stormwater Management**

**BMP 5D: Require Adequate Long-Term Maintenance for Privately Maintained BMPs**

Objective: Ensure, to the MEP, that permanent stormwater facilities for which the property owner has primary maintenance responsibility are receiving adequate long-term maintenance to function at their original design capability

Measurable Goal: Notify property owners responsible for maintaining stormwater management facilities of those deficiencies, discovered during County inspections, keeping the facility from functioning to their original design capability utilizing enforcement procedures outlined in Chapter 1096, Codified Ordinances of Loudoun County

Necessary Documents: Stormwater Management Ordinance (Chapter 1096, Codified Ordinances of Loudoun County)

Responsible Party: Department of General Services

Schedule: Start in Permit Year 2

Items to Report: Stormwater management facility maintenance inspection tracking and enforcement documentation for privately maintained stormwater facilities for the permit year

Method of Evaluation: Review record of maintenance execution based on requirements conveyed in inspection reports submitted on facilities for which the property owner has primary maintenance responsibilities

**BMP 5E: Develop Methods to Address Individual Residential Lot Special Criteria**

Objective: Develop standardized and enforceable methods for the long-term maintenance of stormwater management facilities designed to treat runoff from individual residential lots. Note: As of yet, no facilities of this type have been submitted for approval within the County's MS4

Measurable Goal: Create the necessary mechanisms for handling the long-term maintenance of stormwater management facilities designed to treat runoff from individual residential lots

Necessary Documents: MS4 General Permit, MS4 Program Plan, and FSM

Responsible Party: Department of Building and Development, Department of General Services, County Attorney's Office, and FSM Public Review Committee

Schedule: Completion by end of Permit Year 2

**Minimum Control Measures (MCMs)  
Post-Construction Stormwater Management**

Items to Report: An explanation of the enforceable methods developed

Method of Evaluation: Review the effectiveness of the methods

**BMP 5F: Provide Training for County Inspection Staff**

Objective: Ensure, to MEP, that the County's inspection personnel and inspection contractors are adequately trained in both the mechanics/functionality of the County's stormwater management facilities as well as the safety and field awareness procedures necessary to operate safely. The training program will facilitate the County's efforts to ensure that post-construction stormwater management facilities are functioning as designed for stormwater runoff quality and quantity management

Measurable Goal: Annual training on permanent stormwater management facility functionality and inspection procedures for County inspection staff

Necessary Documents: Stormwater management facility inspection training agenda, course outline, and attendance roster

Responsible Party: Department of General Services

Schedule: Ongoing program

Items to Report: Stormwater management facility inspection training agenda and attendance roster

Method of Evaluation: Pre- and post-training evaluations for maintenance inspection staff

**BMP 5G: Create and Maintain an Electronic Database of All Permanent Stormwater Management Facilities**

Objective: Create and maintain an electronic database of certain features associated with all structural, post-construction stormwater management facilities located within the County

Measurable Goal: Create and maintain the required database

Necessary Documents: Inventory of permanent structural stormwater management facilities discharging to the regulated small MS4; GIS; design drawings, if available; list of impaired waters; records detailing maintenance responsibility; and most recent inspection results

Responsible Party: Department of General Services, with assistance from Department of Building and Development

Schedule: Ongoing program

**Minimum Control Measures (MCMs)  
Post-Construction Stormwater Management**

Items to Report: A list of stormwater management facilities brought online and taken offline during each reporting year that includes the following information:

- a. Facility type
- b. Geographic location (address or latitude and longitude)
- c. Number of acres treated by the facility
  - i. With breakdown of pervious and impervious acres
- d. Date the facility was brought on line
- e. Sixth order hydrologic unit code (HUC)
  - i. Name of any impaired water segments within each HUC to which the facility discharges
- f. Operator- or privately-owned
  - i. If privately-owned, whether maintenance agreement exists
- g. Date of operator's most recent inspection

Method of Evaluation: Conduct quality control (i.e., spot check) of database entries made within the permit year to ensure data accuracy

**BMP 5H: Maintain County Facility Inspection Databases**

Objective: Track and report on the findings and eventual outcomes of the County stormwater management facility inspection program. Data collected will provide the opportunity to track its performance in ensuring the proper operation and maintenance of structural, post-construction stormwater management facilities

Measurable Goal: Maintenance of County stormwater management facility inspection database information, including findings and outcomes from the inspection process during each year of the permit cycle

Necessary Documents: County's database of permanent stormwater management facilities and associated inspection reports

Responsible Party: Department of General Services

Schedule: Ongoing program

Items to Report: Summary report of inspection findings and outcomes each year of the permit cycle

Method of Evaluation: N/A

**Minimum Control Measures (MCMs)  
Post-Construction Stormwater Management**

***BMP Summary Table:***

**Table 7: Post-Construction Stormwater Management BMP Summary**

<b>BM P</b>	<b>BMP/Task</b>	<b>Permit Year Implement /Complete</b>	<b>Primary Responsible Party(ies)</b>	<b>Measurable Goal(s)/Report Item(s)</b>
5A	Require Permanent Post-Construction BMPs per FSM	Year 1*	Department of Building and Development	Implement and track post-construction stormwater management BMPs identified in FSM
5B	Inspect Permanent Post-Construction Stormwater BMPs	Year 1*	Department of General Services	Annual stormwater management facility inspection summary
5C	Provide Long-Term Maintenance for Operator-Owned BMPs	Year 2*	Department of General Services	Long-term County maintenance of BMPs to ensure functioning as designed
5D	Require Adequate Long-Term Maintenance for Privately Maintained BMPs	Year 2*	Department of General Services	Notification/enforcement to ensure long-term private maintenance of BMPS to ensure functioning as designed
5E	Develop Methods to Address Individual Residential Lot Special Criteria	Year 2	Department of Building and Development and Department of General Services	Explanation of enforceable methods developed
5F	Provide Training for County Inspection Staff	Year 1*	Department of General Services	Stormwater management facility inspection training agenda and attendance roster
5G	Create and Maintain an Electronic Database of All Permanent Stormwater Management Facilities	Year 1*	Department of General Services	Create the required database
5H	Maintain County Facility Inspection Databases	Year 1*	Department of General Services	Track and report findings and results of facility inspections

\* Denotes ongoing programming once initiated

**Minimum Control Measures (MCMs)  
Pollution Prevention/Good Housekeeping for Municipal Operations**

## **VI. Pollution Prevention/Good Housekeeping for Municipal Operations**

### ***Control Measure Requirements***

As operator of a regulated small MS4, the County shall develop and implement written procedures designed to minimize or prevent pollution discharge, to the MEP, from daily operations, equipment maintenance, and application, storage, and disposal of pesticides, herbicides, and fertilizers. The written procedures shall be designed to:

1. Prevent illicit discharges
2. Ensure the proper disposal of waste materials
3. Prevent the discharge of municipal vehicle wash water into the MS4 without authorization under a separate VPDES permit
4. Prevent the discharge of wastewater into the MS4 without authorization under a separate VPDES permit
5. Require the implementation of BMPs when discharging pumped water from utility construction and maintenance activities
6. Minimize the pollutants in stormwater runoff from bulk storage areas through the use of BMPs
7. Prevent pollutant discharge into the MS4 from leaking municipal automobiles and equipment
8. Ensure the application of materials, including fertilizers and pesticides, is conducted in accordance with the manufacturer's recommendations

In addition, after identifying the high-priority municipal facilities, Stormwater Pollution Prevention Plans (SWPPPs) will be developed and implemented for identified facilities per the schedule in Table 1 of the MS4 General Permit.

For those municipal sites with an acre or more of contiguous area that is receiving nutrients, nutrient management plans (NMPs) will be developed and implemented per the schedule in Section II B 6 c 1 a of the MS4 General Permit.

Finally, the operator will provide appropriate biennial training and ensure applicable employees maintain their required certifications. Training shall be per the County's 2014 Training Program and Schedule which contains the appropriate elements of Section II B 6 d of the MS4 General Permit.

### ***Existing Program***

Beginning with the initial NPDES Phase II Stormwater Management Plan, the County has identified efforts to address its good housekeeping practices and prevent stormwater pollution from County operated sites. In December 2002, site audits were conducted at five County-operated facilities which, while not subject to NPDES industrial permitting requirements for stormwater runoff, were initially identified as susceptible to stormwater pollution. This initial assessment was based, primarily, on the activities undertaken at each facility and the materials stored at these five facilities.

**Minimum Control Measures (MCMs)  
Pollution Prevention/Good Housekeeping for Municipal Operations**

Upon completion of the five (5) facility audit, which was conducted using protocols and guidelines established by the US EPA in EPA 832-R-92-006 for SWPPP development, the County selected two facilities for voluntary SWPPP development: the Central Warehouse/Maintenance Facility and the Parks, Recreation & Community Services Warehouse/Maintenance Facility. These facilities were selected based on the activities on site, materials stored, susceptibility of those activities/materials to stormwater pollution, and that no separate permit existed for either facility. These SWPPPs were developed using the same US EPA guidance as that used in the initial site evaluations, and were completed in November, 2003. On July 21, 2009, an additional voluntary SWPPP was developed for Fire and Rescue’s training facility. In 2014, an equipment wash-down pad was constructed at the Parks, Recreation and Community Services (PRCS) Maintenance Facility.

***Pollution Prevention/Good Housekeeping for Municipal Operations BMPs***

**BMP 6A: Develop and Implement SWPPPs for Identified “High Priority” Facilities**

Objective: Develop SWPPPS for existing County-owned high-priority facilities with a high likelihood of discharging pollutants that were identified in Permit Year 1

Measurable Goal: Development of SWPPPs for identified County-owned high-priority facilities

Necessary Documents: Facility SWPPPs

Responsible Party: Department of General Services

Schedule: Completion by end of Permit Year 4

Items to Report: Completed SWPPPs

Method of Evaluation: N/A

**BMP 6B: Require Municipal Contractors to Use Appropriate Control Measures and Procedures for Stormwater Discharges**

Objective: Require, to the MEP, that municipal contractors use appropriate control measures and procedures for stormwater discharges to the County’s MS4

Measurable Goal: Develop and include verbiage in the appropriate standard agreements for municipal contractors, requiring appropriate control measures/procedures and pollution prevention protocols for stormwater discharges to the County’s MS4

Necessary Documents: Loudoun County Standard Contract

**Minimum Control Measures (MCMs)  
Pollution Prevention/Good Housekeeping for Municipal Operations**

Responsible Party: Department of General Services, with assistance from the County Purchasing Department and County Attorney's Office

Schedule: Ongoing program

Items to Report: Verbiage added

Method of Evaluation: N/A

**BMP 6C: Require Contractors Applying Pesticides and Herbicides to be Properly Trained or Certified with State Law**

Objective: Require contractors applying pesticides and herbicides to be properly trained or certified in accordance with State Law

Measurable Goal: Appropriate language in applicable contracts

Necessary Documents: None

Responsible Party: Department of General Services, with assistance from the County Purchasing Department

Schedule: Complete by end of Permit Year 2

Items to Report: Modified contract language

Method of Evaluation: N/A

**BMP 6D: Ensure County Staff Applying Pesticides and Herbicides are Properly Certified with State Law**

Objective: Ensure all County staff who apply herbicides and pesticides are properly certified, in accordance with the Virginia Pesticide Control Act

Measurable Goal: Annually track applicable County staff certification

Necessary Documents: Certification records for County staff

Responsible Party: Department of General Services

Schedule: Ongoing program

Items to Report: Report of certification status

Method of Evaluation: N/A

**Minimum Control Measures (MCMs)**

**Pollution Prevention/Good Housekeeping for Municipal Operations**

**BMP 6E: Implement Turf and Landscape Nutrient Management Plans (NMPs)**

Objective: For the identified properties, ensure that nutrients are applied in accordance with their Turf and Landscape NMP

Measurable Goal: Meeting implementation schedule as noted under “schedule”, below

Necessary Documents: NMPs

Responsible Party: Department of General Services with assistance from Parks, Recreation & Community Services

Schedule: Implementation schedule requires cumulative percentages of identified lands have turf and landscape NMPs, as follows:

- a. 15% of identified acres in Permit Year 2
- b. 40% of identified acres in Permit Year 3
- c. 75% of identified acres in Permit Year 4
- d. 100% of identified acres in Permit Year 5

Items to Report: Total acreage of lands where turf and landscape NMPs are required and acreage of lands where NMPs have been implemented

Method of Evaluation: N/A

**BMP 6F: Provide Operations Training to Reduce Stormwater Pollution Discharge**

Objective: Provide applicable biennial training to applicable County staff in preventing pollution of stormwater runoff from activities that are prone to stormwater pollution discharges. County staff shall receive training on the topics applicable to their operational duties, to include one or more of the following areas:

- Recognition and reporting of illicit discharges
- Good housekeeping/pollution prevention practice for
  - Road, street, and parking lot maintenance
  - Public works facilities and maintenance
  - Recreational facilities

Measurable Goal: Appropriate biennial training provided to applicable staff, as required

Necessary Documents: Training Schedule and Program (2014)

Responsible Party: Department of General Services

Schedule: Provide training biennially starting in Permit Year 2

**Minimum Control Measures (MCMs)  
Pollution Prevention/Good Housekeeping for Municipal Operations**

Items to Report: Summary report on required training which includes:  
a. List of training events  
b. Training dates  
c. Number of staff trained  
d. Training objective  
e. Written training plan for next reporting cycle

Method of Evaluation: Evaluate training effectiveness and needs, not less than annually, or when the following events occur:  
• Upon hiring  
• Staff transfer into new/different positions

**BMP 6G: Ensure County Staff and Contractors Obtain the Appropriate Erosion and Sediment Control Certifications**

Objective: Ensure County staff and contractors performing duties related to plan review, inspection, program administration, and construction site operations obtain the appropriate certifications per the requirements of the Virginia Erosion and Sediment Control and VSMP Regulations

Measurable Goal: Certifications for applicable staff and contractors, per the regulations noted above

Necessary Documents: List of staff and contractors and certificates held

Responsible Party: Department of General Services and Building & Development

Schedule: Reporting to start in Permit Year 2

Items to Report: A list of staff and contractors and their certification/training statuses

Method of Evaluation: Verification that staff and contractors are performing duties within their areas of certification

**BMP 6H: Develop Written Good Housekeeping and Pollution Prevention Protocols for Daily Municipal Operations and Maintenance**

Objective: Develop written good housekeeping and pollution prevention protocols for daily municipal operations and maintenance that are compliant with Section II B 6 a of the MS4 General Permit

Measurable Goal: Written good housekeeping and pollution prevention protocols for daily municipal operations and maintenance

Necessary Documents: Written good housekeeping and pollution prevention protocols

Responsible Party: Department of General Services

**Minimum Control Measures (MCMs)  
Pollution Prevention/Good Housekeeping for Municipal Operations**

Schedule: Completed by the end of Permit Year 2

Items to Report: List of completed procedures and staff training done to implement them

Method of Evaluation: N/A

**BMP 6I: Conduct TMDL Municipal Facility Site Assessments**

Objective: To determine whether County sites are significant sources of pollutants within the Goose Creek and Bull Run watersheds

Measurable Goal: Conduct site assessments at the identified municipal facilities to identify significant sources of the applicable pollutants identified in the Comprehensive TMDL Action Plan

Necessary Documents: TMDL Facility Assessment Form, Comprehensive TMDL Action Plan

Responsible Party: Department of General Services

Schedule: Site assessments will be completed by the end of Permit Year 3

Items to Report: A summarized report of the individual assessments to include a list of significant sources of pollutants identified at each facility that have been identified as “should be addressed”

Method of Evaluation: Site visits utilizing the TMDL Facility Assessment Form to determine whether these are significant sources of pollutants

***BMP Summary Table:***

**Table 8: Pollution Prevention/Good Housekeeping for Municipal Operations BMP Summary**

BMP	BMP/Task	Permit Year Implement/ Complete	Primary Responsible Party(ies)	Measurable Goal(s)/Report Item(s)
6A	Develop SWPPPs for Identified “High Priority” Facilities	Complete by end of Year 4	Department of General Services	Develop SWPPPs
6B	Require Municipal Contractors to Use Appropriate Control Measures and Procedures for Stormwater Discharges	Year 2*	Department of General Services	Verbiage added to standard contract language
6C	Require Contractors Applying Pesticides and Herbicides to be Properly Trained or Certified with State Law	Year 2*	Department of General Services	Modified contract language

**Minimum Control Measures (MCMs)  
Pollution Prevention/Good Housekeeping for Municipal Operations**

<b>BMP</b>	<b>BMP/Task</b>	<b>Permit Year Implement/ Complete</b>	<b>Primary Responsible Party(ies)</b>	<b>Measurable Goal(s)/Report Item(s)</b>
6D	Ensure County Staff Applying Pesticides and Herbicides are Properly Certified with State Law	Year 1*	Department of General Services	Report of appropriate certification status
6E	Implement Turf and Landscape Nutrient Management Plans (NMPs)	Year 2*	Department of General Services and Parks, Recreation, & Community Services	Identification in Permit Year 1, then implementation schedule per Section II B 6 c
6F	Provide Operations Training to Reduce Stormwater Pollution Discharge	Year 2*	Department of General Services	Summary report of training with required data
6G	Ensure County Staff and Contractors Obtain the Appropriate Erosion and Sediment Control Certifications	Year 2*	Department of General Services and Building & Development	A list of County staff and their certification/ training statuses
6H	Develop Written Good Housekeeping and Pollution Prevention Protocols for Daily Municipal Operations and Maintenance	Year 2	Department of General Services	Written good housekeeping and pollution prevention protocols
6I	Conduct TMDL Municipal Facility Site Assessments	Year 3	Department of General Services	Site Assessment Report

\* Denotes ongoing programming once initiated