

COUNTY of ROANOKE VIRGINIA

Municipal Separate Storm Sewer System Program Plan

May 2024
(revised December 2025)



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| | Roanoke County MS4 Training Plan July 2019 | “ |
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| | Completed SWPPPs (See Figure 4 in BMP 6-4) | “ |
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Part I. Introduction

A. Background

According to the United States Environmental Protection Agency (US EPA), polluted stormwater runoff is a leading cause of impairment to nearly 40 percent of surveyed U.S. water bodies that do not meet water quality standards. Whether by overland flow or via stormwater systems, such as underground pipes, ditches, or open channels, polluted stormwater runoff is discharged into local receiving waters. Such



untreated water pollution can result in the destruction of fish, wildlife, and aquatic life habitats; it can also cause a loss of aesthetic value and can threaten public health due to its potential to contaminate food, drinking water supplies, and recreational waterways.

B. Municipal Separate Storm Sewer System (MS4) Program Pursuant to General Permit VAR04

The County of Roanoke is committed to continuing in the development, implementation, and enforcement of a Municipal Separate Storm Sewer System (MS4) Program, pursuant to the requirements of the MS4 Permit VAR04, as issued by the Virginia Department of Environmental Quality. The effective date of this permit is November 1, 2023, with an expiration date of October 31, 2028. The program is designed to reduce the discharge of pollutants from the County's regulated MS4 area to the maximum extent practicable (MEP) and to satisfy the appropriate water quality requirements of the State Water Control Law and its attendant regulations.

The County's MS4 program addresses the MS4 Permit's six Minimum Control Measures (MCMs) and the Total Maximum Daily Load (TMDL) requirements, as follows:

- MCM-1:** Public Education and Outreach
- MCM-2:** Public Involvement and Participation
- MCM-3:** Illicit Discharge Detection and Elimination (IDDE)
- MCM-4:** Construction Site Stormwater Runoff and Erosion and Sediment Control
- MCM-5:** Post-Construction Stormwater Management for New Development and Development on Prior-Developed Lands
- MCM-6:** Pollution Prevention and Good Housekeeping for Facilities Owned or Operated by the Permittee Within the MS4 Service Area
- TMDL:** TMDL Special Conditions

When addressing these six MCMs, Roanoke County emphasizes the importance of lowering sediment, bacteria, and PCB discharges to the storm sewer system in accordance with the approved TMDLs within the County.

Roanoke County is committed to establishing and sustaining a comprehensive program to improve the quality of stormwater runoff for citizens within its boundaries and beyond; such commitment will continue over the permit term and well into the future.

C. Roanoke County's Regulated MS4 Area

Roanoke County is partially urbanized. As such, only the areas categorized as urban by the 2020 U.S. Bureau of the Census are included in the County's regulated MS4 area.

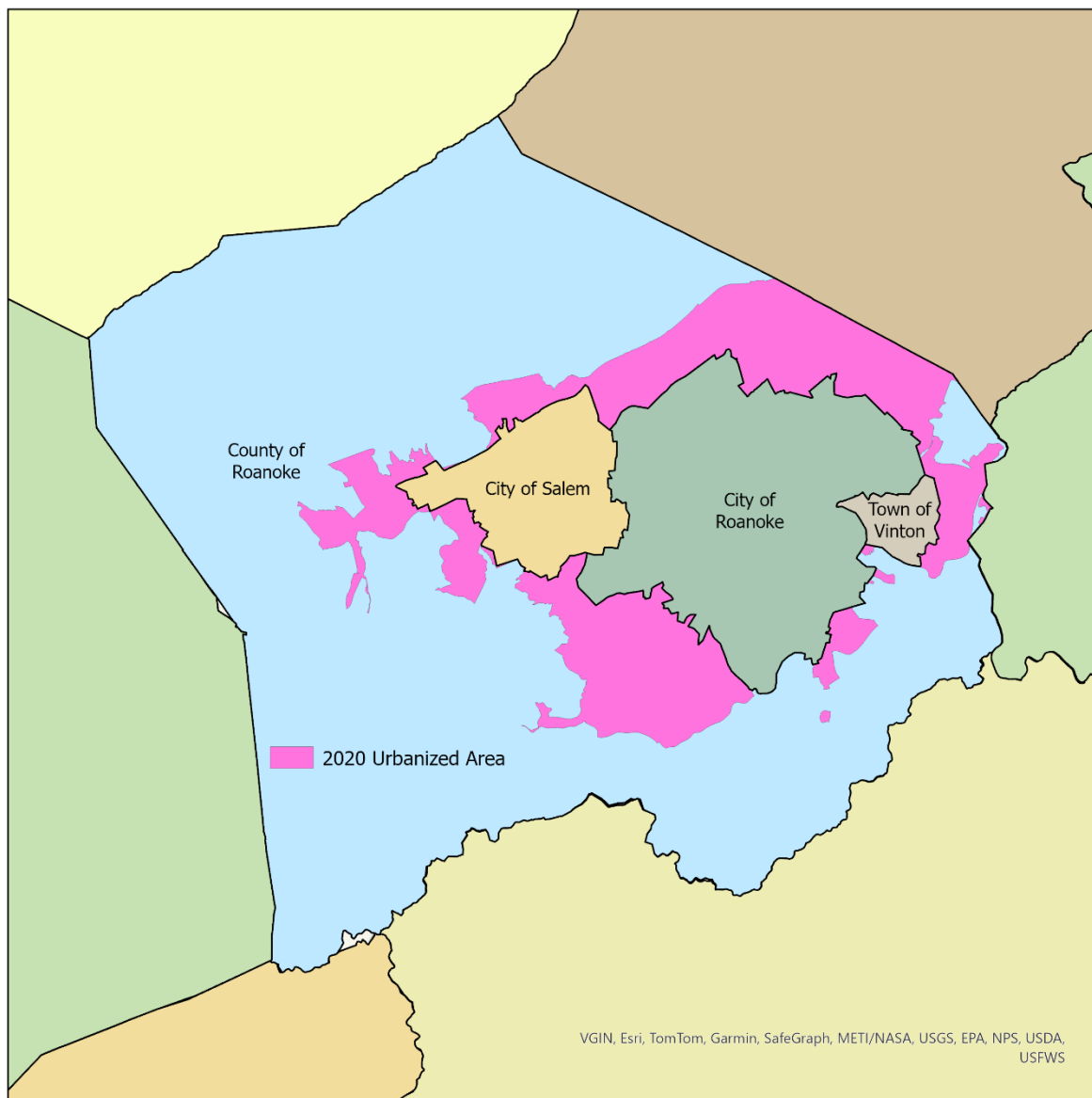


Figure 1: Roanoke County's Urbanized Areas, as determined by the 2020 U.S. Census

D. Roles and Responsibilities of Roanoke County's Divisions and Departments

Various divisions and departments within Roanoke County assist with implementing the MS4 Permit requirements. Their roles and responsibilities are described below:

- **Department of Development Services, Division of Stormwater Management** has the lead role in overseeing the County's efforts to comply with the MS4 Permit, including the following:
 - Gathers the requisite data and prepares the MS4 Program Plan and MS4 Annual Reports.
 - Conducts Program Administration, Plan Review, Inspection, and Enforcement to implement the Virginia Erosion and Stormwater Management Program (VESMP).
 - Conducts and oversees county-wide stormwater-related employee training.
 - Implements the Illicit Discharge Detection & Elimination (IDDE) Program.
 - ✧ Inspects County-owned outfalls to locate potential illicit discharges.
 - ✧ Responds to citizen complaints regarding illicit discharges and spills.
 - ✧ Conducts enforcement, when necessary.
 - Conducts stormwater-related public education and outreach efforts.
 - ✧ Manages the Partnership Service Agreement with the Western Virginia Water Authority (WVWA), through which WVWA provides compliance assistance with the County's MS4 Permit requirements in delivering certain portions of the County's Public Education and Outreach Program.
 - ✧ Maintains the County's Stormwater webpage.
 - Maintains existing stormwater infrastructure and constructs new facets of the County's storm drainage (MS4) system.
 - Conducts annual inspections and oversees maintenance of County-owned stormwater management facilities (i.e., Best Management Practices (BMPs)).
 - Implements post-construction BMP Program (i.e., conducts inspections & initiates enforcement) for all privately-owned BMPs in the County.
 - Prepares Stormwater Pollution Prevention Plans (SWPPPs) for County-owned municipal facilities and provides guidance to departments that manage such facilities in conducting their quarterly and annual facility SWPPP inspections.
 - Prepares and manages activities associated with the County's TMDL Action Plans for sediment, bacteria, and PCBs.
- **Department of Parks, Recreation, and Tourism (PRT)** implements nutrient management plans on recreational fields and other lawn areas managed by PRT; implements a Stormwater Pollution Prevention Plan at the Public Service Center (Kessler Mill) for its assigned work areas to address pollution prevention and good housekeeping activities at this facility. Installs and maintains pet waste stations in designated parks and greenways; provides some maintenance of County-owned BMPs; conducts cleanup events in parks and along greenways.

- **Department of General Services** - implements a Stormwater Pollution Prevention Plan at the Fleet Services Center and at the Public Service Center (Kessler Mill) for its assigned work areas to address pollution prevention and good housekeeping activities at these facilities.
- **Fire Department** - implements Spill Prevention, Control, and Countermeasures Plans (SPCC) at fire/rescue stations within the MS4 area; implements Stormwater Pollution Prevention Plans (SWPPPs) at its various fire/rescue stations within the MS4 area and at the Roanoke Valley Regional Fire/EMS Training Center; and responds to spill-related incidents by employing containment measures and then contacting a 3rd party contractor for actual clean-up.
- **Roanoke County Public Schools (RCPS)** - implements nutrient management plans on school ball fields and other lawn areas managed by RCPS; implements Stormwater Pollution Prevention Plans for various bus yards and vehicle repair/maintenance facilities to address pollution prevention and good housekeeping activities at each. Oversees the contract with a 3rd party to maintain all RCPS-owned stormwater management facilities (SWMFs). By way of a Memorandum of Agreement (MOA) with the County, RCPS opted to fall under the County's MS4 Permit coverage. (See the folder entitled Introduction in the appendix of this Program Plan.)
- **Department of Public Information (Web Content Manager)** - assists with posting and managing data on the stormwater website and provides webpage statistics.
- **Department of Information Technology** - assists with posting stormwater training data on the County's intranet site (Café).
- **County Attorney's Office** - assists the Department of Development Services with compliance and enforcement issues regarding regulated construction projects or post-construction SWMFs pursuant to the Virginia Erosion and Stormwater Management Program (VESMP).

The following Departments, all of which have staff who drive throughout the County in the conduct of their day-to-day work activities, receive Illicit Discharge Detection and Elimination training to assure that they are prepared to respond if they witness an active discharge event:

- | | |
|--------------------------------|--|
| • Commissioner of the Revenue | • Real Estate Valuation |
| • Development Services | • Police |
| • Finance | • Regional Center for Animal Care & Protection |
| • Fire and Rescue | • Roanoke County Public Schools |
| • General Services | • Social Services |
| • Parks, Recreation, & Tourism | • Sheriff's Office |

E. Purpose of Roanoke County's MS4 Program Plan

This MS4 Program Plan addresses the requirements of General Permit VAR04, entitled “Virginia Pollutant Discharge Elimination System (VPDES) General Permit for Discharges of Stormwater from Small Municipal Separate Storm Sewer Systems (MS4s).” The permit has an effective date of November 1, 2023, and an expiration date of October 31, 2028. The Department of Development Services developed this Program Plan, and it serves as a planning document. ***It is not an enforceable document.*** As outlined in DEQ’s MS4 Permit Fact Sheet, “all enforceable provisions of the MS4 Program are contained within the General Permit.”

Roanoke County will update this MS4 Program Plan, as required in Part 1.C.3 of the MS4 Permit, and such updates will be reported in the applicable Annual Report, pursuant to Part I.D.3 of the permit.

F. Physically Interconnected MS4s

Roanoke County’s MS4 is physically interconnected with the following MS4s: the City of Salem, the City of Roanoke, the Town of Vinton, and VDOT.

Roanoke County is located outside the jurisdictional limits of and surrounds the City of Salem, the City of Roanoke, and the Town of Vinton. All four localities are regulated small MS4s. Most of Roanoke County's watersheds drain to the Roanoke River, which flows west to east through the Roanoke Valley, as shown in Figure 2. (Note that a portion of Roanoke County’s stormwater runoff drains north into the storm sewer system that is operated by Botetourt County, but Botetourt is not a regulated MS4.) Additionally, most roads are maintained by the Virginia Department of Transportation (VDOT), which is also a regulated MS4 entity.

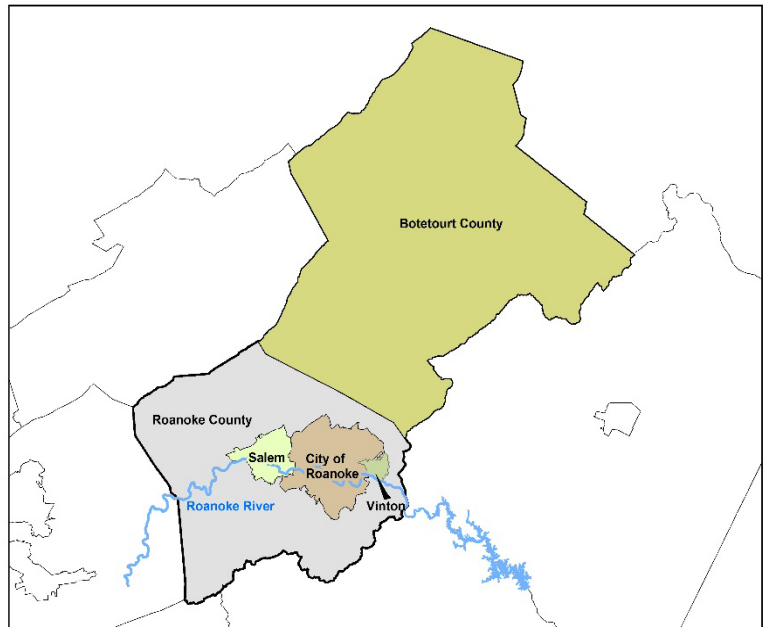


Figure 2: Map of Roanoke County's Physically Interconnected MS4s

Roanoke County has provided a letter to the City of Salem, the City of Roanoke, the Town of Vinton, and VDOT notifying each entity of their interconnection to Roanoke County's MS4. A copy of each letter is provided in the folder labeled “Introduction” in the appendix of this Program Plan.

G. Inter-Jurisdictional Cooperation

As coordinated by the Roanoke Valley-Alleghany Regional Commission, Roanoke County regularly meets with the cities of Roanoke and Salem and the Town of Vinton to discuss shared water quality issues and to coordinate MS4 activities, where appropriate. In addition, these same localities have individually contracted with a local non-profit organization, the Clean Valley Council (CVC), to provide regional education and public outreach programs related to stormwater management and stormwater pollution prevention.

Roanoke County has partnered with the Western Virginia Water Authority to deliver similar services. The executed Partnership Service Agreement with the WVWA, executed in September 2023, is in the appendix of this Program Plan in various folders, including those labeled BMP 1-4 and 1-5.

Part II. Minimum Control Measures

Pursuant to Part I. E. of the MS4 Permit, the following Minimum Control Measures (MCMs) describe the actions that Roanoke County will use to develop, implement, and enforce its MS4 Program, all of which are designed to reduce the discharge of pollutants from this small MS4 to the maximum extent practical (MEP). The measures will also be employed to protect water quality and to satisfy the appropriate water quality requirements of the State Water Control Law and its attendant regulations.

- MCM-1: Public Education and Outreach
- MCM-2: Public Involvement and Participation
- MCM-3: Illicit Discharge Detection and Elimination (IDDE)
- MCM-4: Construction Site Stormwater Runoff and Erosion and Sediment Control
- MCM-5: Post-Construction Stormwater Management for New Development and Development on Prior-Developed Lands
- MCM-6: Pollution Prevention and Good Housekeeping for Facilities Owned or Operated by the Permittee Within the MS4 Service Area

Pursuant to Part II.A.

- TMDL: TMDL Special Conditions

NOTE:

As per Part I.B. of the MS4 General Permit, “implementation of the above-listed MCMS and the Chesapeake Bay and Local TMDL requirements in Part II (as applicable) consistent with the provisions of an iterative MS4 program required pursuant to the General Permit constitutes compliance with the standard of reducing pollutants to the “maximum extent practicable, (MEP)” provides adequate progress in meeting water quality standards and satisfies the appropriate water quality requirements of the State Water Control Law and its attendant regulations.” Due to this iterative nature of the MS4 Program, over the course of the permit term Roanoke County may find it necessary to change or replace one or more of the “anticipated” Best Management Practices (BMPs) used to satisfy the MCMs; such changes/replacements will be made when the County finds the BMP(s) to be ineffective.

Pursuant to 9VAC25-89-40, Part I.E. (Minimum Control Measures) of the MS4 Permit, Roanoke County’s MS4 Program Plan includes the following:

MCM-1: Public Education and Outreach

1. A list of the high-priority stormwater issues that Roanoke County will communicate to the public as part of its Public Education and Outreach Program.
2. The rationale for selection of each high-priority stormwater issue and an explanation of how each education or outreach strategy is intended to have a positive impact on stormwater discharges.

3. Identification of the target audience to receive each high-priority stormwater message.
4. Should the County identify staff and students as the target audience for education and outreach strategies, staff shall not be the majority of the target audience.
5. Note: Staff training required in accordance with Part I.E.6.d. of the MS4 General Permit does not qualify as a strategy for public education and outreach.
6. Use of the strategies from Table I of Part I.E.1.d. of the MS4 General Permit to communicate each high-priority stormwater message.
7. The anticipated time periods the messages will be communicated or made available to the public.

MCM-2: Public Involvement and Participation

1. The webpage address where mechanisms for the public to report (i) potential illicit discharges, improper disposal, or spills to the MS4, (ii) complaints regarding land disturbing activities, or (iii) other potential stormwater pollution concerns.
2. The webpage address that contains the methods for how the public can provide input on the permittee's MS4 program.
3. A description of the public involvement activities to be implemented by the permittee, the anticipated time period the activities will occur, and a metric for each activity to determine if the activity is beneficial to water quality. An example of metrics may include the weight of trash collected from a stream cleanup or the number of participants in a hazardous waste collection event.

MCM-3: Illicit Discharge Detection and Elimination (IDDE)

1. The MS4 map and outfall information table required by Part I.E.3.a. of the MS4 Permit. The map and outfall information table may be incorporated into the MS4 program plan by reference. The map shall be made available to the Department within 14 days upon request.
2. Copies of written notifications of physical interconnections given by the permittee to other MS4s.
3. The IDDE procedures described in Part I.E.3.c. of the MS4 Permit.

MCM-4: Construction Site Stormwater Runoff and Erosion and Sediment Control

1. The local ordinance citations for the VESMP.

2. A description of the legal authorities utilized to ensure compliance with Part I.E.4.a. of the MS4 Permit for erosion and sediment control and construction site stormwater runoff control, such as ordinances, permits, orders, specific contract language, policies, and interjurisdictional agreements.
3. Written inspection procedures to ensure VESMP requirements are maintained, and onsite erosion and sediment controls are properly implemented.
4. Written procedures for requiring VESCP compliance through corrective action or enforcement action in accordance with § 62.1-44.15:58 of the Code of Virginia.
5. The roles and responsibilities of each of the County's departments, divisions, or subdivisions in implementing erosion and sediment control and construction site stormwater runoff control requirements in Part I.E.4.

MCM-5: Post-Construction Stormwater Management for New Development and Development on Prior-Developed Lands

1. A copy of the VSMP Approval (Permit Coverage) Letter issued by DEQ.
2. Written inspection procedures and all associated documents utilized in the inspection of privately owned stormwater management facilities.
3. Written procedures for compliance and enforcement of inspection and maintenance requirements for privately owned BMPs.
4. A description of the legal authorities utilized to ensure compliance with Part I.E.5.a. for post-construction stormwater runoff control such as ordinances (provide citation as appropriate), permits, orders, specific contract language, and inter-jurisdictional agreements.
5. Written inspection and maintenance procedures and other associated template documents utilized during inspection and maintenance of stormwater management facilities owned or operated by the permittee.
6. The roles and responsibilities of each of Roanoke County's departments, divisions, or subdivisions in implementing the post-construction stormwater runoff control program.

MCM-6: Pollution Prevention and Good Housekeeping for Facilities Owned or Operated by the Permittee Within the MS4 Service Area

1. A list of written good housekeeping procedures for the operations and maintenance activities as required by Part I.E.6.a. and b.
2. A list of all high-priority facilities owned or operated by the permittee required to maintain a SWPPP in accordance with Part I.E.6.g. that includes the facility

- name, facility location, and the location of the SWPPP hardcopy or electronic document being maintained. The SWPPP for each high-priority facility shall be incorporated by reference.
3. A list of locations for which turf and landscape nutrient management plans (NMPs) are required in accordance with Part I.E.6.n and s, including the following information:
 - a. The total acreage covered by each NMP.
 - b. The DCR approval date and expiration date for each NMP.
 - c. The location of the NMP plan hardcopy or electronic document being maintained.
 4. A summary of mechanisms the County uses to ensure contractors working on its behalf implement the necessary good housekeeping and pollution prevention procedures, and stormwater pollution plans as appropriate.
 5. The written training plan as required in Part I.E.6.d. of the MS4 Permit.

TMDL: Local TMDL Special Conditions

Roanoke County was previously covered under the General VPDES Permit for Discharges of Stormwater from Small MS4s effective November 1, 2018, and has developed and will implement and maintain local TMDL Action Plans designed to reduce loadings for its pollutants of concern (sediment, bacteria, and PCBs), because the County discharges these pollutants of concern to impaired waters for which a TMDL has been approved by the U.S. Environmental Protection Agency (EPA), as described in Part II.B.2.a. and 2.b. of the current MS4 Permit, having an effective date of November 1, 2023.

Because these TMDLs were approved by the EPA prior to July 1, 2018 and an individual or aggregate wasteload has been allocated to the County, Roanoke County has developed and will update as applicable its local TMDL Action Plans to meet the conditions of Part II.B.4., B.6., B.7., and B.8. of the current MS4 Permit, as applicable, no later than 18 months after the permit effective date (i.e., by May 2025) and continue implementation of these Action Plans. The updated Action Plans will include:

- 1) An evaluation of the results achieved by the previous Action Plans; and
- 2) Any adaptive management strategies incorporated into updated Action Plans based on evaluation of these plans.

Note that the County's TMDL Action Plans may be implemented in multiple phases over more than one permit cycle using the adaptive iterative approach provided

adequate progress is achieved in the implementation of BMPs designed to reduce pollutant discharges in a manner that is consistent with the assumptions and requirements of the applicable TMDL.



MCM-1: Public Education and Outreach

This minimum control measure is intended to implement a public education and outreach program that is designed to:

1. Increase the public's knowledge of how to reduce stormwater pollution, placing priority on reducing impacts to impaired waters and other local water pollution concerns.
2. Increase the public's knowledge of hazards associated with illegal discharges and improper disposal of waste, including pertinent legal implications.
3. Implement a diverse program with strategies that are targeted toward individuals or groups most likely to have significant stormwater impacts.

The County has developed the following Best Management Practices (BMPs) to meet these program goals:

BMP 1-1: Stormwater Educational Resources

The County has created and will maintain a comprehensive listing of existing stormwater-related agencies and organizations along with pertinent educational programs and resources, which shall be made available to the public by way of the County's stormwater website.

BMP 1-2: Roanoke County Stormwater Newsletter

Roanoke County will create and distribute a Stormwater Newsletter, which shall be annually distributed to all Roanoke County single-family residences.

BMP 1-3: Stream Monitoring and Education (retired)

Roanoke County will provide stream monitoring and informational stream seminars for Roanoke County students and residents.

BMP 1-4: Stormwater Education Program for Schoolchildren (Revised)

Roanoke County will develop and implement a stormwater education program for its schoolchildren. Different programs will target appropriate grade levels.

BMP 1-5: Stormwater Public Awareness Program

Roanoke County has developed and will implement a Stormwater Public Awareness Program that includes the distribution of stormwater merchandise, public service announcements, and other high visibility educational media. The program includes:

1. A list of the high-priority stormwater issues that Roanoke County will communicate to the public as part of its Public Education and Outreach Program.
2. The rationale for selection of each high-priority stormwater issue and an explanation of how each education or outreach strategy is intended to have a positive impact on stormwater discharges.

BMP 1-6: Roanoke County Stormwater Webpage (retired, see BMP 2-3)

Roanoke County maintains its Stormwater webpage to inform the public on the various ways to reduce stormwater pollution, placing priority on reducing impacts to impaired waters and addressing other local water pollution concerns.

BMP 1-7: Targeted Education Program

Roanoke County conducts targeted education to communicate its high-priority stormwater messages. This BMP coordinates with BMP 1-5 and includes:

1. Identification of the public audience to receive each high-priority stormwater message; should the County identify staff and students as the target audience for education and outreach strategies, staff shall not be the majority of the target audience.
2. The strategies from Table 1 of Part I.E.1.d. of the MS4 Permit that the County will use to communicate each high-priority stormwater message; and
3. The anticipated time periods the messages will be communicated or made available to the public.

This report provides a detailed description of each BMP, all standard operating procedures or policies necessary to implement each BMP, the measurable goal by which each BMP will be evaluated, and the persons, positions, or departments responsible for implementing each BMP.

BMP 1-1: Stormwater Educational Resources

The goal of this BMP is to create and maintain a comprehensive listing of stormwater-related materials on the County's website that includes agencies and organizations, educational programs, and resources such as current publications, websites, videos, maps, and training opportunities that directly address stormwater issues such as stormwater management, stormwater quality, floodplain management, stormwater pollution prevention, conservation practices, and riparian habitat protection. The County will make the public aware of these resources by way of its stormwater webpage:

<https://www.roanokecountyva.gov/332/Stormwater-Resources>.

Responsible Party:

Roanoke County's Department of Development Services.

Schedule and Evaluation:

Roanoke County maintains and annually updates its stormwater resources database, which provides contact information and website links to aid the public in accessing the various stormwater educational resources. The updated tables are on the County's stormwater webpage, as specified above. They can also be found in the appendix of each Annual Report, in the folder titled BMP 1-1.

At the end of each annual period, the County will analyze its stormwater website usage to determine the effectiveness of making this information available to the public. The County will provide the website where the stormwater resources database is located, and it will submit a copy of this database and provide documentation of the number of website visits.

Standard Operating Procedures or Policies:

None.

Supporting Documents:

- Audio-Visual Information January 2025
- Environmental Educational Publications and Programs January 2025
- Local and National Agencies January 2025
- Printed Materials and Publications January 2025

Measurable Goals:

The County will measure success for this BMP by tracking website usage and the number of requests received by the County for this or similar data.

The Annual Report shall include the following information:

- The updated stormwater resources database.
- Documentation of the number of stormwater webpage visits.
- The County's stormwater webpage address.

The County will annually evaluate this BMP and determine if any modifications are needed based on a review of the applicable measurable goals.

BMP 1-2: Roanoke County Stormwater Newsletter

The goal of this BMP is to create and distribute an annual Stormwater Newsletter, which shall be mailed to every single-family residence in Roanoke County. The purpose of this newsletter shall be to (1) increase the public's knowledge on ways to reduce stormwater pollution, placing priority on reducing impacts to impaired waters and other local water pollution concerns; and (2) increase the public's knowledge of hazards associated with illegal discharges and improper disposal of waste, including pertinent legal implications. The target public audience for this publication will be County homeowners.

The newsletter, while primarily aimed at County homeowners, will also address regional issues that affect the entire Roanoke River watershed. Topics may include litter prevention, stormwater pollution prevention, stormwater quality education, residential best management practices, updates on local impaired water bodies, and TMDLs. It will also include subjects that are specific to Roanoke County's Stormwater Management Program. The stormwater newsletter's focus will be coordinated with the high-priority water quality issues identified in BMP 1-5.

Responsible Party:

Department of Development Services.

Schedule and Evaluation:

Roanoke County will educate its homeowners about stormwater management via an annual newsletter. The County will provide additional copies of the newsletter to its various public libraries and schools, and it will post the newsletter on its stormwater website for additional outreach.

At the end of each annual period, the County will document its annual distribution total.

Standard Operating Procedures or Policies:

None.

Supporting Documents:

Stormwater Newsletter March 2025

Measurable Goals:

Success for this BMP will be measured through the documentation of the number of County residences to which the newsletter was mailed.

The Annual Report shall include the following information:

- A copy of the newsletter and how many were distributed.

The County will evaluate this BMP to determine if modifications are needed based on the County's analysis of the measurable goals and any feedback received from the public.

BMP 1-3: Stream Monitoring and Education

(This BMP has been retired; some monitoring will be done as part of BMP 1-4)

In cooperation with the Clean Valley Council (CVC), Roanoke County will provide stream monitoring and informational stream seminars for Roanoke County students and residents. The goal of this BMP is to educate students and residents about field procedures for biological stream monitoring, in addition to motivating citizens to monitor waterways in their neighborhood and enhance grassroots cooperation to promote the importance of stream monitoring within the County. These seminars and monitoring sessions will provide some field exposure to aquatic habitats, update citizens on local, state, and federal water quality regulations, and keep citizens updated on local stream health.

Responsible Party:

Roanoke County's Department of Development Services, through the Clean Valley Council.

Schedule and Evaluation:

On behalf of Roanoke County, the Clean Valley Council will educate Roanoke County students and citizens by holding stream education seminars and monitoring sessions. Special emphasis will be placed on monitoring stream segments with a TMDL designation. The County will create a database to track the names of monitored streams and the number and type of groups participating. The database will be submitted to DEQ in the annual report.

Standard Operating Procedures or Policies:

None.

Supporting Documents:

Clean Valley Council Contract, as annually updated.
Stream Monitoring and Education Plan.

Measurable Goals:

Success for this BMP will be measured by tracking the number of citizens/students involved in stream monitoring activities conducted by the CVC on behalf of Roanoke County. In addition, Roanoke County will track the number of stream schools given by the CVC, the number of participating students, and their respective grade level(s).

The Annual Report shall include the following information:

- Names of streams monitored in Roanoke County using the benthic macro-invertebrate method.
- Number of participants conducting stream monitoring.
- Number of stream schools provided.
- Number of attendees present at each stream school.
- Modifications to this BMP based upon results of analyses of measurable goals.

BMP 1-4: Stormwater Education Program for Schoolchildren (Revised)

Roanoke County has revamped BMP 1-4 to reflect its new partnership with the Western Virginia Water Authority (WVWA). Per an executed Partnership Service Agreement (PSA), the WVWA will deliver a stormwater education program for Roanoke County's schoolchildren. (The PSA is in the folder titled BMP 1-4 in the appendix of this Program Plan.)

The WVWA educators will implement various programs and/or presentations to address stormwater pollution prevention and related water quality issues. The program materials will target appropriate grade levels and will be correlated with the applicable Standards of Learning (SOLs). In addition, the messages for the various grade levels will correlate with the County's high-priority water quality issues, as identified in BMP 1-5.

Responsible Party:

Roanoke County's Department of Development Services, through the Western Virginia Water Authority (WVWA).

Schedule and Evaluation:

Throughout the academic calendar year, the WVWA will provide stormwater educational programs and/or presentations to K - 12th graders and/or their teachers in public or private schools within the County.

The County will document how many schoolchildren have been educated on stormwater quality by tracking the number of pertinent programs provided by the WVWA and the number of students reached.

At the end of each annual period, the County will analyze the statistics of how many programs were provided and how many children were reached to verify that this BMP remains effective.

Standard Operating Procedures or Policies:

None.

Supporting Documents:

- Partnership Service Agreement [PSA] RoCo-WVWA September 2023
- 2025-2026 WVWA Education Programming Guide

Measurable Goals:

Success for this BMP will be measured by tracking the number of programs that the WVWA provided and the number of schoolchildren that were reached. The goal will be to reach a minimum of 1,000 students and teachers in the County.

The Annual Report shall include the following information:

- The name and a brief description of each program.
- The goals, dates, and locations of each program that was presented.
- The number of participants in each program.

Evaluation and subsequent modifications to this BMP will be based on results of the County's analysis of the measurable goals.

BMP 1-5: Stormwater Public Awareness Program

Roanoke County's Stormwater Public Awareness Program targets three high-priority stormwater issues that contribute to the degradation of stormwater runoff and the receiving waters into which it drains: excess bacteria, excess sediments, and excess nutrients.

Rationale for Selection - Roanoke County selected sediment and bacteria as high-priority stormwater issues because the County has been assigned a Total Maximum Daily Load (TMDL) by DEQ for these impairments, meaning the County has been put on a "pollution diet" to limit these two pollutants from entering its waterways. The County also selected nutrients (phosphorus and nitrogen, in particular) because they have such negative impacts on receiving waters when in large quantities. Excess nutrients wash off lawns, other managed turf areas, and farm fields and are carried in stormwater runoff to the area's receiving waters (streams, creeks, and the Roanoke River). Once in the waterways, they cause algal overgrowth, which in turn decreases the oxygen that aquatic life needs to survive. This often results in fish kills, fish illnesses, and the tainting of human food. Groundwater supplies may also be affected by nutrient pollution.

The County's Public Awareness Program focuses on the following: (1) how to reduce stormwater pollution, placing priority on reducing impacts to impaired waters and other local water pollution concerns; (2) increasing the public's knowledge of hazards associated with illegal discharges and improper disposal of waste, including pertinent legal implications, and (3) implementing a diverse program with strategies that are targeted toward individuals or groups most likely to have significant stormwater impacts.

The County has developed relevant messages for this BMP and uses a variety of means and methods, including partnering with the Western Virginia Water Authority (WVWA) and RVT3, to communicate with the public via the distribution of printed materials (brochures, fact sheets, and newsletters), radio and TV advertisements, use of websites and social media, storm drain stenciling, speaking engagements, stormwater-related merchandise giveaways, and more.

As outlined in BMP 1-7, the County targets certain public audiences with specific educational materials and messages, which encourage them to reduce stormwater pollution in their day-to-day activities.

Responsible Party:

Department of Development Services, with assistance from the WVWA and RVT3.

Schedule and Evaluation:

The County's Public Awareness Program incorporates the development and distribution of printed materials, billboard and mass transit advertisements, signage at certain locations, radio and television advertisements, newspaper articles, and use of websites and social media. The County will annually track the number and types of materials that are

distributed and posted on websites/social media and the size of the audience that is exposed to such materials, as appropriate.

In addition, the County purchased a set of video programs for educating the general public on Illicit Discharge Detection and Elimination (IDDE) to the storm drainage system; such discharges include the selected three high-priority water quality issues: excess bacteria, excess sediment, and excess nutrients in stormwater. The kit includes five videos of varying run times, as shown below, which are designed to be used in specific medium/media or to reach a specific audience.

- 30 sec, for local public media (as a Public Service Announcement)
- 60 sec, for broad community audiences
- 2 min, for short presentations booths, fairs, public events
- 5½ min, for short speaker presentations or young audiences
- 10½ min, in-depth for full understanding of illicit discharge and what can be done

The County will track the size of audiences exposed to the various videos and evaluate the response it receives from the public.

Standard Operating Procedures or Policies:

None.

Supporting Documents:

Partnership Service Agreement RoCo-WVWA September 2023

Measurable Goals:

The County will document the type of public awareness method that was utilized, including the size of the audience reached, and any impact indicators that show what effect the method had on behavior.

The Annual Report shall include the following information:

- A description of the public involvement activities implemented by the permittee, including any efforts to reach out and engage all economic and ethnic groups.
- A description of public education and outreach activities conducted that also included education regarding climate change.
- A report of the metric as defined for each activity and an evaluation to determine if the activity is beneficial to improving water quality.
- The name of other MS4 permittees with whom the permittee collaborated in the public involvement opportunities.

BMP 1-6: Roanoke County Stormwater Webpage (Retired, see BMP 2-3.)

Roanoke County will maintain and monitor its Stormwater webpage, which enables the public to obtain information concerning the County's Municipal Separate Storm Sewer System (MS4) Program, ordinances, design guidelines, general information, contact information, stormwater pollution prevention information, educational materials, and links to other organizations and sites. The messages will be coordinated with the high-priority stormwater issues identified in BMP 1-5.

The webpage informs citizens about on-going community-based projects, including storm drain stenciling, Save Our Streams and other similar stream monitoring programs, regional clean-ups, and other local water quality educational programs and events. It also allows for public comments on the County's MS4 Program and provides a means for citizens to submit stormwater pollution complaints.

- Stormwater webpage: <https://www.roanokecountyva.gov/stormwater>
- MS4 Program webpage: <https://www.roanokecountyva.gov/1755/Stormwater-MS4-Permit>

Responsible Party:

The Department of Development Services, with assistance from the County's webmaster.

Schedule and Evaluation:

Roanoke County will maintain a stormwater website and MS4 webpage and document their usage, including the annual number of visits to each page. The stormwater website will contain the appropriate videos from its IDDE Public Outreach kit (discussed in BMP 1-5) to inform the public about the hazards and legal ramifications of illicit discharges. It will also include recent versions of the County's stormwater-related public education materials, such as newsletters, fact sheets, posters, brochures, etc.

The County will monitor the most- and least-visited pages to determine if changes are needed to help expand the audience. Roanoke County will submit page statistics and any intended changes with the annual report.

Standard Operating Procedures or Policies:

None.

Supporting Documents:

None.

Measurable Goals:

Webpage statistics including the most- and least- popular material will be analyzed for effectiveness of the website.

The Annual Report shall include the following information:

- A summary of any public comments on the MS4 program received and how the County responded.
- A summary of stormwater pollution complaints received under the procedures established in Part I E 2 a (1), excluding natural flooding complaints, and how the County responded.
- The webpage address to the County's MS4 program and stormwater website.
- Page statistics.
- Intended changes.
- Evaluation and resulting modifications to this BMP based on results of analysis of measurable goals.

BMP 1-7: Targeted Education Program

The goal of this BMP is to implement a diverse program with strategies that are targeted toward individuals or groups most likely to have significant stormwater impacts. This program will focus on three high-priority stormwater issues that contribute to the degradation of local waters: excess bacteria, excess sediment, and excess nutrients.

The intention of the program is to (1) communicate to the target audience the high-priority stormwater issues identified above, including how to reduce stormwater pollution, and (2) increase the public's knowledge of hazards associated with illegal discharges and improper disposal of waste, including pertinent legal implications.

The County selected the specific target audiences based on the likelihood that each of them could generate excess bacteria, sediment, and/or nutrients from their day-to-day activities. The educational materials and messages mailed to each of the target audiences will be specific to their type of operation (such as car wash operations or kennel cleaning) to ensure the program is effective.

In accordance with Table 1 of Part 1.E.1. of the MS4 Permit, the County shall use two or more of the various strategies each year to deliver specific materials and messages to the selected target audiences. These are outlined on the next several pages in Figure 3.

Responsible Party:

Department of Development Services.

Schedule and Evaluation:

Roanoke County has developed a list of targeted public audiences to receive specific messages on an annual basis about ways to reduce stormwater pollution in their day-to-day activities. The County will track the size of audiences exposed to the various targeted messages and will evaluate any responses it receives from the selected public audiences.

Standard Operating Procedures or Policies:

None.

Supporting Documents:

- Stormwater Education Program for Specific Audiences October 2025 (See Figure 3 in this BMP).
- Various printed materials and PSAs.

Measurable Goals:

The County will document which materials were provided to the various public audiences, including the size of each audience reached, and any impact indicators that show what effect the method had on behavior.

The Annual Report shall include the following information:

- A list of the high-priority stormwater issues the County addressed in the public education and outreach program.
- A summary of the public education and outreach activities conducted for the report year, including the strategies used to communicate the identified high-priority issues.
- A description of any changes in high-priority stormwater issues, including, strategies used to communicate high-priority stormwater issues or target audiences for the public education and outreach plan and the rationale for any of these changes.
- A description of public education and outreach activities conducted that included education regarding climate change.
- The size of each target audience and the number reached each permit year.

Figure 3. Stormwater Education Program for Specific Audiences (Revised Oct. 2025)

| High-Priority Water Quality Issue | Target Audiences | Means to Determine Audience Size | Estimated Audience Size | Overall Messages | Strategies to Deliver Messages MS4 Permit Category: Traditional Written Materials; Media Materials | Rationale |
|-----------------------------------|--|--|-------------------------|---|---|---|
| #1 SEDIMENT | Car Washing/Detail Facilities; Car Dealers; Auto Body Shops (includes Tire Shops, Auto Parts Stores, etc.) | Business Licenses/Yellow Pages | 287 | <ul style="list-style-type: none"> Discharge all wash water to sanitary sewer. Potential damage caused to streams by wash water. | <ul style="list-style-type: none"> Mailer, annually PSAs on local cable station | Commercial car wash facilities can contribute significant sediment if wash water is discharged into the County's MS4. Vehicle washing and detailing can contribute a significant amount of sediment if wash water is discharged into the County's MS4, which drains, untreated, to local streams. |
| | Homeowners | Tax Records | 35,094 | <ul style="list-style-type: none"> Potential damage caused to streams by wash water. Direct wash water to grass area for filtration and infiltration. Never allow wash water to flow into street or storm drains. | <ul style="list-style-type: none"> County Publication sent annually to homeowners PSAs on local cable station Handouts at local environmental events, 4 per year minimum | Residential car washing is specifically allowed, but it still may contribute significant sediment if wash water is not properly handled. |
| | Contractors Involved in Land-Disturbing Activities | Development Services Permit Records and Yellow Pages | 787 | <ul style="list-style-type: none"> Damage caused to streams by sediment. Healthy fish populations require clear stream bottoms. Silt fence is not enough. Limit disturbed areas. Stabilize as quickly as possible. | <ul style="list-style-type: none"> Brochure given to land-disturbance permittee when permit is issued Brochure given with enforcement actions Newsletter mailed on an annual basis | Erosion and sediment control is required by regulations; however, more effective implementation may occur with additional education. |

| High-Priority Water Quality Issue | Target Audiences | Means to Determine Audience Size | Audience Size | Overall Messages | Strategies to Deliver Messages MS4 Permit Category: Traditional Written Materials; Media Materials | Rationale |
|-----------------------------------|--|------------------------------------|------------------------|--|---|--|
| #2 BACTERIA | Restaurants | Business Licenses/ Yellow Pages | 488 | <ul style="list-style-type: none"> Excessive bacteria hinder stream usage and contribute to algal overgrowth, which hurts aquatic life. Discharge all wastewater to sanitary sewers. Keep exterior trash receptacles and dumpsters covered and do not wash out into storm drain. Clean kitchen hoods and floor mats; properly dispose of the wastewater. | <ul style="list-style-type: none"> Mailer, annually PSAs on local cable station | Uncovered dumpsters containing garbage and greasy floor mats that are rinsed out onto the pavement can contribute bacteria to the MS4, which discharges directly to local streams. |
| | Pet / Kennel Owners (dogs/cats) | Pet Licenses | Dog: 6149 Cat: 310 | <ul style="list-style-type: none"> Excessive bacteria hinder stream usage. Dog waste ends up in streams. Pick up after your pet and properly dispose of waste. | <ul style="list-style-type: none"> County publication sent annually to homeowners & kennels PSAs on local cable station | Dog waste is a major source of bacteria in local streams. |
| | | Kennel Licenses | 180 | | | |
| | Veterinarian Offices | Business Licenses/ Yellow Pages | 28 | <ul style="list-style-type: none"> Excessive bacteria hinder stream usage. Dog waste ends up in streams. Pick up after pets and properly dispose of waste. | <ul style="list-style-type: none"> Brochures sent to veterinarian offices, annually PSAs on local cable station | Dog waste is a major source of bacteria in local streams. |
| | Pet Stores/Pet Boarding/ Grooming/ Stables | Business Licenses/ Yellow Pages | 50 | <ul style="list-style-type: none"> Excessive bacteria hinder stream usage. Dog waste ends up in streams. Pick up after pets and properly dispose of waste. | <ul style="list-style-type: none"> Brochures sent to pet stores, annually PSAs on local cable station | Dog waste is a major source of bacteria in local streams. |
| | County Police and Firemen; Animal Control Officer | County Records | 2 | <ul style="list-style-type: none"> Excessive bacteria hinder stream usage. Dog waste ends up in streams. Pick up after pets and properly dispose of waste. | <ul style="list-style-type: none"> Mailer, annually | Dog waste is a major source of bacteria in local streams; these County employees own or handle dogs as part of their work. |
| | Homeowners | Tax Records | 35,094 | <ul style="list-style-type: none"> Do not feed wildlife Do not feed pets outdoors | <ul style="list-style-type: none"> Mailer, annually | By encouraging wildlife to come close to homes, their feces have a higher chance of entering the MS4. |
| | Septic System Owners | Tax Records; WVWA | ~14,169 septic systems | <ul style="list-style-type: none"> Keep septic system maintained; provide periodic pump out. Repair failing septic systems. | <ul style="list-style-type: none"> Mailer, annually | Malfunctioning or poorly maintained onsite sewage disposal systems may result in discharges of bacteria from human waste. |

| High-Priority Water Quality Issue | Target Audiences | Means to Determine Audience Size | Audience Size | Overall Messages | Strategies to Deliver Messages MS4 Permit Category: Traditional Written Materials; Media Materials | Rationale |
|-----------------------------------|---------------------------|------------------------------------|---------------|---|---|--|
| #3 NUTRIENTS | Homeowners | Tax Records/GIS | 35,094 | <ul style="list-style-type: none"> Excess nutrients damage streams. Do not over-fertilize. Use soil tests. Keep fertilizer from pavements. Do not overwater lawns. | <ul style="list-style-type: none"> County Publication sent annually to Homeowners PSAs on local cable station | Excessive nutrients are carried from lawns and other managed turf areas to the County's MS4 and then to local streams; this leads to algal overgrowth in the streams, which adversely impacts fish and other marine life |
| | Nurseries/ Greenhouses | Business Licenses/ Yellow Pages | 13 | <ul style="list-style-type: none"> Excess nutrients damage streams. Do not over-fertilize. Use soil tests. Keep fertilizer from pavements. | <ul style="list-style-type: none"> Mailer, annually PSAs on local cable station | |
| | Lawn Care Services | Business Licenses/ Yellow Pages | 158 | <ul style="list-style-type: none"> Excess nutrients damage streams. Do not over-fertilize. Use soil tests. Keep fertilizer from pavements. Encourage use of organic products. | <ul style="list-style-type: none"> Mailer, annually PSAs on local cable station | |



MCM-2: Public Involvement and Participation

This minimum control measure (MCM) is intended to provide a means for:

1. The public to report potential illicit discharges, improper disposal, or spills to the MS4, complaints regarding land disturbing activities, or other potential stormwater pollution concerns.
2. The public to provide comments on the permittee's MS4 program plan.
3. The County to respond to public comments received on the MS4 program plan.
4. The County to maintain documentation of public comments received on the MS4 program and associated MS4 program plan and the permittee's response.

The County has developed the following Best Management Practices (BMPs) to meet these program goals:

BMP 2-1: Storm Drain Stenciling Program

The County will implement a storm drain inlet stenciling program, which is designed to engage citizens and educate the public about the consequences of dumping waste into the storm drainage system.

BMP 2-2: Stormwater Public Events

The County will participate in and/or conduct at least four (4) public events per year (in two different categories, as listed in Table 2 in the MS4 Permit) to provide an opportunity for public involvement to improve water quality and support local restoration and clean-up projects.

BMP 2-3: MS4 Program and Stormwater Pollution Prevention Website

Roanoke County has updated and will continue to maintain the webpage dedicated to the MS4 program and stormwater pollution prevention.

BMP 2-4: Household Hazardous Waste Collection Events

Roanoke County will participate in Household Hazardous Waste Collection events to help citizens dispose of household materials that could be hazardous to dispose of in landfills.

This report provides a detailed description of each BMP, the anticipated time frame in which the activities will occur, and a metric for each activity to determine if the activity is beneficial to water quality, all standard operating procedures or policies necessary to implement each BMP, the measurable goal by which each BMP will be evaluated, and the persons, positions, or departments responsible for implementing each BMP.

BMP 2-1: Storm Drain Stenciling Program

The goal of this BMP is to implement a storm drain inlet stenciling program. This effort will be coordinated with interested parties from local schools, neighborhoods, businesses, and other groups to stencil messages on storm drain inlets to educate people about the consequences of dumping waste into the storm drainage system.

Responsible Party: Roanoke County's Department of Development Services.

Schedule and Evaluation:

Through its public education and outreach efforts, the County will solicit volunteers to stencil a minimum of 50 storm drain inlets per year with messages designed to raise public awareness about stormwater pollution. The County will document the actual number and location of inlets that are stenciled in each permit year.

Standard Operating Procedures or Policies:

None.

Supporting Documents:

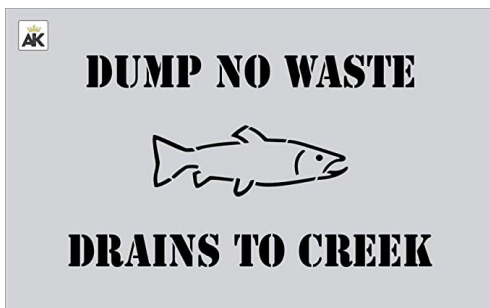
Storm Drain Stenciling Program Document with Application November 2022
Mylar Stencils (See below.)

Measurable Goals:

The County will document the number of storm drain inlets stenciled each year, the number of participants, and the groups that participated. Using these numbers as indicators, the County will evaluate the effectiveness of this BMP and adjust it, as necessary, to increase attendance.

The Annual Report shall include the following information:

- Number and location of storm drains that were stenciled.
- Number of participants and names of groups participating.
- Evaluation and proposed modifications to this BMP based on analysis of attendance record.



Mylar stencils offer volunteers a variety of messages to stencil on local storm drains to raise public awareness about stormwater pollution.

BMP 2-2: Stormwater Public Events

The goal of this BMP is to engage citizens in various public events to raise awareness about ways to improve water quality and to support local restoration and clean-up projects. To that end, Roanoke County will participate in and/or conduct at least 4 public events per year (in two different categories, as listed in Table 2 in the MS4 Permit (Part I.E.2) to bring attention to current stormwater pollution issues.

Responsible Party:

The County's Department of Development Services (DS), in conjunction with the Western Virginia Water Authority (WVWA), Roanoke Valley Resource Authority (RVRA), and the County's Department of Parks Recreation and Tourism (PRT).

Schedule and Evaluation:

The County will participate in and/or conduct at least four of the events listed in Table 2-2 from at least two of the MS4 categories on an annual basis to engage the public and raise awareness about stormwater pollution issues.

Table 2-2. Available Stormwater Public Events

| Public Event | Responsible Party | Category (per MS4 Permit) | Metric |
|--|--------------------------|--|---|
| Blue Ridge Kite Festival* | County (DS, PRT) | Public Education Activity | Number of participants |
| Hello Summer Festival* | County (DS, PRT) | Public Education Activity | Number of participants |
| County Parks Volunteer Clean-Up Events | County (PRT) | Restoration; Disposal or Collection | Number of events conducted; number of volunteers/participants |
| Earth Day Roanoke | County (DS/PRT) | Public Education Activity | Number of participants |
| Household Hazardous Waste Collection Events (See BMP 2-4) | RVRA | Disposal or Collection | Weight of waste collected; number of participants |
| Storm Drain Stenciling Program (See BMP 2-1) | County (DS) | Pollution Prevention | Number and location of storm drains stenciled; number of participants |
| Implementation of Pet Waste Stations in Parks and Along Greenways (See BMP B-1 in Roanoke County's Bacteria TMDL Action Plan) | County (PRT) | Pollution Prevention | Number and location of pet waste stations installed/maintained |
| Stormwater Education Program for Roanoke County's Schoolchildren (meets applicable SOLs; See BMP 1-4) | WVWA | Public Education Activity; Monitoring | Number of programs provided; number of children taught |

*New option in 2025

The County will document the details of these events in accordance with the metrics that are specified above. The County will evaluate the effectiveness of the various public events to determine if they are beneficial to water quality.

Standard Operating Procedures or Policies:

None.

Supporting Documents:

Partnership Service Agreement RoCo-WVWA September 2023

Measurable Goals:

The County will document the details of the events, the number of County or WVWA participants, and the number of people in attendance (where applicable). Success for this BMP will be measured by the completion of at least four of the listed events and fulfillment of their corresponding metrics.

The Annual Report shall include the following information:

These items, where appropriate, will be reported for the various public events:

- A description of the public involvement activities implemented by the County, including any efforts to reach out and engage all economic and ethnic groups.
 - Event name (and agenda, if applicable).
 - County or WVWA participants.
 - Number of participants.
 - Number of citizens (or students) in attendance.
- A report of the metric as defined for each event and an evaluation as to whether or not the activity is beneficial to improving water quality.
 - Weight of trash collected.
 - Number of stream schools given.
 - Weight of hazardous waste materials collected.
 - Number and location of pet waste stations installed/maintained.
 - Number and location of storm drains stenciled.
- The name of other MS4 permittees with whom Roanoke County collaborated in the public involvement opportunities.

BMP 2-3: MS4 Program and Stormwater Pollution Prevention Website

Roanoke County will maintain and monitor its Stormwater website, which provides information to the public concerning the County's Municipal Separate Storm Sewer System (MS4) Program, pertinent ordinances, design guidelines, general information, contact information, stormwater pollution prevention information, educational materials (newsletters, fact sheets, posters, and more), and links to other organizations and sites. The messages will be coordinated with the high-priority stormwater issues identified in BMP 1-5.

As part of the Stormwater website, the County will maintain a webpage dedicated to the MS4 Program, which will contain MS4 Permit information, including the effective MS4 Permit and coverage letter, the most current MS4 Program Plan, the Annual Report for each permit year covered by the current permit, and a mechanism for the public to report (i) potential illicit discharges, improper disposal, or spills to the MS4, (ii) complaints regarding land disturbing activities, or (iii) other potential stormwater pollution concerns. This site will also include the methods for how the public can provide input on Roanoke County's MS4 program.

For citizens who wish to submit a stormwater-related concern or provide input on the MS4 Program Plan, the following links are available on the County's Stormwater website:

- [*Report Stormwater Pollution Concerns*](#)
- [*Report Construction Site/Land Disturbing Complaints*](#)
- [*Submit comments on the County's MS4 Program Plan*](#)

Responsible Party:

The Department of Development Services, with support from Roanoke County's webmaster.

Schedule and Evaluation:

Roanoke County will maintain a stormwater website and MS4 webpage and document their usage, including the annual number of visits to each page. The stormwater website will contain the appropriate videos from the County's IDDE Public Outreach kit (discussed in BMP 1-5) to inform the public about the hazards and legal ramifications of illicit discharges. It will also include recent versions of the County's stormwater-related public education materials, such as newsletters, fact sheets, posters, brochures, etc.

The County will monitor the most- and least-visited pages to determine if changes are needed to help expand the audience. Roanoke County will submit page statistics and any intended changes with the annual report.

- **Stormwater:** <https://www.roanokecountyva.gov/stormwater>
- **MS4 Program:** <https://www.roanokecountyva.gov/1755/Stormwater-MS4-Permit>

The annual report for each year of the current permit's term will be posted to this webpage no later than 30 days after it has been submitted to DEQ.

Standard Operating Procedures or Policies:

Procedures for Addressing MS4-Related Public Comments November 2025

Supporting Documents:

None.

Measurable Goals:

Success for this BMP will be measured by the successful posting of the MS4 Permit, the corresponding permit coverage letter, the MS4 Program Plan, and the MS4 Annual Report (the latter of which will be posted within 30 days following its submittal to DEQ), posting of the annual education materials (newsletters, fact sheets, posters), and the provision of a mechanism for the public to report stormwater pollution complaints and provide input on Roanoke County's MS4 program.

The County provides several reporting options for the public through the following links, all three of which are on the Stormwater website and the MS4 Program webpage:

- [*Report Stormwater Pollution Concerns*](#)
- [*Report Construction Site/Land Disturbing Complaints*](#)
- [*Submit comments on the County's MS4 Program Plan*](#)

In addition, the County will analyze the webpage statistics including the most- and least-popular material to evaluate the website's effectiveness.

The Annual Report shall include the following information:

- A summary of any public comments on the MS4 program received and how the County responded.
- A summary of stormwater pollution complaints received under the procedures established in Part I E 2 a (1), excluding natural flooding complaints, and how the County responded.
- The webpage address to the County's MS4 program and stormwater website, to include:
 - mechanisms for the public to report (i) potential illicit discharges, improper disposal, or spills to the MS4, (ii) complaints regarding land disturbing activities, or (iii) other potential stormwater pollution concerns.
 - methods for how the public can provide input on the permittee's MS4 program.
- Page statistics.
- Intended changes.
- Evaluation and resulting modifications to this BMP based on results of analysis of measurable goals.

BMP 2-4: Household Hazardous Waste Collection Events

The goal of this BMP is to provide citizens with an opportunity to participate in Household Hazardous Waste Collection events, including Rx Take-Back events, to help them dispose of household materials and unused medications that could be hazardous if disposed of in landfills.

Responsible Party:

The Department of Development Services, through the Roanoke Valley Resource Authority (RVRA) and the Western Virginia Water Authority (WVWA).

Schedule and Evaluation:

Roanoke County will participate in at least one Household Hazardous Waste (HHW) Collection event each year through the RVRA and one Rx Take-Back event through the WVWA. For each event, the County will document the number of attendees (if available) and the total weight of the collected waste.

Standard Operating Procedures or Policies:

None.

Supporting Documents:

Partnership Service Agreement RoCo-WVWA September 2023

Measurable Goals:

Success for this BMP will be measured by the continued participation in Household Hazardous Waste Collection Events and the Rx Take-Back events.

The Annual Report shall include the following information:

- **Household Hazardous Waste Collection Event**
 - Number of participants
 - Weight of waste collected
- **Rx Take-Back events**
 - Number of participants (if available)
 - Weight of waste collected



MCM-3: Illicit Discharge Detection and Elimination (IDDE)

The goal of this minimum control measure is to develop, implement, and enforce a program to detect and eliminate illicit discharges to the storm sewer system. The BMPs that have been established to complete this measure are listed below:

BMP 3-1: Municipal Separate Storm Sewer System (MS4) Map

Through its GIS database, the County maintains an updated map of its Municipal Separate Storm Sewer System (MS4) within the regulated MS4 service area. The map is available to the public upon request.

BMP 3-2: Illicit Discharge Ordinance

Roanoke County's Illicit Discharge Ordinance has been adopted and will be maintained to provide authority to address illicit discharges. It includes language prohibiting non-stormwater discharges into the storm drainage [MS4] system.

BMP 3-3: Illicit Discharge Detection and Elimination (IDDE) Program

Roanoke County maintains written procedures and implements a program to detect, identify, and address non-stormwater discharges and illegal dumping into its MS4.

BMP 3-4: Dry Weather Screening

Roanoke County implements a program to annually inspect at least 50 storm drain outfalls within its MS4 area in search of unauthorized discharges.

This report provides a detailed description of each BMP, all standard operating procedures or policies necessary to implement each BMP, the measurable goal by which each BMP will be evaluated, and the persons, positions, or departments responsible for implementing each BMP.

BMP 3-1: Municipal Separate Storm Sewer System (MS4) Map

The goal of this program is to develop and maintain an accurate MS4 map (with corresponding information table), which shows the storm sewer system that is owned or operated by the County within the regulated MS4 service area.

The MS4 map shall include the location of MS4 outfalls that discharge to surface waters, a unique identifier for each mapped item required in Part I.E.3 of the MS4 Permit, the name and location of receiving waters to which the MS4 outfall or point of discharge discharges, the MS4 regulated service area, and all stormwater management facilities owned or operated by Roanoke County.

The information table associated with the MS4 map may be maintained as a shapefile attribute table and shall include the following information for each outfall or point of discharge for those cases in which Roanoke County elects to map the known point of discharge in accordance with Part I.E.3.a.(1)(a):

- a. A unique identifier as specified on the MS4 map.
- b. The latitude and longitude of the outfall or point of discharge.
- c. The estimated regulated acreage draining to the outfall or point of discharge.
- d. The name of the receiving water.
- e. The 6th Order Hydrologic Unit Code of the receiving water.
- f. An indication as to whether the receiving water is listed as impaired in the Virginia 2022 305(b)/303(d) Water Quality Assessment Integrated Report.
- g. The name of any EPA approved TMDLs for which the permittee is assigned a wasteload allocation.

Responsible Party:

The Department of Development Services, with assistance from the Department of Information Technology.

Schedule and Evaluation:

No later than October 1 of each year, Roanoke County will update the MS4 map and outfall information table to include any new outfalls constructed or TMDLs approved or during the immediately preceding reporting period.

In addition, no later than November 1, 2025, Roanoke County will submit to DEQ a format file geodatabase or two shapefiles that contain at a minimum:

- a. A point feature class or shapefile for outfalls with an attribute table containing outfall data elements required in accordance with Part I E 3 a (2) of the permit; and
- b. A polygon feature class or shapefile for the MS4 service area as required in accordance with Part I E 3 a (1) (d) of the permit with an attribute table containing the following information:

- (i) MS4 operator name.
- (ii) MS4 Permit number (VAR04).
- (iii) MS4 service area total acreage rounded to the nearest hundredth.

Roanoke County will provide written notification to any downstream adjacent MS4 of any known physical interconnection established or discovered after the effective date of the current permit. (To see the associated letters sent to the adjacent MS4s, see the folder titled Introduction in the appendix of this report.)

Standard Operating Procedures or Policies:

None.

Supporting Documents:

The MS4 Map and Outfall Information Table required by Part I.E.3.a. of the MS4 Permit:

- MS4 Map September 2025
- MS4 Outfalls Table September 2025

Measurable Goals:

Success for this BMP will be measured by demonstrating that the County has updated its MS4 map and outfall information table to include any new outfalls constructed or TMDLs approved or both during the immediately preceding reporting period.

The Annual Report shall include the following information:

- A confirmation statement that the MS4 map and outfall information table have been updated to reflect any changes to the MS4 occurring on or before June 30 of the reporting year.
- A copy of written notification to any downstream adjacent MS4 of any known physical interconnection established or discovered after the effective date of the MS4 Permit, which is November 1, 2023.

BMP 3-2: Illicit Discharge Ordinance

The goal of this BMP is to adopt an ordinance that prohibits unauthorized non-stormwater discharges into the County's Municipal Separate Storm Sewer System (MS4) and provides the County with an enforcement mechanism.

Responsible Party:

The Department of Development Services, in cooperation with the County Attorney.

Schedule and Evaluation:

Roanoke County adopted an Illicit Discharge Ordinance on April 22, 2014, and it is compliant with Virginia's stormwater regulations. Enforcement measures and penalties are included in the Illicit Discharge Ordinance. The County will update the ordinance, as necessary, to maintain the effectiveness of the program.

Standard Operating Procedures or Policies:

- Illicit Discharge Detection and Elimination Procedures March 1, 2022, pursuant to Part I.E.3.c. of the MS4 Permit.

Supporting Documents:

- Illicit Discharge Ordinance July 1, 2014.

Measurable Goals:

Success of this BMP will be measured by the continued implementation of the County's Illicit Discharge Ordinance and its compliance with the MS4 Permit.

The Annual Report shall include the following information:

- Analysis of compliance of the Roanoke County Illicit Discharge Ordinance with the MS4 Permit.
- Any changes to the Illicit Discharge Ordinance.

BMP 3-3: Illicit Discharge Detection and Elimination (IDDE) Program

The goal of this BMP is to detect, identify, and eliminate non-stormwater discharges and illegal dumping into the County's MS4. As part of this effort, the County will maintain, implement, and enforce illicit discharge detection and elimination (IDDE) written procedures designed to detect, identify, and address unauthorized non-stormwater discharges, including illegal dumping, to the MS4 to effectively eliminate the unauthorized discharge. Written procedures shall include:

- 1) A description of the legal authorities, policies, standard operating procedures, or other legal mechanisms available to the permittee to eliminate identified sources of ongoing illicit discharges, including procedures for using legal enforcement authorities.
- 2) A timeframe upon which to conduct an investigation to identify and locate the source of any observed unauthorized non-stormwater discharge. Priority of investigations shall be given to discharges of sanitary sewage and those believed to be a risk to human health and public safety. Discharges authorized under a separate VPDES or state permit require no further action under the MS4 Permit.
- 3) Methodologies to determine the source of all illicit discharges. If the County is unable to identify the source of an illicit discharge within six months of beginning the investigation, then the permittee shall document that the source remains unidentified. If the observed discharge is intermittent, the permittee shall document that attempts to observe the discharge flowing were unsuccessful.
- 4) Methodologies for conducting a follow-up investigation for illicit discharges that are continuous or that Roanoke County expects to occur more frequently than a one-time discharge to verify that the discharge has been eliminated except as provided for in Part I.E.3.c.(4) of the MS4 Permit.
- 5) A mechanism to track all illicit discharge investigations to document the following:
 - a. The dates that the illicit discharge was initially observed, reported, or both.
 - b. The results of the investigation, including the source, if identified.
 - c. Any follow-up to the investigation.
 - d. Resolution of the investigation.
 - e. The date that the investigation was closed.

Responsible Party:

The Department of Development Services.

Schedule and Evaluation:

Roanoke County maintains written procedures to detect, identify, and address unauthorized non-stormwater discharges, including illegal dumping, to its MS4. The County will update these procedures, as necessary, to maintain the effectiveness of the program.

Standard Operating Procedures or Policies:

- Illicit Discharge Detection and Elimination Procedures March 1, 2022, pursuant to Part I.E.3.c. of the MS4 Permit.

Supporting Documents:

- MS4 Map September 2025
- MS4 Outfalls Table September 2025
- Illicit Discharge Reporting Form December 2025

Measurable Goals:

Success for this BMP will be measured by compliance with the County's written procedures and documentation of the IDDE complaints received/investigated and closed.

The Annual Report shall include the following information:

- A list of illicit discharges to the MS4, including spills reaching the MS4 with information as follows:
 - The location and source of illicit discharge.
 - The dates that the discharge was observed, reported, or both.
 - Whether the discharge was discovered by the permittee during dry weather screening, reported by the public, or other method (describe).
 - How the investigation was resolved.
 - A description of any follow-up activities.
 - The date the investigation was closed.

BMP 3-4: Dry Weather Screening

The goal of this BMP is to inspect storm drain outfalls to detect illicit discharges during dry weather (i.e., when the storm drainage system would normally be dry) so that actions may be taken to eliminate them.

To support this effort, the County will maintain dry weather field screening protocols to detect, identify, and eliminate illicit discharges to the MS4. The protocols shall include:

- a) A prioritized schedule of field screening activities and rationale for prioritization determined by Roanoke County based on such criteria as age of the infrastructure, land use, historical illegal discharges, dumping, or cross connections.
- b) A schedule to screen a minimum of 50 outfalls annually such that no more than 50% are screened in the previous 12-month period. The 50% criteria is not applicable if all outfalls have been screened in the previous three years.
- c) Roanoke County may adopt a risk-based approach to dry weather screening identifying observation points based upon illicit discharge risks upstream of an outfall. Observation points may include points of interconnection, manholes, points of discharge, conveyances, or inlets suspected to have a high likelihood of receiving illicit discharges.
 - o Each observation point screened may be counted as one outfall screening activity equivalent and counted towards the requirements of Part I.E.3.c.(2) (b) or (2) (c); however, at least 50% of the minimum annual screening events must include outfall screening.
 - o Illicit discharges reported by the public and subsequent investigations may not be counted as screening events; however, once the resolution of the investigation and the date the investigation was closed is documented, an observation point may be established for future screening events.
- d) A checklist or mechanism to track the following information for dry weather screening events:
 - o The unique identifier for the outfall or observation point.
 - o Time since the last precipitation event.
 - o The estimated quantity of the last precipitation event.
 - o Site descriptions (e.g., conveyance type and dominant watershed land uses).
 - o Observed indicators of possible illicit discharge events, such as floatables, deposits, stains, and vegetative conditions (e.g., dying or dead vegetation, excessive vegetative growth)
 - o Whether or not a discharge was observed.
 - o If a discharge was observed, the estimated discharge rate and visual characteristics of the discharge (e.g., odor, color, clarity) and the physical condition of the outfall.
 - o For observation points, the location, downstream outfall unique identifier, and risk factors or rationale for establishing the observation point.

Responsible Party:

The Department of Development Services.

Schedule and Evaluation:

Roanoke County implements an annual outfall inspection program to detect and locate the source of dry weather illicit discharges that enter its MS4. The County will conduct additional outfall inspections, as necessary, to maintain the effectiveness of the program.

Standard Operating Procedures or Policies:

- Illicit Discharge Detection and Elimination Procedures March 1, 2022 (Also refer to description in **BMP 3-3.**)

Supporting Documents:

- MS4 Map September 2025
- MS4 Outfalls Table September 2025

Measurable Goals:

Success for this BMP will be measured by field screening a minimum of 50 outfalls per year and documenting the results of these inspections, as specified above.

The Annual Report shall include the following information:

- The total number of outfalls and observation points screened during the reporting period as part of the dry weather screening program.
- A summary of the inspection results.
- If an illicit discharge into the MS4 was discovered, the County will provide the following information:
 - The location and source of illicit discharge.
 - The dates that the discharge was observed, reported, or both.
 - Indication that the discharge was discovered by Roanoke County during dry weather screening.
 - How the investigation was resolved.
 - A description of any follow-up activities.
 - The date the investigation was closed.



MCM-4: Construction Site Stormwater Runoff and Erosion and Sediment Control

The goal of this minimum control measure is to reduce pollutants that may enter the MS4 via stormwater runoff from construction activities. To accomplish this, the County implements the Virginia Erosion and Stormwater Management Program (VESMP). The BMPs that will be used to satisfy this MCM are listed below:

BMP 4-1: Legal Authorities

Roanoke County utilizes its legal authority, such as ordinances, permits, orders, specific contract language, and interjurisdictional agreements, to ensure compliance with the MS4 Permit for erosion and sediment control and construction site stormwater runoff control.

BMP 4-2: Plan Review

The County conducts plan reviews for proposed construction projects to ensure compliance with the Virginia Erosion and Stormwater Management Program (VESMP) requirements, ensuring proper erosion and sediment controls and stormwater management devices, including their maintenance provisions, are shown on the plan.

BMP 4-3: Site Inspections

The County maintains and implements written inspection procedures to ensure compliance with the Virginia Erosion and Stormwater Management Program (VESMP) requirements and to ensure that onsite erosion and sediment controls are properly implemented and maintained. The County also requires implementation of appropriate controls to prevent non-stormwater discharges to the MS4, such as wastewater, concrete washout, fuels and oils, and other illicit discharges.

BMP 4-4: Compliance and Enforcement

The County maintains and implements written procedures for VESMP compliance and enforcement regarding construction site stormwater runoff requirements.

BMP 4-5: Employee and Contractor Certifications

Roanoke County ensures that employees and contractors serving as plan reviewers, inspectors, program administrators, and construction site operators obtain the appropriate certifications as required under the Virginia Erosion and Stormwater Management Program (VESMP).

This report provides a detailed description of each BMP, all standard operating procedures or policies necessary to implement each BMP, the measurable goal by which each BMP will be evaluated, and the persons, positions, or departments responsible for implementing each BMP.

BMP 4-1: Legal Authorities

The goal of this BMP is for the County to describe and utilize its legal authorities, such as ordinances, permits, orders, specific contract language, policies, and interjurisdictional agreements, to ensure compliance with Part I.E.4.a. of the MS4 Permit for erosion and sediment control and construction site stormwater runoff control.

The County uses the following legal authorities:

- **Erosion and Stormwater Management (ESM) Ordinance** - first adopted on August 1, 2024 and later revised on September 23, 2025. This ordinance integrates the County of Roanoke's stormwater management (SWM) requirements with its erosion and sediment control (ESC) requirements to establish a consolidated program consistent with the Virginia Erosion and Stormwater Management Program (VESMP). The purpose of this ordinance is to ensure the general health, safety, and welfare of its citizens to protect the quality and quantity of state waters from the potential harm of unmanaged stormwater and soil erosion, including protection from land disturbing activities causing unreasonable degradation of properties, water quality, stream channels, steep slopes, and other natural resources, and to establish procedures whereby stormwater requirements related to water quality and quantity shall be administered and enforced.
 - The ordinance requires ESC controls for all regulated land disturbances of 2,500 square feet or more and an engineered ESC Plan for any land disturbance greater than 10,000 square feet. The ESC Plan must provide for the implementation of appropriate erosion and sediment controls, to include their proper placement, design, and maintenance requirements. The ordinance includes site inspection and compliance/enforcement procedures for erosion and sediment control.
 - The ordinance requires a SWM plan or an Agreement-in-lieu-of a Stormwater Management Plan for all regulated construction activities that disturb 1 acre or greater. The ordinance includes site inspection and compliance/enforcement procedures for stormwater as it relates to active construction and post-construction stormwater management facilities.
- **Erosion and Sediment Control (ESC) Permit** (yellow placard) - authorizes commencement of land disturbing activities for which an approved ESC Plan or Agreement-in-lieu-of an ESC Plan have been approved by the County.
- **Combined Erosion and Stormwater Management Program (VESMP) Permit - Individual** (blue placard) - issued by the County for individual projects that will cause one acre or more of land disturbance, and for which there is a County-approved stormwater management plan.
- **Combined Erosion and Stormwater Management Program (VESMP) Permit - Overall Development** (green placard) - issued by the County for both commercial and residential projects for which the project itself does not require a VESMP

permit or SWPPP but the overall development within which the project is located requires a VESMP permit.

- **Agreement-in-lieu-of an Erosion and Sediment Control Plan** - requires compliance with the 19 minimum standards, as listed in Virginia's Erosion and Stormwater Management Regulation (9VAC25-875) for projects that disturb less than 10,000 square feet.
- **Agreement-in-lieu-of a Stormwater Management Plan** - requires compliance with certain stormwater management control strategies and is only applicable for the construction of single-family homes.
- **DEQ VPDES Approval Letter (MS4 Permit Coverage)** - provides Roanoke County with coverage under the MS4 Permit for Discharges of Stormwater from Small Municipal Separate Storm Sewer Systems MS4 Permit Number VAR040022.
- **DEQ Approval Letter Alternative Inspection Program (ESC)** - authorizes Roanoke County to conduct an alternative inspection program for ESC.
- **Stormwater Management Design Manual** - provides design guidelines for regulated land-disturbing projects to ensure compliance with VESMP requirements.

Responsible Party:

- The Department of Development Services implements the County's VESMP, which includes conducting plan reviews, site inspections, compliance/enforcement activities, and project permitting.
- The County Attorney's office provides support to the Development Services during compliance/enforcement actions, as necessary.

Schedule and Evaluation:

Roanoke County implements an ESM ordinance to comply with Virginia's Erosion and Stormwater Management (VESM) Regulation (9VAC25-875). The County will update its ordinance and supporting documents, as needed, to remain consistent with the state program.

Standard Operating Procedures or Policies:

None.

Supporting Documents:

- Erosion and Stormwater Management (ESM) Ordinance 9-23-25
- Erosion and Sediment Control (ESC) Permit (yellow) 4-23-25
- Combined Erosion and Stormwater Management Program (VESMP) Permit - Individual (blue) 7-25-19
- Combined Erosion and Stormwater Management Program (VESMP) Permit - Overall Development (green) 7-25-19
- Explanation of Permit Card Colors 7-25-19
- Agreement-in-lieu-of an Erosion and Sediment Control Plan 2-1-24
- Agreement-in-lieu-of a Stormwater Management Plan 2-1-24

- DEQ VPDES Approval Letter (MS4 Permit Coverage) 10-30-23
- DEQ Approval Letter Alternative Inspection Program 7-29-13
- Stormwater Management Design Manual 3-22-16
- Appointment of County's VESMP Administrator 7-31-24
- Roanoke County Contract language for hazardous material 9-19-23

Measurable Goals:

Success for this BMP will be measured by the annual evaluation of the ESM ordinance, coordinating updates to the supporting documents, and the continued compliance of the ordinance with the VESMP.

The Annual Report shall include the following information:

- Analysis of the Roanoke County ESM ordinance and any proposed changes to it.

BMP 4-2: Plan Review

The goal of this BMP is to conduct plan reviews for proposed construction projects to ensure their compliance with the Virginia Erosion and Stormwater Management Program (VESMP) requirements, ensuring proper erosion and sediment controls and stormwater management devices, including their maintenance provisions, are shown on the plan.

Responsible Party:

The Department of Development Services.

Schedule and Evaluation:

Roanoke County reviews construction plans to ensure their compliance with the Virginia Erosion and Stormwater Management Program (VESMP) requirements. The County will update its supporting documents, as needed, to remain consistent with the state program.

Standard Operating Procedures or Policies:

- None.

Supporting Documents:

- Engineering Review Checklist 4-2-13
- Digital Plan Submission Guide 3-3-22
- Agreement-in-lieu-of an Erosion and Sediment Control Plan 2-1-24
- Agreement-in-lieu-of a Stormwater Management Plan 2-1-24
- Stormwater Management Design Manual 3-22-16

Measurable Goals:

Success for this BMP will be measured by documentation of the number of plans approved within the reporting period and the analysis and update of the supporting documents.

The Annual Report shall include the following information:

- Analysis of the supporting documents and any proposed changes.
- Total number of plans reviewed for ESC or VSMP compliance.

BMP 4-3: Site Inspections

The goal of this BMP is to maintain and implement written inspection procedures to ensure compliance with the Virginia Erosion and Stormwater Management Program (VESMP) requirements and to ensure that onsite erosion and sediment controls are properly implemented and maintained.

Further, Roanoke County will require implementation of appropriate controls to prevent non-stormwater discharges to the MS4, such as wastewater, concrete washout, fuels and oils, and other illicit discharges identified during land disturbing activity inspections. Non-stormwater discharges through the MS4, other than those identified in 9VAC25-890-20. D, are NOT authorized by the MS4 Permit.

Responsible Party:

The Department of Development Services.

Schedule and Evaluation:

Roanoke County maintains and implements site inspection procedures to comply with the VESMP. The County will update these procedures and supporting documents, as necessary, to remain consistent with the program, as they relate to construction site stormwater runoff. In addition, the County conducts inspections pursuant to its Alternate Inspection Schedule, as approved by DEQ.

Standard Operating Procedures or Policies:

- Erosion and Sediment Control (ESC) Inspection and Enforcement Procedures May 2020
- VSMP Inspection and Enforcement Procedures May 2020

Supporting Documents:

- Inspector Protocol March 5-8-20
- ESC Inspection Report October 2025
- VSMP Inspection Report October 2025
- Alternative Inspection Program (ESC) 7-29-13
- Alternative Inspection Frequency (ESC) - Tabular Rating Sheet 7-29-13
- DEQ Approval letter Alternative Inspection Program 7-29-13

Measurable Goals:

Success for this BMP will be measured by the annual evaluation of the written site inspection procedures and the number of inspections conducted.

The Annual Report shall include the following information:

- Analysis of the site inspection procedures and any proposed changes.
- Total number of construction site stormwater runoff (VESMP - both ESC and VSMP) inspections conducted.

BMP 4-4: Compliance and Enforcement

The goal of this BMP is to maintain and implement written procedures for requiring compliance on active construction sites through corrective action or enforcement action in accordance with the Virginia Erosion and Stormwater Management Program (VESMP) requirements.

Responsible Party:

- The Department of Development Services holds the overall responsibility to implement the County's Erosion and Stormwater Management (ESM) program to assure compliance with the VESMP, which includes conducting plan reviews, site inspections, compliance/enforcement activities, and project permitting.
- The County Attorney's office provides support to the Department of Development Services during compliance/enforcement actions, as necessary.

Schedule and Evaluation:

Roanoke County implements compliance and enforcement procedures to assure compliance with the VESMP on active construction sites. The County will revise its written compliance/enforcement procedures, as needed.

Standard Operating Procedures or Policies:

- Erosion and Sediment Control (ESC) Inspection and Enforcement Procedures May 2020
- VSMP Inspection and Enforcement Procedures May 2020

Supporting Documents:

- Erosion and Stormwater Management (ESM) Ordinance 9-23-25

Measurable Goals:

Success for this BMP will be measured by the annual evaluation of the VESMP compliance/enforcement procedures and documentation of the total number and type of compliance/enforcement actions implemented.

The Annual Report shall include the following information:

- Analysis of the compliance and enforcement procedures and any proposed changes.
- The total number of each type of compliance action and enforcement action implemented.

BMP 4-5: Employee and Contractor Certifications (Revised)

The goal of this BMP is to ensure that employees and contractors serving as plan reviewers, inspectors, program administrators, and construction site operators shall obtain the appropriate certifications as required under the Virginia Erosion and Stormwater Management Program (VESMP).

In addition, employees who oversee the performance of regulated land disturbance activities conducted by the County will have the qualifications to properly implement erosion and sediment control measures and will be DEQ-certified as Responsible Land Disturbance in accordance with the VESMP.

Responsible Party:

The Department of Development Services.

Schedule and Evaluation:

Roanoke County requires employees and contractors serving as plan reviewers, inspectors, program administrators, and construction site operators to obtain the appropriate certifications as required under the VESMP. Employees who oversee the performance of regulated land disturbance activities conducted by the County will be DEQ-certified as Responsible Land Disturbance.

Standard Operating Procedures or Policies:

None.

Supporting Documents:

None.

Measurable Goals:

Success for this BMP will be measured by maintenance of the Responsible Land Disturbance certification for applicable employees and by maintenance of pertinent certifications for employees and contractors serving as plan reviewers, inspectors, program administrators, and construction site operators.

The Annual Report shall include the following information:

- A list of applicable employees and the expiration date of their certification(s).



MCM-5: Post-Construction Stormwater Management for New Development and Development on Prior-Developed Lands

The goal of this minimum control measure is to address post-construction stormwater runoff that enters the County's MS4 by implementing a post-construction stormwater runoff management program, which includes maintenance and inspection requirements, to comply with the Virginia Erosion and Stormwater Management Program (VESMP). The BMPs that will be used to satisfy this minimum control measure are listed below:

BMP 5-1: Stormwater Management Legal Authorities

Roanoke County utilizes certain legal authorities to comply with Virginia's Erosion and Stormwater Management Program (VESMP) Regulations.

BMP 5-2: Inspections for Post-Construction Stormwater Management Facilities

Roanoke County maintains and implements written inspection and maintenance procedures for post-construction stormwater management facilities (SWMFs) that discharge to the MS4 (both public and private) to ensure their adequate long-term operation and maintenance pursuant to the VESMP requirements.

BMP 5-3 Stormwater Management Facility Tracking

Roanoke County maintains and implements an electronic database or spreadsheet of all known County-owned and privately-owned stormwater management facilities that discharge into the MS4.

BMP 5-4 Strategies to Encourage Long-Term Maintenance of Stormwater Control Measures on Single-Family Residential Lots

Roanoke County implements strategies to promote the long-term maintenance of stormwater control measures that are designed to treat stormwater runoff solely from the individual single family residential lot. These strategies are used in lieu of recorded maintenance agreements and post-construction inspections by the County.

BMP 5-5 Storm Sewer System Maintenance

Roanoke County implements a program to maintain and repair its storm sewer system within its MS4 program area. Such maintenance helps to keep the system

working as designed, which minimizes the risk of surcharging and overflows; it also helps to minimize street flooding associated with clogged inlet structures and conveyances.

This report provides a detailed description of each BMP named above, all standard operating procedures or policies necessary to implement each BMP, the measurable goal by which each BMP will be evaluated, and the persons, positions, or departments responsible for implementing each BMP.

BMP 5-1: Stormwater Management Legal Authorities

The goal of this BMP is to maintain and use certain legal authorities to comply with the Virginia Erosion and Stormwater Management Program (VESMP), as it relates to post-construction stormwater management facilities. The County uses the following legal authorities:

- **Erosion and Stormwater Management (ESM) Ordinance** - will be adopted on August 1, 2024, and integrates the County of Roanoke's stormwater management (SWM) requirements with its erosion and sediment control (ESC) requirements to establish a consolidated program consistent with the Virginia Erosion and Stormwater Management Program (VESMP). The purpose of this ordinance is to ensure the general health, safety, and welfare of its citizens to protect the quality and quantity of state waters from the potential harm of unmanaged stormwater and soil erosion, including protection from land disturbing activities causing unreasonable degradation of properties, water quality, stream channels, steep slopes, and other natural resources, and to establish procedures whereby stormwater requirements related to water quality and quantity shall be administered and enforced.
 - The ordinance requires ESC controls for all regulated land disturbances of 2,500 square feet or more and an engineered ESC Plan for any land disturbance greater than 10,000 square feet. The ESC Plan must provide for the implementation of appropriate erosion and sediment controls, to include their proper placement, design, and maintenance requirements. The ordinance includes site inspection and compliance/enforcement procedures for erosion and sediment control.
 - The ordinance requires a SWM plan or an Agreement-in-lieu-of a Stormwater Management Plan for all regulated construction activities that disturb 1 acre or greater. The ordinance includes site inspection and compliance/enforcement procedures for active construction and post-construction stormwater management facilities.

Responsible Party:

- The Department of Development Services has the overall responsibility to implement the County's ESM Ordinance.
- The County Attorney's office provides support to the Department of Development Services during compliance/enforcement actions, as necessary.

Schedule and Evaluation:

Roanoke County implements an ESM Ordinance to comply with the Virginia Erosion and Stormwater Management Program (VESMP). The County will update this ordinance and the supporting documents, as necessary, to remain consistent with the VESMP.

Standard Operating Procedures or Policies:

None.

Supporting Documents:

- DEQ VPDES Approval Letter (MS4 Permit Coverage) 10-30-23
- Stormwater Management Facilities Maintenance Agreement 11-18-22
- Erosion and Stormwater Management (ESM) Ordinance 9-23-25

Measurable Goals:

Success for this BMP will be measured by an annual evaluation of the ESM Ordinance and the other supporting documents.

The Annual Report shall include the following information:

- Analysis of compliance of the Roanoke County ESM Ordinance.
- Any changes that are planned for the ESM Ordinance.

BMP 5-2: Inspections for Post-Construction Stormwater Management Facilities

The goal of this BMP is to develop and implement written inspection and maintenance procedures for both County-owned and privately-owned post-construction stormwater management (SWM) facilities to provide for their long-term operation and maintenance pursuant to the Virginia Erosion and Stormwater Management Program (VESMP) requirements.

Inspections will be conducted as follows:

- County-owned SWM facilities will be annually inspected.
 - When it is determined that maintenance is required during inspections of County-owned facilities, Roanoke County (or the Roanoke County Public Schools, as appropriate) will conduct the maintenance in accordance with its written procedures.
- The County will inspect privately-owned SWM facilities that discharge into the MS4 once every 5 years. In addition, the County will:
 - Assure adequate long-term operation and maintenance by the owner of the stormwater management facility by requiring the owner to develop and record a maintenance agreement, including an inspection schedule to the extent allowable under state or local law or other legal mechanism.
 - Utilize its legal authority for enforcement of the maintenance responsibilities if maintenance is neglected by the owner.
 - Implement a progressive compliance and enforcement strategy, which is included in this MS4 Program Plan.
 - The County may utilize the inspection reports provided by the owner of a stormwater management facility as part of its inspection and enforcement program.

Responsible Party:

The Department of Development Services, with assistance from the County Attorney's office during compliance/enforcement actions, as needed.

- Note that Roanoke County Public Schools (RCPS) rely on the County's Department of Development Services to conduct inspections of school-owned SWMFs; however, RCPS conducts any required maintenance for school-owned SWMFs.

Schedule and Evaluation:

Roanoke County maintains and implements written inspection and maintenance procedures to ensure adequate long-term operation and maintenance of post-construction stormwater management facilities. The County will update these procedures and supporting documents, as necessary, to remain consistent with the VESMP.

Standard Operating Procedures or Policies:

- SWMF Inspection, Maintenance, and Enforcement Procedures November 2025

Supporting Documents:

- Stream Restoration of Wolf Creek in Goode Park Responsibilities and Maintenance Plan June 2020
- Glade Creek Stream Restoration at Vinyard Park Phase 1 - Responsibilities and Maintenance Plan August 4, 2017
- Glade Creek Stream Restoration at Vinyard Park Phase 2 Responsibilities and Maintenance Plan June 2019
- Murray Run Stream Restoration at Ogden Road - Responsibilities and Maintenance Plan Revised May 2018
- SWMF Inspection Forms (tailored for each facility type) January 2024
- Notice of Inspection BMPs August 2023
- Memorandum of Agreement RCPS August 2024 signed
- DEQ VPDES Approval Letter (MS4 Permit Coverage) 10-30-23
- Roanoke County Stormwater Facility Maintenance Schedule 9-5-25

Measurable Goals:

Success for this BMP will be measured by the annual evaluation of the written post-construction inspection procedures and completion of the required post-construction inspections.

The Annual Report shall include the following information:

- The number of privately-owned SWMF inspections conducted, and
 - The number of enforcement actions initiated by Roanoke County to ensure long-term maintenance of privately-owned SWMFs including the type of enforcement action.
- Total number of inspections conducted on SWMFs owned by Roanoke County and RCPS, and
 - A description of the significant maintenance, repair, or retrofit activities performed on the SWMFs owned or operated by Roanoke County and RCPS to enable them to continue to function as designed. (This does not include routine activities such as grass mowing or trash collection.)

BMP 5-3: Stormwater Management Facility Tracking

The goal of this BMP is to maintain an electronic database or spreadsheet of all known County-owned and privately-owned stormwater management facilities (SWMFs) that discharge into the MS4. This spreadsheet is available online at the following webpage: <https://www.roanokecountyva.gov/stormwater>

The County's database will include the following information, as applicable:

- The SWMF type
- The SWMF location (latitude and longitude)
- The 6th Order Hydrologic Unit Code in which the SWMF is located
- The acres treated by the SWMF, including total acres, impervious acres, and pervious acres
- The date the SWMF was brought online (MM/YYYY). If the date brought online is not known, the County will use June 30, 2005
- Indication as to whether the SWMF is owned by the County or privately-owned
 - If the stormwater management facility is privately-owned, whether or not a maintenance agreement exists
- Indication as to whether the SWMF is part of Roanoke County's local TMDL action plans
- The date of Roanoke County's most recent inspection of the SWMF

Responsible Party:

The Department of Development Services, with the assistance of the Department of Information Technology.

Schedule and Evaluation:

- The electronic database or spreadsheet of all known County-owned and privately-owned SWMFs that discharge into the MS4 will be updated no later than 30 days after (1) a new SWMF is brought online, (2) a new BMP is implemented to meet a TMDL load reduction, or (3) after discovery of an existing SWMF.
- Roanoke County will use the Virginia Construction Stormwater MS4 General Permit database for those land disturbing activities for which it was required to obtain coverage under the General VPDES Permit for Discharges of Stormwater from Construction Activities in accordance with Part III.B.1. of the MS4 Permit or a statement that the County did not complete any projects requiring coverage under the General VPDES Permit for Discharges of Stormwater from Construction Activities.

- No later than October 1 of each year, Roanoke County will electronically report all other SWMFs and BMPs implemented between July 1 and June 30 of each year using the DEQ BMP Warehouse and associated reporting template.

Standard Operating Procedures or Policies:

None.

Supporting Documents:

- Stormwater Management Facilities (SWMFs) that Discharge into the MS4 July 2025

Measurable Goals:

Success for this BMP will be measured by updating of the electronic database or spreadsheet and by submittal of the SWMF information to DEQ through the Virginia Construction Stormwater MS4 General Permit database and the DEQ BMP Warehouse, as described above.

The Annual Report shall include the following information:

- A confirmation statement that Roanoke County submitted SWMF information through the Virginia Construction Stormwater General Permit database for those land disturbing activities for which the County was required to obtain coverage under the General VPDES Permit for Discharges of Stormwater from Construction Activities in accordance with Part III.B.1. or a statement that the County did not complete any projects requiring coverage under the General VPDES Permit for Discharges of Stormwater from Construction Activities (9VAC25-880).
- A confirmation statement that Roanoke County electronically reported SWMFs using the DEQ BMP Warehouse in accordance with Part III.B.1. and 2. of the MS4 Permit.
- A confirmation statement that Roanoke County electronically reported SWMFs inspected using the DEQ BMP Warehouse in accordance with Part III.B.5. of the MS4 Permit.

BMP 5-4 Strategies to Encourage Long-Term Maintenance of Stormwater Control Measures on Single-Family Residential Lots

The goal of this BMP is to implement strategies to promote the long-term maintenance of stormwater control measures that are intended to treat stormwater runoff solely from the individual single family residential (SFR) lot. These strategies will be used to replace recorded maintenance agreements and post-construction inspections by the County.

Responsible Party:

The Department of Development Services.

Schedule and Evaluation:

Roanoke County implements various strategies to promote the long-term maintenance of stormwater control measures to treat runoff from SFR structures. The County will update these strategies, as necessary, to remain consistent with the VESMP program.

Standard Operating Procedures or Policies:

None.

Supporting Documents:

- Stormwater Newsletter March 2025
- Stormwater Tips for Homeowners May 2024

Measurable Goals:

Success for this BMP will be measured by tracking the number of new residential lots covered by the strategies, proper implementation of the strategies, and evaluating the effectiveness of the strategies in promoting the long-term maintenance of stormwater control measures.

The Annual Report shall include the following information:

- Number of new residential lots using the strategies each year.
- Implementation of the strategies.
- Evaluation of the effectiveness of the strategies in promoting long-term maintenance.

BMP 5-5 Storm Sewer System Maintenance

The goal of this BMP is to actively maintain and repair the County's storm sewer (i.e., drainage) system in its MS4 program area. Such maintenance helps to keep the system working as designed, which minimizes the risk of surcharging and overflows; it also helps to minimize street flooding associated with clogged inlet structures and conveyances. In addition, the County's maintenance crews have the potential to discover illicit connections and observe where pollutants may be entering the regulated storm sewer system.

Responsible Party:

The Department of Development Services, Division of Stormwater Operations and Maintenance.

Schedule and Evaluation:

Roanoke County implements and is committed to continuing its storm sewer (drainage) system maintenance program. The number of large stormwater maintenance/repair projects will be documented. In addition, the number of emergency projects and small-scale maintenance/repair projects completed each year will be tracked.

Standard Operating Procedures or Policies:

- Standard Operating Procedures (SOPs) for Pollution Prevention and Good Housekeeping - July 2025

Supporting Documents:

- Illicit Discharge Ordinance eff 7-1-2014
- Erosion and Stormwater Management (ESM) Ordinance 9-23-25

Measurable Goals:

Success for this BMP will be measured by the continuation of this program, and the increase in total value of improvement that has been completed to maintain the storm sewer system.

The Annual Report shall include the following information:

- Number of large projects completed.
- Number of small projects or emergency projects completed.
- Total value of improvements completed.



MCM-6: Pollution Prevention and Good Housekeeping for Facilities Owned or Operated by the Permittee Within the MS4 Service Area

The goal of this minimum control measure is to implement a Pollution Prevention and Good Housekeeping Program for County-owned facilities within the MS4 Permit area.

The BMPs that will be used to satisfy this minimum control measure are listed below:

BMP 6-1: Spill Prevention, Control, and Countermeasure (SPCC) Plans

Roanoke County has developed and will maintain Spill Prevention, Control, and Countermeasures (SPCC) plans for some of its municipal facilities. These plans will be updated, and new plans will be prepared, as needed.

BMP 6-2: Standard Operating Procedures (SOPs) for Pollution Prevention and Good Housekeeping

Roanoke County will develop, maintain, and implement written standard operating procedures (SOPs) for Pollution Prevention and Good Housekeeping to cover daily operations and maintenance activities at County-owned facilities that have a potential of discharging pollutants directly or with stormwater runoff into the MS4. The SOPs will be used in the County's training activities.

BMP 6-3: Employee Training

Roanoke County implements Pollution Prevention and Good Housekeeping training on a biannual basis for applicable County employees to support the requirements of the MS4 Permit.

BMP 6-4: Stormwater Pollution Prevention Plans for Municipal Facilities

Roanoke County will identify all high-priority facilities that have a high potential to discharge pollutants in stormwater. Stormwater Pollution Prevention Plans (SWPPPs) will be prepared, implemented, and maintained. SWPPPs will be used in training activities.

BMP 6-5 Nutrient Management Plans

Roanoke County will ensure that excessive nutrients are not being applied to County-owned lands by maintaining and implementing turf and landscape nutrient

management plans that have been developed by a certified turf and landscape nutrient management planner (in accordance with § 10.1-104.2 of the Code of Virginia) on all lands owned or operated by the County where nutrients are applied to a contiguous area greater than one acre.

BMP 6-6 Pesticide Applicator Certification

All employees and contractors hired by the County who apply pesticides and herbicides shall be trained and certified in accordance with the Virginia Pesticide Control Act (§ 3.2-3900 et seq. of the Code of Virginia).

This report provides a detailed description of each BMP named above, all standard operating procedures or policies necessary to implement each BMP, the measurable goal by which each BMP will be evaluated, and the persons, positions, or departments responsible for implementing each BMP.

BMP 6-1: Spill Prevention, Control, and Countermeasure (SPCC) Plans

The goal of this BMP is to develop, maintain, and implement Spill Prevention, Control, and Countermeasure (SPCC) Plans for appropriate County of Roanoke facilities, as required by Federal Oil Spills Prevention and Preparedness Regulations (40 CFR Part 112), to help the County prevent a discharge of oil into navigable waters or adjoining shorelines.

Responsible Party:

The Department of Development Services is responsible to develop and update SPCC plans. Applicable departments are responsible for compliance with SPCC plans.

Schedule and Evaluation:

Roanoke County updates its SPCC plans, as necessary, and creates new plans for County facilities, as needed. Training is provided for those employees who are involved with any County SPCC plan.

Standard Operating Procedures or Policies:

None.

Supporting Documents:

SPCC Plans for Existing County Facilities August 2021

- Public Safety Center
- Cave Spring Fire Station
- Clearbrook Fire Station
- Fleet Services Center
- Fort Lewis Fire Station
- Hollins Fire Station

Measurable Goals:

Success for this BMP will be measured by the updating of existing SPCC plans in accordance with Federal Oil Spills Prevention and Preparedness Regulations (40 CFR Part 1120), which require plans to be reviewed and updated every 5 years, or when a change has occurred. In addition, success will be measured by the creation of a new SPCC plan for applicable County facilities where it is determined that such plan is needed.

The Annual Report shall include the following information:

- Summary of evaluation of SPCC Plans.
- List of new facilities in need of SPCC Plans.
- List of completed SPCC Plans.

BMP 6-2: Standard Operating Procedures (SOPs) for Pollution Prevention and Good Housekeeping

Roanoke County will develop, maintain, and implement written standard operating procedures (SOPs) for Pollution Prevention and Good Housekeeping to help prevent pollutant discharge from daily operations and maintenance activities at County-owned facilities that have a potential of discharging pollutants directly or with stormwater runoff into the MS4. The SOPs will be used in the County's employee training program, and will be designed to meet the following objectives:

- 1) Prevent illicit discharges.
- 2) Ensure County staff or contractors properly dispose of waste materials, including landscape wastes and prevent waste materials from entering the MS4.
- 3) Prevent the discharge of wastewater or wash water not authorized in accordance with 9VAC25-890-20 D.3.u. into the MS4 without authorization under a separate VPDES permit.
 - a. The County shall assure that Contractors employed by the County and engaging in activities described in this BMP follow established good housekeeping procedures and use appropriate control measures to minimize the discharge of pollutants to the MS4. This may be accomplished through use of contract language, training, written procedures, or other measures within its legal authority
- 4) Minimize the pollutants in stormwater runoff.

Roanoke County's Pollution Prevention and Good Housekeeping SOPs covers the following activities:

- 1) Road, street, sidewalk, and parking lot maintenance and cleaning.
 - a. By November 1, 2025, the County shall update and implement its SOPs in accordance with Part I.E. of the MS4 Permit to include implementation of best management practices for anti-icing and deicing agent application, transport, and storage.
 - b. The SOPs shall prohibit the application of any anti-icing or deicing agent containing urea or other forms of nitrogen or phosphorus.
- 2) Renovation and significant exterior maintenance activities (e.g., painting, roof resealing, and HVAC coil cleaning) not covered under a separate VSMP construction general permit. Roanoke County will develop and implement procedures by November 1, 2026.
- 3) Discharging water pumped from construction and maintenance activities not covered by another permit covering such activities.

- 4) Temporary storage of landscaping materials.
- 5) Maintenance of County owned or operated vehicles and equipment to prevent them from leaking.
- 6) Application of materials, including pesticides and herbicides shall not exceed manufacturer's recommendations.
- 7) Application of fertilizer shall not exceed maximum application rates established by applicable nutrient management plans. For areas not covered under nutrient management plans where fertilizer is applied, application rates shall not exceed manufacturer's recommendations.

Responsible Party:

The Department of Development Services develops, evaluates, and amends the written SOPs and provides support to applicable departments, the latter of which are responsible to comply with the SOPs that are pertinent to their activities.

Schedule and Evaluation:

SOPs will be annually evaluated and revised, as needed.

Standard Operating Procedures or Policies:

- Standard Operating Procedures (SOPs) for Pollution Prevention and Good Housekeeping - July 2025
- Contractor Good Housekeeping and Pollution Prevention Procedures December 2025

Supporting Documents:

None.

Measurable Goals:

Success for this BMP will be measured by the updating of the written SOPs, as necessary, and by employee training on the appropriate SOPs.

The Annual Report shall include the following information:

- A summary of any written SOPs developed or modified during the permit year.

BMP 6-3: Employee Training

The goal of this BMP is to provide County employees with necessary Pollution Prevention and Good Housekeeping training to support the requirements of the MS4 Permit. The County's written training plan provides for the following training:

- 1) Applicable field personnel shall receive training in the prevention, recognition, and elimination of illicit discharges no less often than once per 24 months.
- 2) Employees performing road, street, sidewalk, and parking lot maintenance shall receive training in good housekeeping procedures (pursuant to Part I.E.6.b.(1) no less often than once per 24 months.
- 3) Employees working in and around facility maintenance, public works, or recreational facilities shall receive training in applicable Part I E 6 a and b good housekeeping procedures required no less often than once per 24 months.
- 4) Employees working in and around high-priority facilities with a stormwater pollution prevention plan (SWPPP) shall receive training in applicable site specific SWPPP procedures no less often than once per 24 months.
- 5) Employees whose duties include emergency spill control and response shall be trained in spill control and response. Emergency responders, such as firefighters and law-enforcement officers, trained on the handling of spill control and response as part of a larger emergency response training shall satisfy this training requirement and be documented in the training plan.
- 6) Employees and contractors hired by the permittee who apply pesticides and herbicides shall be trained and certified in accordance with the Virginia Pesticide Control Act (§ 3.2-3900 et seq. of the Code of Virginia). Certification by the Virginia Department of Agriculture and Consumer Services (VDACS) Pesticide and Herbicide Applicator program shall constitute compliance with this requirement. Contracts for the application of pesticide and herbicides executed after the effective date of the MS4 Permit, which is November 1, 2023, shall require contractor certification.

Responsible Party:

The Department of Development Services provides the appropriate departments with access to the training materials; each department is responsible to make certain that their employees take and comply with the pertinent training.

Schedule and Evaluation:

Employee training for Pollution Prevention and Good Housekeeping will be conducted on a biennial basis. The County will review the training program on a biennial basis and update it, as needed.

Standard Operating Procedures or Policies:

- Standard Operating Procedures (SOPs) for Pollution Prevention and Good Housekeeping - July 2025

Supporting Documents:

- Roanoke County MS4 Training Plan July 2019

Measurable Goals:

This BMP will be measured by training of the pertinent County employees in accordance with the schedule. In addition, Roanoke County will maintain documentation of each its training activities for a minimum of three years after the training activity. The documentation shall include the following information:

- 1) The date when applicable employees have completed the training activity.
- 2) The number of employees who have completed the training activity.
- 3) The training objectives and good housekeeping procedures covered by the training activity, pursuant to Part I.E.6.a. of the MS4 Permit.

NOTE: Roanoke County may fulfill the training requirements in Part I.E.6.d. of the MS4 Permit in total or in part, through regional training programs involving two or more MS4 permittees; however, the County remains responsible for ensuring compliance with the training requirements.

The Annual Report shall include the following information:

- A list of the training activities conducted (pursuant to Part I.E.6.d. of the MS4 Permit), including the following information:
 - The date of the training activity.
 - The number of employees who completed the training activity.
 - The objectives and good housekeeping procedures covered by the training activity.

BMP 6-4: Stormwater Pollution Prevention Plans for Municipal Facilities

The goal of this BMP is to identify high-priority facilities in Roanoke County that have a high potential of discharging pollutants and to prepare, maintain, and implement a site-specific stormwater pollution prevention plan (SWPPP) for each identified facility. As defined in 9VAC25-890-1:

"High-priority facilities" means facilities owned or operated by the permittee with drainage to any permitted MS4 that actively engage in one or more of the following activities: (i) composting; (ii) equipment storage, cleaning, and maintenance; (iii) long-term bulk materials storage; (iv) pesticide, herbicide, and fertilizer storage; (v) recycling; (vi) anti-icing and deicing agent storage, handling, and transfer; (vii) solid waste handling and transfer, and (viii) permittee owned or operated vehicle washing, maintenance, and salvage.

Roanoke County shall maintain and implement a site specific SWPPP for each high-priority facility as defined above that does not have or require separate VPDES permit coverage, and for which any of the following materials or activities occur and are expected to have exposure to stormwater resulting from rain, snow, snowmelt, or runoff:

- 1) Areas where residuals from using, storing, or cleaning machinery or equipment remain and are exposed to stormwater.
- 2) Materials or residuals on the ground or in stormwater inlets from spills or leaks.
- 3) Material handling equipment.
- 4) Materials or products that would be expected to be mobilized in stormwater runoff during loading or unloading or transporting activities (e.g., rock, salt, fill dirt).
- 5) Materials or products stored outdoors (except final products intended for outside use where exposure to stormwater does not result in the discharge of pollutants).
- 6) Materials or products that would be expected to be mobilized in stormwater runoff contained in open, deteriorated, or leaking storage drums, barrels, tanks, and similar containers.
- 7) Waste material except waste in covered, nonleaking containers (e.g., dumpsters).
- 8) Application or disposal of process wastewater (unless otherwise permitted).
- 9) Particulate matter or visible deposits of residuals from roof stacks, vents, or both not otherwise regulated (i.e., under an air quality control permit) and evident in the stormwater runoff.

Roanoke County's SWPPP Implementation Schedule is provided below in Figure 4. It lists the high-priority facilities that have a high potential to discharge pollutants and indicates when the various SWPPPs were prepared. Each SWPPP is kept at the high-priority facility for which it was written and contains the following information:

- 1) A site description that includes a site map identifying all outfalls, direction of stormwater flows, existing source controls, and receiving waterways.
- 2) A description and checklist of the potential pollutants and pollutant sources.
- 3) A description of all potential non-stormwater discharges.
- 4) A description of all structural control measures, such as stormwater management facilities and other pollutant source controls, applicable to SWPPP implementation (e.g., permeable pavement or oil-water separators that discharge to sanitary sewer are not applicable to the SWPPP), such as oil-water separators, and inlet protection designed to address potential pollutants and pollutant sources at risk of being discharged to the MS4.
- 5) A maintenance schedule for all stormwater management facilities and other pollutant source controls applicable to SWPPP implementation described in Part I.E.6.h(4) of the MS4 Permit.
- 6) Site specific written procedures designed to reduce and prevent pollutant discharge that incorporate by reference applicable good housekeeping procedures required under Part I.E.6a. and b of the MS4 Permit.
- 7) A description of the applicable employee training as required in Part I.E.6.d(4) of the MS4 Permit.
- 8) An inspection frequency of no less often than once per year and maintenance requirements for site specific source controls. The date of each inspection and associated findings and follow-up shall be logged in each SWPPP.
- 9) A log of each unauthorized discharge, release, or spill incident reported in accordance with Part IV.G of the MS4 Permit including the following information:
 - a. Date of incident.
 - b. Material discharged, released, or spilled.
 - c. Estimated quantity discharged, released, or spilled.
- 10) A log of modifications to the SWPPP made as the result of any unauthorized discharge, release, or spill in accordance Part I.E.6.j. of the MS4 Permit or changes in facility activities and operation requiring SWPPP modification.
- 11) The point of contact for SWPPP implementation.

HIGH-PRIORITY FACILITIES

A list of all high-priority facilities owned or operated by Roanoke County that are required to maintain a SWPPP (pursuant to Part I.E.6.g. of the MS4 Permit) is provided below in Figure 4; it includes the facility name and facility location. A hard copy of each SWPPP is maintained at the facility for which it was written, incorporated herein by reference, and provided in the appendix of this report under BMP 6-4.

Figure 4: SWPPP Implementation Schedule

| R O A N O K E C O U N T Y | | | | |
|---|---|---|--|---|
| Facility Name & Location | High-Priority Activities | High Potential of Discharging Pollutants? | Reasons for High Potential or Not | SWPPP Completion Date/or last Revision Date |
| Public Service Center 1216 Kessler Mill Road Salem, VA 24153 | “Public Works” yard - equipment, material, and fertilizer storage | Yes | Outdoor material & equipment storage | April 2020 |
| Fleet Service Center 5235 Hollins Road; Roanoke, VA 24019 | Vehicle repair and maintenance | “ | Light & heavy vehicle repair & maintenance | January 2023 |
| #1 North County Fire & Rescue¹ 150 Hershberger Road; Roanoke, VA 24012 | Equipment washing, fueling activities | “ | Outdoor fueling and washing | February 2021 |
| #3 Cave Spring Fire¹ 4212 Old Cave Spring Road; Roanoke, VA 24018 | “ | “ | “ | “ |
| #5 Hollins Fire and Rescue¹ 7401 Barrens Road; Roanoke, VA 24019 | “ | “ | “ | “ |
| #6 Mount Pleasant Fire & Rescue¹ 2909 Jae Valley Road; Roanoke, VA 24014 | “ | “ | “ | “ |
| #9 Fort Lewis Fire and Rescue¹ 3915 W. Main Street; Salem, VA 24153 | “ | “ | “ | “ |
| Regional Fire & EMS Training Center 1220 Kessler Mill Road; Salem, VA 24153 | Chemicals used in fire and EMS training | “ | Outdoor training exercises with chemicals | October 2021 |

¹One SWPPP for 5 Fire Stations

| ROANOKE COUNTY PUBLIC SCHOOLS | | | | |
|--|--|---|---|---|
| Facility Name & Location | High-Priority Activities | High Potential of Discharging Pollutants? | Reasons for High Potential or Not | SWPPP Completion Date/or last Revision Date |
| Municipal Yards¹ 1. Maintenance Dept. Shop, Office, Warehouse 702 South Market Street; Salem, VA 2. Small Engine & Welding Shop 622 South Market Street Salem, VA 24153 3. Transportation Dept. Bus Maintenance, Parking Lot 701 South Market Street Salem, VA 24153 | Vehicle parking, fueling, storing, washing, maintenance | Yes (at Yard #3) | Vehicle washing, maintenance, storage, parking, and fueling activities | September 2025 |
| Maintenance/Storage Facility Burton Center for Arts and Technology 1760 Roanoke Boulevard Salem, VA 24153 | Vehicle storing, salvage | No | Parking lot; inoperable vehicle storage | March 2016 (Currently under revision) |
| School Bus Lots² 1. Cave Spring Middle School 4880 Brambleton Avenue Roanoke, VA 24018 2. Glenvar High and Middle School 4549/4555 Malus Drive Salem, VA 24153 3. Hidden Valley High School 5000 Titan Trail Drive Roanoke, VA 24018 4. Hidden Valley Middle School 4902 Hidden Valley School Road Roanoke, VA 24018 (in Roanoke City) 5. Northside High School 6758 Northside High School Road Roanoke, VA 24019 6. Vinton (behind former William Byrd High School) 325 Gus Nicks Boulevard Vinton, VA 24179 | Vehicle storing, fueling, and soil stockpiling (the latter of which is only at Glenvar High and Middle School) | Yes | Outdoor fueling (for most lots) and vehicle (bus) parking; long-term outdoor soil stockpiling | July 2025 |

¹One SWPPP covers all RCPS municipal yards

²One SWPPP covers all RCPS bus lots

The Stormwater Program Manager, Department of Development Services, develops and retains the original SWPPP. Each facility keeps a copy of and maintains the pertinent SWPPP.

Responsible Party:

The Department of Development Services evaluates the high-priority facilities and prepares and updates the necessary SWPPPs. The applicable departments implement the SWPPPs for the facilities for which they manage, conduct the requisite training and facility inspections, and handle incident reporting in the event of an unauthorized discharge, release, or spill.

Schedule and Evaluation:

Roanoke County has identified its municipal high-priority facilities and determined which of them have a high potential to discharge pollutants in stormwater. All necessary SWPPPs have been completed, and they will be maintained for as long as each facility has a high potential to discharge pollutants.

- No later than June 30 of each year, Roanoke County will annually review any high-priority facility it owns or operates for which a SWPPP has not been developed to determine if the facility meets any of the conditions described in Part I E 6 g of the MS4 Permit. If the facility is determined to need a SWPPP, Roanoke County will develop a SWPPP meeting the requirements of Part I.E.6.h. of the MS4 Permit no later than December 31 of that same year. Roanoke County will maintain a list of all high-priority facilities owned or operated by the permittee not required to maintain a SWPPP in accordance with Part I.E.6.g.
- Roanoke County will review the contents of any site specific SWPPP no later than 30 days after any unauthorized discharge, release, or spill reported in accordance with Part IV.G. of the MS4 Permit to determine if additional measures are necessary to prevent future unauthorized discharges, releases, or spills. If necessary, the County will update the SWPPP no later than 90 days after the unauthorized discharge.
- Roanoke County shall keep the SWPPP at the high-priority facility and utilize it as part of employee SWPPP training required in Part I.E.6.d(4) of the MS4 Permit. The SWPPP and associated documents may be maintained as a hard copy or electronically as long as the documents are available to employees at the applicable site.
- If activities change at a facility such that it no longer meets the definition of a high-priority facility, Roanoke County may remove the facility from the list of high-priority facilities with a high potential to discharge pollutants.
- If activities change at a facility such that it no longer meets the criteria requiring SWPPP coverage as described in Part I.E.6.g. of the MS4 Permit, Roanoke County may remove the facility from the list of high-priority facilities that require SWPPP coverage.

Standard Operating Procedures or Policies:

- Standard Operating Procedures (SOPs) for Pollution Prevention and Good Housekeeping - July 2025
- Contractor Good Housekeeping and Pollution Prevention Procedures December 2025

Supporting Documents:

- Completed SWPPPs (See Figure 4, above)
- Roanoke County MS4 Training Plan July 2019

Measurable Goals:

Success for this BMP will be measured by the County's implementation/maintenance of the required SWPPPs, storage of the SWPPPs at the high-priority facility for which they were written, and use of the SWPPPs as part of the staff training conducted at each facility.

In addition, Roanoke County will review the contents of any site-specific SWPPP no later than 30 days after any unauthorized discharge, release, or spill reported in accordance with Part III.G. of the MS4 Permit to determine if additional measures are necessary to prevent future unauthorized discharges, releases, or spills. If necessary, the County will update the SWPPP no later than 90 days after the unauthorized discharge.

The Annual Report shall include the following information:

- A confirmation statement that the County reviewed all high-priority facilities to determine if SWPPP coverage is needed during the reporting period.
 - Within 12 months of permit coverage (i.e., by November 1, 2024), the County will identify any new high-priority facilities located in expanded 2020 census urban areas with a population of at least 50,000.
 - Within 36 months of permit coverage (i.e., by November 1, 2026), the County will implement SWPPPs for high-priority facilities meeting the conditions of Part I.E.6.i. and which are located in expanded 2020 census urban areas with a population of at least 50,000.
- A list of any new SWPPPs developed (pursuant to Part I.E.6.i. of the MS4 Permit) during the permit year.
- A summary of any SWPPPs modified (pursuant to Part I.E.6.j., 6.l., or 6.m. of the MS4 Permit).
- The rationale of any high-priority facilities delisted (pursuant to Part I.E.6.l. or m. of the MS4 Permit) during the permit year.

BMP 6-5: Nutrient Management Plans

The goal of this BMP is to ensure that excessive nutrients are not being applied to County-owned lands. To achieve this, Roanoke County will maintain and implement turf and landscape nutrient management plans that have been developed by a certified turf and landscape nutrient management planner (in accordance with § 10.1-104.2 of the Code of Virginia) on all lands owned or operated by the County where nutrients are applied to a contiguous area greater than one acre. If nutrients are being applied to achieve final stabilization of a land disturbance project, application amounts will follow the manufacturer's recommendations.

Responsible Party:

The Department of Development Services will track progress. The Department of Parks, Recreation, and Tourism (PRT) is responsible for the preparation, implementation, and maintenance of Nutrient Management Plans on County-owned lands. Roanoke County Public Schools (RCPS) is responsible for the preparation, implementation, and maintenance of Nutrient Management Plans on RCPS-owned lands.

Schedule and Evaluation:

Nutrient Management Plans (NMPs) are in place for all County-owned lands where nutrients are applied to a contiguous area of 1 acre or more located in the expanded 2020 census urban areas with population of at least 50,000 and within the County's MS4 service area. The County will continue to implement these plans and update them, as needed.

- A list of locations for which turf and landscape nutrient management plans are required pursuant to Part I.E.6.n. and s. of the MS4 Permit, may be viewed in each of the Nutrient Management Plans provided in the appendix of this document. The NMPs include the following information:
 - a. The total acreage covered by each nutrient management plan.
 - b. The DCR approval date and expiration date for each nutrient management plan.
- The location of the nutrient management plan hardcopy or electronic document being maintained is as follows:
 - For Roanoke County Public Schools: the Nutrient Management Plan hardcopy is maintained in the office of the Associate Director of Facilities & Operations at Central Administration.
 - For Roanoke County Parks, Recreation, and Tourism (PRT): the Nutrient Management Plan hard copies and electronic copies are kept at Kessler Mill at the PRT Administrative office.
 - Electronic copies of all NMPs can also be found in the appendix of this Program Plan in the folder titled BMP 6-5.

- Where nutrients are being applied to achieve final stabilization of a land disturbance project, the County will require that application follow the manufacturer's recommendations. For newly established turf where nutrients are applied to a contiguous area greater than one acre, the County will implement a nutrient management plan no later than six months after the site achieves final stabilization.
- Nutrient management plans developed in accordance with Part I.E.6.n. of the MS4 Permit will be submitted to the Department of Conservation and Recreation (DCR) for approval.
- Nutrient management plans that are expired as of the effective date of the MS4 Permit, which is November 1, 2023, shall be submitted to DCR for renewal within six months after the effective date of the permit. Thereafter, all nutrient management plans shall be submitted to DCR at least 30 days prior to nutrient management plan expiration. Within 36 months of permit coverage, no nutrient management plans maintained by Roanoke County in accordance with Part I.E.6.n. of the MS4 Permit shall be expired due to DCR documented noncompliance with 4VAC50-85-130 provided to Roanoke County.
- Roanoke County may maintain nutrient management plans as a hard copy or electronically provided that the documents are available to employees at the applicable site.

Standard Operating Procedures or Policies:

None.

Supporting Documents:

- Nutrient Management Plans (NMP) for County-owned and RCPS-owned lands.
 - RoCo Parks, Recreation and Tourism NMP Approved 8-1-25
 - RCPS NMP Approved June 26, 2025
- Roanoke County (RoCo) Parks, Recreation and Tourism NMP Summary Table Oct 2025
- Roanoke County Public Schools (RCPS) NMP Summary Table Oct 2025

Measurable Goals:

Success for this BMP will be measured by the implementation of the Nutrient Management Plans for the applicable lands.

The Annual Report shall include the following information:

- The status of each nutrient management plan as of June 30 of the reporting year (e.g., approved, submitted and pending approval, and expired).

BMP 6-6: Pesticide Applicator Certification

The goal of this BMP is to ensure that all employees and contractors hired by the County who apply pesticides and herbicides are trained and certified in accordance with the Virginia Pesticide Control Act (§ 3.2-3900 et seq. of the Code of Virginia). Certification by the Virginia Department of Agriculture and Consumer Services (VDACS) Pesticide and Herbicide Applicator program shall constitute compliance with this requirement. Contracts for the application of pesticide and herbicides executed after the effective date of the MS4 Permit, which is November 1, 2023, shall require contractor certification.

Responsible Party:

The Department of Development Services shall track compliance. The Departments of Parks, Recreation and Tourism and General Services are responsible to ensure that their employees or contractors who apply pesticides on County-owned lands have current pesticide/herbicide applicator certifications.

Schedule and Evaluation:

Roanoke County annually reviews the pesticide/herbicide applicator certifications held by its employees and hired contractors.

Standard Operating Procedures or Policies:

None.

Supporting Documents:

None.

Measurable Goals:

Success for this BMP will be measured by maintenance of current certification by the applicable employees and any hired contractors.

The Annual Report shall include the following information:

- Summary report of the names of applicable employees and any hired contractors and the expiration dates of their certification.

Part III. Total Maximum Daily Load (TMDL) Action Plans

Roanoke County was previously covered under the General VPDES Permit for Discharges of Stormwater from Small MS4s effective November 1, 2018, and has developed and will implement and maintain local TMDL Action Plans designed to reduce loadings for its pollutants of concern (sediment, bacteria, and PCBs), because the County discharges these pollutants of concern to impaired waters for which a TMDL has been approved by the U.S. Environmental Protection Agency (EPA), as described in Part II.B.2.a. and 2.b. of the current MS4 Permit, having an effective date of November 1, 2023.

Because these TMDLs were approved by the EPA prior to July 1, 2018 and an individual or aggregate wasteload has been allocated to the County, Roanoke County has developed and will update as applicable its local TMDL Action Plans to meet the conditions of Part II.B.4., B.6., B.7., and B.8. of the current MS4 Permit, as applicable, no later than 18 months after the permit effective date (i.e., by May 2025) and continue implementation of these Action Plans. The updated Action Plans will include:

- 1) An evaluation of the results achieved by the previous Action Plans; and
- 2) Any adaptive management strategies incorporated into updated Action Plans based on evaluation of these plans.

Note that the County's TMDL Action Plans may be implemented in multiple phases over more than one permit cycle using the adaptive iterative approach provided adequate progress is achieved in the implementation of BMPs designed to reduce pollutant discharges in a manner that is consistent with the assumptions and requirements of the applicable TMDL.

EPA-approved TMDLs that affect Roanoke County include the following:

Sediment - Upper Roanoke River Watershed

- EPA Approved: 05/10/2006
- SWCB Approved: 09/07/2006

PCBs - Roanoke (Staunton) River Watershed

- EPA Approved: 04/09/2010
- SWCB Approved: 12/09/2010

Bacteria (E. Coli) - Tinker Creek

- EPA Approved: 08/05/2004
- SWCB Approved: 12/02/2004

Bacteria (E. Coli) - Upper Roanoke River Watershed

- EPA Approved: 08/02/2006
- SWCB Approved: 06/27/2007

Associated with these TMDLs, Roanoke County has 13 TMDL wasteload allocations, as described in Part IV of this Plan.

Roanoke County's completed TMDL Action Plans, as listed below, are incorporated into this Program Plan, as listed in the Supporting Documents section provided in the appendix.

TMDL Action Plan for Bacteria (*E. Coli*) Reduction

The Total Maximum Daily Load Action Plan for E. Coli Reduction in the Roanoke River, Ore Branch, Tinker Creek, Glade Creek, Carvin Creek, and Lick Run was completed in July 2015 and submitted to DEQ with the corresponding MS4 Annual Report. Last revised in March 2025.

TMDL Action Plan for Benthic (Sediment) Reduction

The Total Maximum Daily Load Action Plan for Sediment Reduction in the Roanoke River was completed in July 2015 and submitted to DEQ with the corresponding MS4 Annual Report. Last revised in March 2025.

TMDL Action Plan for Polychlorinated Biphenyls (PCBs) Reduction

The Total Maximum Daily Load Action Plan for PCBs in the Roanoke River, Mason Creek, Peters Creek, Tinker Creek, Wolf Creek, and an Unnamed Tributary to the Roanoke River was completed in June 2016 and submitted to DEQ with the corresponding MS4 Annual Report. Last revised in October 2025.

As stated above, the County will revise these TMDL Action Plans, as necessary, to meet the conditions of Part II.B.4., B.6., B.7., and B.8. of the current MS4 Permit, as applicable, no later than 18 months after the permit effective date and will continue their implementation.

Each MS4 Annual Report in the permit term will include a summary of actions conducted by the County to implement each of its local TMDL Action Plans.

Part IV. Supporting Information

A. Watershed Summary

Roanoke County is home to over 90,000 residents and occupies almost 250 square miles of land in the southwestern portion of Virginia along the western slopes of the Blue Ridge Mountains. The County contains the headwaters of many streams that flow to the Roanoke River. The Roanoke River flows in an easterly direction through the central part of Roanoke County, the neighboring City of Salem, City of Roanoke, and the Town of Vinton. Roanoke County's geography can be characterized as a mountainous region, complete with hilly terrain mixed with large valleys. Elevations range from over 3600 ft. to 900 ft. above sea level.

This section details a list of all known waters, currently located within the urbanized portion of the County, that receive discharges or that have the potential to receive discharges from the MS4 area. Table IV-1 lists the names of the waterways, the Hydrologic Unit Codes (HUCs), as identified in the most recent version of the Virginia's 6th Order National Watershed Boundary Dataset, the estimated drainage area that is served by the regulated small MS4 discharging to these surface waters (in acres), and the downstream impaired receiving waters into which the waterway directly discharges.



Following the table is a description of the approximate land use for each drainage area in Roanoke County that was studied in the 1997 Roanoke Valley Regional Stormwater Management Plan. In addition to the land use descriptions, there is a summary of all local Total Maximum Daily Load (TMDL) studies that have been completed and the appropriate wasteload allocations for Roanoke County.

Table IV-1
Roanoke County Watersheds, HUCs, Impaired Receiving Waters, and Drainage Areas

| Watershed | HUC | Impaired Receiving Waters | MS4 Urbanized Watershed Drainage Area (Acres) |
|-------------------------------------|-----------------|----------------------------------|--|
| Back Creek | RU15 | Back Creek | 3,750 |
| Barnhardt Creek | RU14 | Roanoke River | 830 |
| Big Bear Rock Branch | RU09 | Roanoke River | 1,039 |
| Bowman Hollow | RU09 | Roanoke River | 162 |
| Butt Hollow Creek | RU09 | Roanoke River | 499 |
| Callahan Branch | RU09 | Roanoke River | 763 |
| Carvin Creek | RU12 | Carvin Creek | 1,672 |
| Cole Hollow Branch | RU09 | Roanoke River | 168 |
| Cook Creek | RU13 | Glade Creek | 679 |
| Cove Hollow | RU09 | Roanoke River | 4 |
| Deer Branch | RU12 | Carvin Creek | 2,191 |
| Dixie Caverns | RU09 | Roanoke River | 44 |
| Dry Branch | RU09 | Roanoke River | 489 |
| Dry Hollow | RU09 | Roanoke River | 221 |
| Garnand Branch | RU14 | Roanoke River | 343 |
| Gish Branch | RU10 | Mason Creek | 282 |
| Glade Creek | RU13 | Glade Creek | 1,688 |
| High School Branch | RU09 | Roanoke River | 46 |
| Lick Run | RU13 | Lick Run | 328 |
| Mason Creek | RU10 | Mason Creek | 357 |
| Mill Branch | RU09 | Roanoke River | 80 |
| Mill Creek | RU09 | Roanoke River | 461 |
| Mudlick Creek | RU14 | Mudlick Creek | 3,995 |
| Murray Run | RU14 | Murray Run | 798 |
| Ore Branch | RU14 | Ore Branch | 883 |
| Paint Bank Branch | RU09 | Roanoke River | 169 |
| Peters Creek | RU14 | Peters Creek | 1,625 |
| Roanoke River & Unnamed Tributaries | RU05, 09, 14&16 | Roanoke River | 2,101 |
| Snyders Branch | RU09 | Roanoke River | 201 |
| Stypes Branch | RU09 | Roanoke River | 267 |
| Tinker Creek | RU11 | Tinker Creek | 2,687 |
| Twelve O'clock Branch | RU09 | Roanoke River | 557 |
| West Dry Branch | RU09 | Roanoke River | 69 |
| West Tinker Creek | RU13 | Lick Run | 141 |
| Wolf Creek | RU14 | Roanoke River | 1,471 |

B. Land Use Descriptions for Each Watershed Discharging to Impaired Receiving Waters

Back Creek:

The Back Creek watershed contains fourteen existing specific land uses, but three are more prevalent: woods, agricultural, and residential. Approximately 75% of the watershed is wooded; agricultural and residential areas comprise about 10% of the watershed. The remaining 5% of the watershed consists of pasture, brush, and open space. Back Creek has been listed as an Impaired Water (Category 4A) for E-coli.

Barnhardt Creek:

The Barnhardt Creek watershed is a 4.2 square mile drainage basin located in south central Roanoke County, southern Salem, and southwestern Roanoke City. The Barnhardt Creek watershed originates on Poor Mountain, at an elevation approximately 2700 feet above sea level, and flows in a northeasterly direction to its confluence with the Roanoke River at the boundary of the City of Salem and City of Roanoke.

The Barnhardt Creek watershed contains fifteen existing land uses, but four are more prevalent: woods, 1/2-acre residential lots, 1/4-acre residential lots, and open space. Approximately 50% of the watershed is comprised of wooded areas, especially in the upstream reaches of Barnhardt Creek. The 1/2- acre residential lots comprise close to 20% of the watershed. Open space and 1/4-acre residential lots each comprise about 10% of the watershed area. The remaining 10% of the watershed consists of agricultural, commercial, and residential areas of various densities. Barnhardt Creek discharges to the impaired receiving waters of the Roanoke River after it passes out of Roanoke County into the cities of Roanoke and Salem.

Barnhardt Creek has been listed as an Impaired Water (Category 5C) for pH and (Category 4A) for E-coli.

Big Bear Rock Branch:

The Big Bear Rock Branch watershed is a 2.1 square mile drainage basin located in west central Roanoke County. The Big Bear Rock Branch originates on Ft. Lewis Mountain, at an elevation approximately 3250 feet above sea level, and flows in a southeasterly direction to its confluence with the Roanoke River.

The Big Bear Rock Branch has four major land uses: woods, 1/3-, 1/2- and 2-acre residential, commercial, and industrial uses. Approximately 45% of the watershed is wooded areas, 30% is residential lots of various sizes, 20% is industrial businesses, and 5% is commercial. Big Bear Rock Branch directly discharges to the impaired receiving waters of the Roanoke River.

Bowman Hollow:

The Bowman Hollow watershed is a 2.3 square mile drainage basin located in south central Roanoke County and southern Salem. The Bowman Hollow watershed originates on Poor Mountain near Twelve O'clock Knob, at an approximate elevation of 2600 feet, and flows in a northeasterly direction until its confluence with the Roanoke River.

The Bowman Hollow watershed contains thirteen existing land uses, but four are more prevalent: woods, 1/2-acre residential lots, 1/4-acre residential lots, and open space. Approximately 50% of the watershed is comprised of wooded areas, especially in the upstream reaches of Bowman Hollow. The 1/2- acre residential lots comprise close to 20% of the watershed. Open space and 1/4-acre residential lots each comprise about 10% of the watershed area. The remaining 10% of the watershed consists of agricultural, commercial, and residential areas of various densities. After it passes out of Roanoke County and into the City of Salem, Bowman Hollow discharges to the impaired receiving waters of the Roanoke River.

Butt Hollow Creek:

The Butt Hollow Creek watershed is a 2.7 square mile drainage basin located in north central Roanoke County and western Salem. The Butt Hollow Creek watershed originates on Fort Lewis Mountain, at an elevation of 3260 feet above sea level, and flows southeasterly to its confluence with the Roanoke River.

The Butt Hollow Creek watershed contains ten existing land uses. Woods comprise approximately 80% of the watershed area. Residential areas of various densities comprise about 15% of the watershed. The remaining 5% of the watershed area contains agricultural, open space, and commercial uses. Butt Hollow Creek directly discharges to the impaired receiving waters of the Roanoke River.

Callahan Branch

The Callahan Branch watershed is a 3.4 square mile drainage basin located in west central Roanoke County and western Salem. The Callahan Branch watershed originates on Fort Lewis Mountain, at an elevation of 3000 feet above sea level, and flows southeasterly to its confluence with the Roanoke River.

The Callahan Branch watershed contains six predominate land uses 33% is mixed residential, 25% commercial, 25% wooded, 10% industrial, and the remaining 10% of the watershed area is impervious area and open space. Callahan Branch directly discharges to the impaired receiving waters of the Roanoke River.

Carvin Creek:

The Carvin Creek watershed is a 28 square mile drainage basin located in northeast Roanoke County, northern Roanoke City, and the northern part of the watershed is located in Botetourt County. The watershed originates on Tinker Mountain, at an approximate elevation of 3200 feet above sea level, and flows northeast to the Carvin Cove Reservoir,

which is a public supply for drinking water. The creek then flows southeast to its confluence with Tinker Creek.

Two streams drain the Carvin Creek watershed, West Fork Carvin Creek and Deer Branch. The West Fork Carvin Creek sub-watershed is primarily undeveloped but has some development consisting of residential ¼-acre lots and commercial uses. The Deer Branch sub-watershed has residential development (mostly 1/4-acre lots) and some commercial and wooded areas.

The Carvin Creek watershed contains fifteen land uses, but only five major land uses: woods, agriculture and pasture, open water, 1/4-acre residential lots, and commercial. Approximately 75% of the watershed is wooded, 10% is residential, 5% of the watershed is pasture, 5% is open water, and 5% is commercial. Carvin Creek has a wasteload allocation for E-coli from a TMDL report that was completed in 2004.

Cole Hollow Branch:

The Cole Hollow Branch watershed is a 5.9 square mile drainage basin located in north central Roanoke County, with the southern portion of the watershed located in the City of Salem. Cole Hollow Branch originates on Ft. Lewis Mountain, at an approximate elevation of 3020 feet above sea level and flows south to its confluence with the Roanoke River. There is only one significant stream that drains the Cole Hollow Branch watershed: Paint Bank Branch. This stream also originates on Ft. Lewis Mountain and its sub-watershed is primarily undeveloped.

The Cole Hollow Branch watershed contains several specific land uses, but five major uses: woods, open areas, residential areas, agriculture, and commercial development. Approximately 70% of the watershed is woods and open areas, 20% of the watershed is residential development, 5% is agriculture, and 5% is commercial. Cole Hollow Branch discharges to the impaired receiving waters of the Roanoke River after it passes out of Roanoke County into the City of Salem.

Cove Hollow:

The Cove Hollow watershed is a 3.3 square mile drainage basin located in the western part of Roanoke County. Cove Hollow originates on Poor Mountain, at an approximate elevation of 3100 feet above sea level and flows north to its confluence with the Roanoke River.

Dry Branch:

The Dry Branch watershed is a 4.5 square mile drainage basin located primarily in north central Roanoke County and the southern portion of the watershed is in northern Salem City. Dry Branch originates on Ft. Lewis Mountain, at an approximate elevation of 2900 feet, and flows southeasterly to its confluence with the Roanoke River.

The Dry Branch watershed contains eight land uses, but only 2 major uses: woods and 1/4-acre residential lots. Approximately 75% of the watershed is comprised of wooded areas. The 1/4-acre residential lots comprise approximately 10% of the watershed. The remaining

15% of the watershed consists of open space, commercial, agricultural and residential areas of various densities. Dry Branch directly discharges to the impaired receiving waters of the Roanoke River.

Dry Hollow:

The Dry Hollow watershed is a 3.96 square mile drainage basin located in the western part of Roanoke County. Dry Hollow originates on Poor Mountain, at an approximate elevation of 3200 feet above sea level and flows north to its confluence with the Roanoke River.

Garnand Branch:

The Garnand Branch watershed is a 3.2 square mile drainage basin located in the Garden City area of Roanoke City and the Mount Pleasant area of Roanoke County. Garnand Branch originates in Garden City and flows north to its confluence with the Roanoke River at the base of Mill Mountain in the City of Roanoke.

Gish Branch:

The Gish Branch watershed is a 2 square mile drainage basin located in north central Roanoke County and the City of Salem. The watershed originates on Ft. Lewis Mountain, at an elevation of 3080 feet, and flows in a southeasterly direction until its confluence with Mason Creek.

The Gish Branch watershed contains eight existing land uses, but 2 predominate: woods and commercial areas. Approximately 60% of the Gish Branch watershed is comprised of wooded areas, especially in the upstream sub-basins of Gish Branch. Commercial development comprises 20% of the watershed. The remaining 20% consists of agricultural, open space, paved areas, and residential areas of various densities. Gish Branch discharges to the impaired receiving waters of Mason Creek after it passes out of Roanoke County into the City of Salem.

Glade Creek:

The Glade Creek watershed is a 33 square mile drainage basin located in northeast Roanoke County, northeast Roanoke City, and northwest Vinton; it also stretches into Botetourt County. Glade Creek originates in the Blue Ridge Mountains near Curry Gap and flows southwesterly until its confluence with Tinker Creek. Cook Creek is a tributary on the northwestern reach of Glade Creek.

The Glade Creek watershed contains fifteen land uses, but the four major ones are: woods, agriculture, ½-acre and ¼-acre residential lots, and commercial development. Approximately 50% of the watershed consists of wooded areas, 20% is agriculture, 15% is residential, and 5% is commercial. The remaining 10% of the watershed consists of pasture, brush, industrial development, and open space. Glade Creek has a wasteload allocation for E-coli from a TMDL report that was completed in 2004.

High School Branch:

The High School Branch watershed is a 1.8 square mile drainage basin located in the western part of Roanoke County and the City of Salem. High School Branch originates on Little Brushy Mountain, at an approximate elevation of 1400 feet above sea level, in Roanoke County and flows south to its confluence with the Roanoke River in the City of Salem.

Lick Run:

The Lick Run watershed is a 7.8 mile drainage basin located in north central Roanoke County and Roanoke City. The Lick Run watershed originates at the intersection of Interstate 81 and U.S. Route 11. Lick Run flows southeasterly until its confluence with Tinker Creek.

The Lick Run watershed contains thirteen land uses, but the six major land use types are: 1/4- acre residential lots, open space, industrial development, agriculture, commercial, and paved areas. Approximately 25% of the watershed is comprised of 1/4- acre lots. Open space comprises 20% of the watershed. Industrial and agriculture each comprise about 15% of the watershed. Commercial and paved areas each comprise about 10% of the watershed. The remaining 5% of the watershed includes residential areas of various densities, railroad yards, and wooded areas. Lick Run has a wasteload allocation for E-coli from a TMDL report that was completed in 2004.

Mason Creek:

The Mason Creek watershed is a 29.6 square mile drainage basin located in north central Roanoke County, eastern Salem, and western Roanoke City. The Mason Creek watershed originates on Ft. Lewis Mountain, at an elevation of 3260 feet, and flows in a northeasterly direction to Masons Cove, where it turns and flows southeasterly to its confluence with the Roanoke River. Mason Creek has two significant streams that drain the watershed, Gish Branch and Jumping Run.

Mason Creek watershed consists of 14 different land uses. The most predominant one is wooded area, which comprises 80% of the watershed. Approximately 10% of the land use is residential development of various densities, and the remaining 10% is open space, commercial or agriculture areas. Mason Creek has been listed as an Impaired Water (Category 5A) for Benthic, and (Category 4A) for E-coli; and has a wasteload allocation for PCBs from a TMDL report completed in 2010.

Mill Branch:

The Mill Branch watershed is a 1.1 square mile drainage basin located in the western part of Roanoke County. Mill Branch originates near the foot of Poor Mountain, at an approximate elevation of 1700 feet above sea level, and flows north to its confluence with the Roanoke River.

Mill Creek:

The Mill Creek watershed is a 1 square mile drainage basin located in the western part of Roanoke County. Mill Creek originates near the bottom of Twelve o'clock Knob, at an approximate elevation of 1600 feet above sea level, and flows north to its confluence with the Roanoke River.

Mudlick Creek:

Mudlick Creek is a 9.6 square mile drainage basin located in east central Roanoke County and southeast Roanoke City. The basin originates on Long Ridge near Poor Mountain, at an elevation of approximately 2300 feet, and flows in a southeasterly direction until its confluence with the Roanoke River. There are two significant streams that drain the Mudlick Creek watershed: West Mudlick Creek and Murdock Creek.

The Mudlick Creek watershed contains 13 distinct land uses, but only four major uses: woods, agriculture, 1/3- and 1/4- acre residential and commercial lots. The woodland areas cover 25% of the watershed. The 1/4- acre residential areas consist of 50% of the entire watershed and 5% of the watershed is used for agricultural, 5% for commercial, and 5% for 1/3- acre residential lots. The remaining 10% of the watershed consists of pasture, brush, open space, paved areas, and 1/8-, 1/2-, 1-, and 2-acre residential lots. Mudlick Creek has been listed as an Impaired Water (Category 5A) for Benthic, and (Category 4A) for E-coli.

Murray Run:

The Murray Run watershed is a 2.9 square mile drainage basin mostly located in south central Roanoke County and southeast Roanoke City. The watershed originates south of Roanoke City and north of Starkey, at an elevation approximately 1400 feet, and flows in a northeasterly direction until its confluence with the Roanoke River.

The Murray Run watershed consists of 10 specific land uses, with 6 major uses: 1/4-, 1/3- and 1/8-acre residential lots, woods, open space, and commercial development. Approximately 40% of the watershed is comprised of 1/4-acre residential lots. The rest of the watershed consists of the following: 10% for 1/3-acre lots, 10% for 1/8-acre residential lots, 10% for wooded areas, 10% for open space and 10% for commercial development. The remaining 10% of the watershed consists of industrial development, paved areas, 1/2-acre residential lots, and brush.

Murray Run has been listed as an Impaired Water (Category 5A) for Benthic, and (Category 4A) for E-coli.

Ore Branch:

The Ore Branch watershed is a 4.1 square mile drainage basin mostly located in south central Roanoke County and south-central Roanoke City. The watershed originates south of Roanoke City near Chestnut, at an elevation of 1700 feet, and flows northeasterly until its confluence with the Roanoke River.

The Ore Branch watershed contains fourteen different land uses, but four are predominant: woods, commercial development, 1/4-acre, and 1/2-acre residential lots. Approximately 30% of the watershed is comprised of wooded areas. Commercial areas comprise approximately 20% of the watershed. Together, 1/4- and 1/2-acre residential lots comprise approximately 30% of the watershed. One eighth- acre residential lots comprise 5%, 1/3-acre residential lots comprise 5%, and paved areas comprise 5% of the watershed. The remaining 5% of the watershed consists of open space and 1 acre lots. Ore Branch has a wasteload allocation for E-coli from a TMDL report that was completed in 2006.

Peters Creek:

The Peters Creek watershed is a 9 square mile drainage basin located in central Roanoke County, northwest Roanoke City and northeast Salem. The watershed originates on Brushy Mountain, at an elevation of approximately 2380 feet, and flows in a southeasterly direction to its confluence with the Roanoke River. Three significant streams in Roanoke County drain the Peters Creek watershed: Peters Creek Tributaries A, B, and C.

The Peters Creek watershed contains fourteen different land uses, only two of which predominate: 1/4- acre lots and woods. Approximately 40% of the Peters Creek watershed consists of 1/4-acre residential lots. Wooded areas comprise approximately 35% of the watershed. Agricultural, commercial, open space, and paved areas each comprise 5% of the watershed. The remaining 5% of the watershed is a combination of brush, industrial areas, and 1- and 2-acre residential lots. Peters Creek has been listed as an Impaired Water (Category 4A) for E-coli and has a wasteload allocation for PCBs from a TMDL Report that was completed in 2010.

Snyders Branch:

The Snyders Branch watershed is a 2.9 square mile drainage basin located in the western part of Roanoke County. Snyders Branch originates north of Interstate 81, at an approximate elevation of 1600 feet above sea level, and flows south through the City of Salem to its confluence with the Roanoke River.

Stypes Branch:

The Stypes Branch watershed is a 3.5 square mile drainage basin located in the Glenvar area of Roanoke County. Stypes Branch originates on Fort Lewis Mountain, at an approximate elevation of 2700 feet above sea level, and flows south to its confluence with the Roanoke River.

Tinker Creek:

The Tinker Creek watershed is a 112 square mile watershed located in northeast Roanoke County, northeast Roanoke City, northwest Vinton, and southeast Botetourt County. The Tinker Creek watershed originates on Tinker Mountain near Mt. Union, at an elevation of approximately 2400 feet, and flows in a southerly direction until its confluence with the Roanoke River. There are four significant streams that drain the Tinker Creek watershed: Carvin Creek, Glade Creek, West Tinker Creek, and Lick Run.

The Tinker Creek watershed consists of sixteen existing land uses but only 3 predominate: woods, agriculture, and 1/4- acre residential lots. Approximately 50% of the watershed is wooded. Agricultural land use comprises approximately 25% of the watershed. Approximately 10% of the watershed is comprised of 1/4-acre residential lots. The remaining 15% of the watershed consists of mainly open space, commercial areas, 1/2- acre residential lots, and industrial areas. Tinker Creek has been listed as an impaired water (Category 5A) for Benthic, (Category 5C) for temperature; and has a TMDL wasteload allocation for E-coli from a TMDL report completed in 2004, and a wasteload allocation for PCBs from a TMDL report completed in 2010.

Twelve O'clock Branch:

The Twelve O'clock Branch watershed is a 1.7 square mile drainage basin located along the western City of Salem/Roanoke County boundary. Twelve O'clock Branch originates near Twelve O'clock Knob, at an approximate elevation of 2200 feet above sea level, and flows north through the City of Salem to its confluence with the Roanoke River.

West Dry Branch:

The West Dry Branch watershed is a 5 square mile drainage basin located in the western part of Roanoke County. West Dry Branch originates on Poor Mountain, at an approximate elevation of 2600 feet above sea level, and flows north to its confluence with the Roanoke River.

Wolf Creek:

The Wolf Creek watershed is a 4.9 square mile drainage basin located in eastern Roanoke County and east Vinton. The Wolf Creek basin originates in the Blue Ridge Mountains at Stewart Knob, at an approximate elevation of 2435 feet, and flows in a southwesterly direction until its confluence with the Roanoke River.

The Wolf Creek watershed contains eleven land uses, but only 5 predominate: woods, agriculture, and 1/2-, 1/3-, and 1/4-acre residential lots. Approximately 40% of the watershed is comprised of wooded areas, 20% is agricultural, and 25% is 1/4-acre residential. One half- and 1/3-acre residential land uses each comprise about 5% of the watershed. The remaining 5% of the watershed consists of the other 6 land uses: pasture, commercial, open space, 1- and 2-acre residential, and paved areas. Wolf Creek directly discharges to the impaired receiving waters of the Roanoke River, and it has a wasteload allocation for PCBs from a TMDL report completed in 2010.

C. Wasteload Allocations

Table IV-2 provides a listing of all current wasteload allocations for Roanoke County, as assigned by the Virginia Department of Environmental Quality (DEQ).

**Table IV-2
Wasteload Allocations for Roanoke County Watersheds with Completed TMDLs**

| TMDL Waterways and Impaired Tributaries* | Year TMDL Completed | Parameter | WLA |
|---|----------------------------|-----------------------|---------------------------------------|
| <i>Tinker Creek Watershed</i> | 2004 | <i>E. Coli</i> | |
| Carvin Creek | | | 4.07E+12 (colony forming units/yr) |
| Glade Creek | | | 8.02E+10 (colony forming units/yr) |
| Lick Run | | | 3.29E+09 (colony forming units/yr) |
| Tinker Creek | | | 5.36E+11 (colony forming units/yr) |
| <i>Roanoke River Watershed</i> | 2006 | <i>E. Coli</i> | |
| Ore Branch | | | 1.07E+09 (colony forming units/yr) |
| Roanoke River | | | 2.84E+11 (colony forming units/yr) |
| <i>Roanoke River Watershed</i> | 2006 | Sediment | |
| Roanoke River | | | 1,823 (tons/yr) |
| <i>Roanoke River Watershed</i> | 2009 | PCBs | |
| Roanoke River | | | 47.9 (mg/yr) |
| Masons Creek | | | 0.1 (mg/yr) |
| Peters Creek | | | 4.7 (mg/yr) |
| Tinker Creek | | | 38.4 (mg/yr) |
| Wolf Creek | | | 10 (mg/yr) |
| Unnamed Tributary to Roanoke River | | | 0.5 (mg/yr) |

*This information is based upon DEQ's list of approved and draft TMDL's at <http://www.deq.state.va.us/tmdl/develop.html> for streams located within the urbanized portion of Roanoke County, as defined by the 2010 U.S. Census.

Part V. Appendix

Supporting Documents, Standard Operating Procedures, and Policies

| <u>Folder Name</u> | <u>Document Name</u> |
|---------------------------|--|
| Introduction | Letters to Physically Interconnected Downstream Regulated MS4s April 26, 2024 MOA with Roanoke County Public Schools August 2024 |
| BMP 1-1 | Audio-Visual Information January 2025 Environmental Educational Publications and Programs January 2025 Local and National Agencies January 2025 Printed Materials and Publications January 2025 |
| BMP 1-2 | Stormwater Newsletter March 2025 |
| BMP 1-4 | Partnership Service Agreement RoCo-WVWA September 2023 2025-2026 WVWA Education Programming Guide |
| BMP 1-5 | Partnership Service Agreement RoCo-WVWA September 2023 |
| BMP 1-7 | Stormwater Education Program for Specific Audiences October 2025 (See Figure 3 in BMP 1-7) Various Printed Materials and PSAs |
| BMP 2-1 | Storm Drain Stenciling Program Document with Application November 2022 Mylar Stencils |
| BMP 2-2 | Partnership Service Agreement RoCo-WVWA September 2023 |
| BMP 2-3 | Procedures for Addressing MS4-Related Public Comments November 2025 |
| BMP 2-4 | Partnership Service Agreement RoCo-WVWA September 2023 |
| BMP 3-1 | MS4 Map September 2025 MS4 Outfalls Table September 2025 |
| BMP 3-2 | Illicit Discharge Ordinance July 1, 2014 Illicit Discharge Detection and Elimination Procedures March 1, 2022 |
| BMP 3-3 | Illicit Discharge Detection and Elimination (IDDE) Procedures March 1, 2022 MS4 Map September 2025 MS4 Outfalls Table September 2025 Illicit Discharge Reporting Form December 2025 |

| | |
|---------|---|
| BMP 3-4 | <p>Illicit Discharge Detection and Elimination (IDDE) Procedures March 1, 2022 MS4 Map September 2025 MS4 Outfalls Table September 2025</p> |
| BMP 4-1 | <p>Erosion and Stormwater Management (ESM) Ordinance 9-23-25 Erosion and Sediment Control (ESC) Permit (yellow) 4-23-25 Combined Erosion and Stormwater Management Program (VESMP) Permit - Individual (blue) 7-25-19 Combined Erosion and Stormwater Management Program (VESMP) Permit - Overall Development (green) 7-25-19 Explanation of Permit Card Colors 7-25-19 Agreement-in-lieu-of an Erosion and Sediment Control Plan 2-1-24 Agreement-in-lieu-of a Stormwater Management Plan 2-1-24 DEQ VPDES Approval Letter (MS4 Permit Coverage) 10-30-23 DEQ Approval Letter Alternative Inspection Program 7-29-13 Stormwater Management Design Manual 3-22-16 Appointment of County's VESMP Administrator 7-31-24 Roanoke County Contract language for hazardous material 9-19-23</p> |
| BMP 4-2 | <p>Engineering Review Checklist 4-2-13 Digital Plan Submission Guide 3-3-22 Agreement-in-lieu-of an Erosion and Sediment Control Plan 2-1-24 Agreement-in-lieu-of a Stormwater Management Plan 2-1-24 Stormwater Management Design Manual 3-22-16</p> |
| BMP 4-3 | <p>Inspector Protocol March 5-8-20 ESC Inspection Report October 2025 VSMP Inspection Report October 2025 Alternative Inspection Program (ESC) 7-29-13 Alternative Inspection Frequency (ESC) - Tabular Rating Sheet 7-29-13 DEQ Approval letter Alternative Inspection Program 7-29-13 ESC Inspection and Enforcement Procedures May 2020 VSMP Inspection and Enforcement Procedures May 2020</p> |
| BMP 4-4 | <p>ESC Inspection and Enforcement Procedures May 2020 VSMP Inspection and Enforcement Procedures May 2020 Erosion and Stormwater Management (ESM) Ordinance 9-23-25</p> |
| BMP 5-1 | <p>DEQ VPDES Approval Letter (MS4 Permit Coverage) 10-30-23 Stormwater Management Facilities Maintenance Agreement 11-18-22 Erosion and Stormwater Management (ESM) Ordinance 9-23-25</p> |
| BMP 5-2 | <p>Stream Restoration of Wolf Creek in Goode Park Responsibilities and Maintenance Plan June 2020</p> |

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|---------|---|
| | Glade Creek Stream Restoration at Vinyard Park Phase 1 - Responsibilities and Maintenance Plan August 4, 2017 Glade Creek Stream Restoration at Vinyard Park Phase 2 Responsibilities and Maintenance Plan June 2019 Murray Run Stream Restoration at Ogden Road - Responsibilities and Maintenance Plan Revised May 2018 SWMF Inspection Forms (tailored for each facility type) January 2024 |
| | Notice of Inspection BMPs August 2023 Roanoke County Stormwater Facility Maintenance Schedule 9-5-25 |
| BMP 5-3 | Stormwater Management Facilities (SWMFs) that Discharge into the MS4 July 2025 |
| BMP 5-4 | Stormwater Newsletter March 2025 Stormwater Tips for Homeowners May 2024 |
| BMP 5-5 | Standard Operating Procedures (SOPs) for Pollution Prevention and Good Housekeeping - July 2025 Illicit Discharge Ordinance eff 7-1-2014 Erosion and Stormwater Management (ESM) Ordinance 9-23-25 |
| BMP 6-1 | SPCC Plans for Existing County Facilities August 2021 |
| BMP 6-2 | Standard Operating Procedures (SOPs) for Pollution Prevention and Good Housekeeping - July 2025 Contractor Good Housekeeping and Pollution Prevention Procedures December 2025 |
| BMP 6-3 | Standard Operating Procedures (SOPs) for Pollution Prevention and Good Housekeeping - July 2025 Roanoke County MS4 Training Plan July 2019 |
| BMP 6-4 | Standard Operating Procedures (SOPs) for Pollution Prevention and Good Housekeeping - July 2025 Completed SWPPPs (See Figure 4 in BMP 6-4) Contractor Good Housekeeping and Pollution Prevention Procedures December 2025 Roanoke County MS4 Training Plan July 2019 |
| BMP-6-5 | Nutrient Management Plans for County-owned and RCPS-owned Lands: RoCo Parks, Recreation and Tourism NMP Approved 8-1-25 RCPS NMP Approved June 26, 2025 Roanoke County (RoCo) Parks, Recreation and Tourism NMP Summary Table Roanoke County Public Schools (RCPS) NMP Summary Table |

TMDLs

TMDL Action Plan for Bacteria (*E. Coli*) Reduction March 2025

TMDL Action Plan for Sediment Reduction March 2025

TMDL Action Plan for Polychlorinated Biphenyls (PCBs) Reduction
October 2025