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Virginia Department of Environmental Quality  
Blue Ridge Regional DEQ Office  
Attn: MS4 Permitting Division 3019  
Peters Creek Road  
Roanoke, VA 24019

September 30, 2016

**Re: City of Roanoke MS4 Permit #VAR040004, Year One (2016) Annual Report and MS4 Program Plan Update**

To whom it may concern,

The City of Roanoke is pleased to submit our year one (2016) MS4 Annual Report and Program Plan Update (General Permit #VAR040004). Enclosed please find a USB drive with our annual report for the preceding permit year. The documentation of some measurable goals appears within the report as hypertext links or downloadable files.

The City of Roanoke remains committed to maintaining a comprehensive MS4 Program. In addition, we continue to work collaboratively with our neighboring MS4s and other partners to improve stormwater issue and regulation awareness throughout the Roanoke Valley and beyond. You're welcome to contact me should you have any questions or comments. Thank you for your time and consideration of our submission.

Sincerely,

Leigh Anne Weitzenfeld, MNR, ENV SP, CFM  
Water Quality Administrator

Encl: 2016 MS4 Annual Report and Program Plan Update, and Executive Certification

# CITY OF ROANOKE, VIRGINIA

## MS4 Permit Annual Report and Program Plan Update

Reporting Period  
July 1, 2015 – June 30, 2016

Submitted to:

**The Virginia Department of Environmental Quality**

Blue Ridge Regional DEQ Office  
MS4 Stormwater Permitting Division  
3019 Peters Creek Road  
Roanoke, VA 24019



Prepared by:

**Stormwater Division**  
Public Works Service Center  
1802 Courtland Rd. NE  
Roanoke, VA 24012



# ANNUAL REPORT AND PROGRAM PLAN UPDATE SECTIONS

City of Roanoke Permit Number VAR040004

This report consists of documentation of the City of Roanoke's compliance with the following six minimum control measures as required by the General Permit for Discharges of stormwater from small municipal separate storm sewer systems (MS4)

## Report Contents

1. Modifications to Departmental Roles and Responsibilities
2. Number of New MS4 Outfalls and Associated Acreage by HUC during Permit Year
3. Signed Executive Certification Statement
4. Permit Section I – Special Conditions, TMDL Requirements
5. MCM #1 Public Education and Outreach on Stormwater
6. MCM #2 Public Participation and Involvement
7. MCM #3 Illicit Discharge Detection and Elimination
8. MCM #4 Construction Site Stormwater Runoff Control
9. MCM #5 Post Construction Stormwater Management
10. MCM #6 Pollution Prevention and Good Housekeeping for Municipal Operations

## Modifications to Departmental Roles and Responsibilities

The only new modification for permit year 15-16, is the addition of George Nevergold, the new Development Review Coordinator taking the place of Danielle Bishop. Mr. Nevergold will assume the responsibility for MCM#4 and MCM#5.

Below is an outline of roles and responsibilities:

**Dwayne D'Ardenne** – Overall Compliance Assurance; Stormwater Division Manager

**Leigh Anne Weitzenfeld** – Overall Program Plan Administration, MCMs#1, #2 and #6; Water Quality Administrator

**Christopher Blakeman** – MCM#3, MCM#6 (staff training, PWSC SOP/SWPPP development); Environmental Administrator

**George Nevergold** – MCM#4, MCM#5; Development Review Coordinator

## Number of New MS4 Outfalls and Associated Acreage by HUC during Permit Year

One new MS4 outfall was added during the permit year as a result of development for the Mellow Mushroom on Franklin Road. The outfall number is 403186 and the associated HUC12 is 030101010404. The drainage area for this new outfall is 8.5 acres.

## Signed Executive Certification Statement

Continued on the following page.

## Certification Statement and Requirements

As required by 9VAC25-870-370 B, all reports required by state permits, and other information requested by the board shall be signed by a responsible official or by a duly authorized representative of that person. A responsible official is:

- 1. For a corporation: by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means: (i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy-making or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided the manager is authorized to make management decisions that govern the operation of the regulated facility, including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long-term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for state permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;*
- 2. For a partnership or sole proprietorship: by a general partner or the proprietor, respectively; or*
- 3. For a municipality, state, federal, or other public agency: by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a federal agency includes (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency.*

### Duly Authorized Representatives

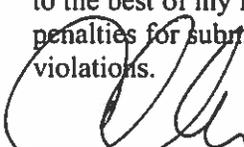
A person is a duly authorized representative only if:

- 1. The authorization is made in writing by a person described above;*
- 2. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. A duly authorized representative may thus be either a named individual or any individual occupying a named position; and*
- 3. The written authorization is submitted to the department.*

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### CERTIFICATION

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

  
Responsible Official Signature

9-27-16  
Date

VAR040004, City of Ronoake, Virginia

Permit Number

MS4 Name



City of Roanoke, VA

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## **City of Roanoke, VA MS4 SWMP 2018**

**July 01, 2015 To June 30, 2016**

This program consists of the following 8 Minimum Control Measure(s).

1. Special conditions for approved total maximum daily loads (TMDL) other than the Chesapeake Bay TMDL.
2. MCM#1 Public Education and Outreach on Stormwater Impacts
3. MCM#2 Public Participation/Involvement
4. MCM#3 Illicit Discharge Detection and Elimination (IDDE)
5. MCM#4 Construction Site Stormwater Runoff Control
6. MCM#5 Post-Construction Stormwater Management in New Development and Development on Prior Developed Lands
7. MCM#6 Pollution Prevention/ Good Housekeeping for Municipal Operations
8. MS4 Program Evaluation

# 1 Special conditions for approved total maximum daily loads (TMDL) other than the Chesapeake Bay TMDL.

**Responsible Staff / Position:** LeighAnne Weitzenfeld  
Water Quality Administrator

## Description

An approved TMDL may allocate an applicable wasteload to a small MS4 that identifies a pollutant or pollutants for which additional stormwater controls are necessary for the surface waters to meet water quality standards. The MS4 operator shall address the pollutants in accordance with this special condition where the MS4 has been allocated a wasteload in an approved TMDL.

1. The operator shall maintain an updated MS4 Program Plan that includes a specific TMDL Action Plan for pollutants allocated to the MS4 in approved TMDLs. TMDL Action Plans may be implemented in multiple phases over more than one state permit cycle using the adaptive iterative approach provided adequate progress to reduce the pollutant discharge in a manner consistent with the assumptions and requirements of the specific TMDL wasteload is demonstrated in accordance with subdivision 2.e of this subsection. These TMDL Actions Plans shall identify the best management practices and other interim milestone activities to be implemented during the remaining terms of this state permit.

- a. In accordance with Table 1 in this section, the operator shall update the MS4 Program Plans to address any new or modified requirements established under this special condition for pollutants identified in TMDL wasteload allocations approved prior to July 9, 2008.
- b. In accordance with Table 1 in this section, the operator shall update the MS4 Program Plan to incorporate approvable TMDL Action Plans that identify the best management practices and other interim milestone activities that will be implemented during the remaining term of this permit for pollutants identified in TMDL wasteload allocations approved either on or after July 9, 2008, and prior to issuance of this permit.
- c. Unless specifically denied in writing by the department, TMDL Action Plans and updates developed in accordance with this section become effective and enforceable 90 days after the date received by the department.

2. The operator shall:

- a. Develop and maintain a list of its legal authorities such as ordinances, state and other permits, orders, specific contract language, and interjurisdictional agreements applicable to reducing the pollutant identified in each applicable WLA;
- b. Identify and maintain an updated list of all additional management practices, control techniques and system design and engineering methods, beyond those identified in Section II B, that have been implemented as part of the MS4 Program Plan that are applicable to reducing the pollutant identified in the WLA;
- c. Enhance its public education and outreach and employee training programs to also promote methods to eliminate and reduce discharges of the pollutants identified in the WLA;
- d. Assess all significant sources of pollutant(s) from facilities of concern owned or operated by the MS4 operator that are not covered under a separate VPDES permit and identify all municipal facilities that may be a significant source of the identified pollutant. For the purposes of this assessment, a significant source of pollutant(s) from a facility of concern means a discharge where the expected pollutant loading is greater than the average pollutant loading for the land use identified in the TMDL. ( For example, a significant source of pollutant from a facility of concern for a bacteria TMDL would be expected to be greater at a dog park than at other recreational facilities where dogs are prohibited);
- e. Develop and implement a method to assess TMDL Action Plans for their effectiveness in reducing the pollutants identified in the WLAs. The evaluation shall use any newly available information, representative and adequate water quality monitoring results, or modeling tools to estimate pollutant reductions for the pollutant or pollutants of concern

from implementation of the MS4 Program Plan. Monitoring may include BMP, outfall, or in-stream monitoring, as appropriate, to estimate pollutant reductions. The operator may conduct monitoring, utilize existing data, establish partnerships, or collaborate with other MS4 operators or other third parties, as appropriate. This evaluation shall include assessment of the facilities identified in subdivision 2 d of this subsection. The methodology used for assessment shall be described in the TMDL Action Plan.

3. Analytical methods for any monitoring shall be conducted according to procedures approved under 40 CFR Part 136 or alternative methods approved by the Environmental Protection Agency (EPA). Where an approved method does not exist, the operator must use a method consistent with the TMDL.

4. The operator is encouraged to participate as a stakeholder in the development of any TMDL implementation plans applicable to their discharge. The operator may incorporate applicable best management practices identified in the TMDL implementation plan in the MS4 Program Plan or may choose to implement BMPs of equivalent design and efficiency provided that the rationale for any substituted BMP is provided and the substituted BMP is consistent with the assumptions and requirements of the TMDL WLA.

5. Annual reporting requirements.

a. The operator shall submit the required TMDL Action Plans with the appropriate annual report and in accordance with the associated schedule identified in this state permit.

b. On an annual basis, the operator shall report on the implementation of the TMDL Action Plans and associated evaluation including the results of any monitoring conducted as part of the evaluation.

6. The operator shall identify the best management practices and other steps that will be implemented during the next state permit term as part of the operator's reapplication for coverage as required under Section III M.

7. For planning purposes, the operator shall include an estimated end date for achieving the applicable wasteload allocations as part of its reapplication package due in accordance with Section III M.

## Best Management Practices

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### 1.1 MS4 Program Plan/TMDL Action Plan Requirements

**Responsible Staff / Position:** LeighAnne Weitzenfeld  
Water Quality Administrator

**Required** Yes

#### Description

A description of the measures, procedures, and processes used to comply with the Section I.B. of the MS4 Permit. For reporting purposes reference may be made to materials which can be found elsewhere and where such materials are available to the public either freely or upon request.

#### Justification

Required under Section I.B.

### Annual Reporting Items

1. TMDL Action Plan Submittal
2. Facility Assessment

### Goals

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#### 1.1.1 TMDL Action Plan Submittal

**Responsible Staff / Position:** LeighAnne Weitzenfeld  
Water Quality Administrator

#### Description

The City shall submit the required TMDL Action Plans with the appropriate annual report and in accordance with the associated schedule identified in the City's permit. The items from Sections I.B.2.a-c. of the permit will be included in the TMDL Action Plan.

For reporting year 2015 this will include TMDLs issued prior to 2008 for bacteria and sediment. For the 2016 reporting year this will include the TMDL issued in December 2009 for PCBs.

**Planned:** 2014 2015 2016

**Complete:** 2014 2015 2016

Activity Date	Name
06/30/2016	FY16 TMDL Action Plans

#### Description

The City of Roanoke is submitting its updated Sediment and Bacteria TMDL Action Plan and its newly developed PCB Action Plan in conjunction with the City's 2016 MS4 Permit Annual Report. TMDLs for these priority pollutants were approved prior to July 2008 and December 2009, respectively.

The Action Plan describes the legal authorities, BMPs, education and training programs, and other initiatives the city will undertake to meet its waste load allocations and successfully delist the Roanoke River and its tributaries.

File Attachment [COR Sediment and Bacteria TMDL Action Plan FY16-17 FINAL.pdf](#)

File Attachment [City of Roanoke PCB TMDL Action Plan FINAL FY16-17.pdf](#)

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### 1.1.2 Facility Assessment

**Responsible Staff / Position:**

LeighAnne Weitzenfeld  
Water Quality Administrator

#### Description

The City shall assess all significant sources of pollutants from facilities of concern owned or operated by the City that are not covered by a separate VPDES permit and identify all municipal facilities that may be a significant source of the identified pollutant. The City will annually report on its assessment.

**Planned:** 2014 2015 2016

**Complete:** 2014 2015 2016

**Activity Date**

**Name**

06/30/2016

FY16 TMDL Assessment at City Facilities

#### Description

The City assessed all facilities in accordance with Section II.B.6.b. of the permit and identified several facilities that are high priority. At our Public Works Service Center, sediment pollution may occur as it is washed off of the pavement. To counteract this potential problem, the City mechanically sweeps these lots (moving all equipment and vehicles) twice a year. Bacterial pollution is possible on the Solid Waste Division "Ready Line" where all garbage and recycling collection trucks are stored overnight. To counteract this, the "Ready Line" is swept and cleaned even more frequently, usually every two weeks, and the garbage trucks are fully washed at least weekly, and at times more often, especially during warm or hot weather.

In addition to this identified facility, the City has several parks and green spaces where citizens play with their pets. In an attempt to limit the pollution from their pet's waste, the City has installed 48 pet waste stations, which provide free bags for waste collection. This operation is constantly expanding and is discussed in greater detail under Section 7.1.4 of this report.

In the permit year 2014-15, the city added two dog parks due to the potential for larger bacterial contamination loads. Thrasher Park has a fenced, leash-free acre sized yard. Thrasher Park straddles both Tinker Creek and Glade Creek watersheds but is geographically closer to Glade Creek. Highland Park also contains a fenced leash-free zone that is about an acre in size. Highland Park is in close proximity to the Roanoke River.

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## 1.2 Annual Reporting Requirements

**Responsible Staff / Position:** LeighAnne Weitzenfeld  
Water Quality Administrator

**Required** Yes

### Description

A report of all elements required under Section I.B.5. of the MS4 Permit, plus any additional items the City feels it should include in the annual MS4 report.

### Justification

Required under Section I.B.5.

## Annual Reporting Items

1. Progress Report on the Implementation of the TMDL Action Plan and an Assessment of Its Effectiveness

### Goals

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#### 1.2.1 TMDL Action Plan Progress Report and Evaluation

**Responsible Staff / Position:** LeighAnne Weitzenfeld  
Water Quality Administrator

### Description

The City shall submit a report on the implementation of the TMDL Action Plan and associated evaluation including the results of any monitoring conducted as part of the evaluation. Evaluation of the effectiveness of the TMDL Action Plan shall follow the guidelines in Section I.B.2.e. of the permit.

**Planned:** 2014 2015 2016 2017 2018

**Complete:** 2014 2015 2016

Activity Date	Name
06/30/2016	FY16 TMDL Action Plan Assessment

### Description

The City has updated its Action Plan with completed action items during FY 2015-16, documented successes and more extensive development of program objectives using an adaptive iterative methodology.

In accordance with Section I.B.2.e, the City has included benthic macroinvertebrate monitoring results at sites that were sampled during FY15-16. Attachments include a site map, genera found to a family taxonomic level and a spreadsheet including VSCI scores and other water quality data. In addition to the continued relationship with the VT Department of Civil and Environmental Engineering, the City will begin its citizen science benthic macroinvertebrate monitoring program which will assess sites on a quarterly basis. Over the next several years, the City will establish a base line to assess pollutant reductions.

As a result of the City's commitment to taking a watershed approach to resolving water quality impairments, the City has integrated action items from Table 12 of the Lick Run Watershed Master Plan into this new iteration of the Bacteria and Sediment Action Plan. Table 12 includes watershed indicators that will also serve as a measurement of reductions from key pollutants and enhancements of water quality in impaired watersheds.

Water Quality Data through the USGS Program outlined in the Action Plan is available here: [http://waterdata.usgs.gov/va/nwis/inventory/?site\\_no=0205551460&agency\\_cd=USGS](http://waterdata.usgs.gov/va/nwis/inventory/?site_no=0205551460&agency_cd=USGS)

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As the PCB TMDL Action Plan has just been developed in the FY16 permit year, there is not an assessment included in this permit report. Assessment of the PCB Action Plan will commence with FY16 Annual Report.

File Attachment [\*FY15-16 Biological Data Flat Table.xlsx\*](#)

File Attachment [\*FY15-16 VT Benthic Monitoring VSCI Flat Table.xlsx\*](#)

File Attachment [\*FY15-16 VT Biological Monitoring Sites.pdf\*](#)

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## 2 MCM#1 Public Education and Outreach on Stormwater Impacts

**Responsible Staff / Position:** LeighAnne Weitzenfeld  
Water Quality Administrator

### Description

To comply with this MCM, the City must satisfy the following:

a. The operator shall continue to implement the public education and outreach program as included in the registration statement until the program is updated to meet the conditions of this state permit. Operators who have not previously held MS4 permit coverage shall implement this program in accordance with the schedule provided with the completed registration statement.

b. The public education and outreach program should be designed with consideration of the following goals:

- (1) Increasing target audience knowledge about the steps that can be taken to reduce stormwater pollution, placing priority on reducing impacts to impaired waters and other local water pollution concerns;
- (2) Increasing target audience 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 towards audiences most likely to have significant stormwater impacts.

c. The updated program shall be designed to:

- (1) Identify, at a minimum, three high-priority water quality issues, that contribute to the discharge of stormwater (e.g., Chesapeake Bay nutrients, pet wastes and local bacteria TMDLs, high-quality receiving waters, and illicit discharges from commercial sites) and a rationale for the selection of the three high-priority water quality issues;
- (2) Identify and estimate the population size of the target audience or audiences who is most likely to have significant impacts for each high-priority water quality issue;
- (3) Develop relevant message or messages and associated educational and outreach materials (e.g., various media such as printed materials, billboard and mass transit advertisements, signage at select locations, radio advertisements, television advertisements, websites, and social media) for message distribution to the selected target audiences while considering the viewpoints and concerns of the target audiences including minorities, disadvantaged audiences, and minors;
- (4) Provide for public participation during public education and outreach program development;
- (5) Annually conduct sufficient education and outreach activities designed to reach an equivalent 20% of each high-priority issue target audience. It shall not be considered noncompliance for failure to reach 20% of the target audience. However, it shall be a compliance issue if insufficient effort is made to annually reach a minimum of 20% of the target audience; and
- (6) Provide for the adjustment of target audiences and messages including educational materials and delivery mechanisms to reach target audiences in order to address any observed weaknesses or shortcomings.

d. The operator may coordinate their public education and outreach efforts with other MS4 operators; however, each operator shall be individually responsible for meeting all of its state permit requirements.

e. Prior to application for continued state permit coverage required in Section III M, the operator shall evaluate the education and outreach program for:

- (1) Appropriateness of the high-priority stormwater issues;
- (2) Appropriateness of the selected target audiences for each high-priority stormwater issue;

- (3) Effectiveness of the message or messages being delivered; and
- (4) Effectiveness of the mechanism or mechanisms of delivery employed in reaching the target audiences.

f. The MS4 Program Plan shall describe how the conditions of this permit shall be updated in accordance with Table 1 in this section.

g. The operator shall include the following information in each annual report submitted to the department during this permit term:

- (1) A list of the education and outreach activities conducted during the reporting period for each high-priority water quality issue, the estimated number of people reached, and an estimated percentage of the target audience or audiences that will be reached; and
- (2) A list of the education and outreach activities that will be conducted during the next reporting period for each high-priority water quality issue, the estimated number of people that will be reached, and an estimated percentage of the target audience or audiences that will be reached.

## Best Management Practices

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### 2.1 MS4 Program Plan Requirements

**Responsible Staff / Position:** LeighAnne Weitzenfeld  
Water Quality Administrator

**Required** Yes

#### Description

A description of the measures, procedures, and processes used to comply with the Section II.B.1. of the MS4 Permit. For reporting purposes reference may be made to materials which can be found elsewhere and where such materials are available to the public either freely or upon request.

#### Justification

Required under Section II.B.1.

### Annual Reporting Items

1. Education and Outreach Plan
2. Plan for Updates in Accordance with the 2013-2018 MS4 Permit

### Goals

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#### 2.1.1 Education and Outreach Plan

**Responsible Staff / Position:** LeighAnne Weitzenfeld  
Water Quality Administrator

#### Description

The City has designed a public education and outreach plan in accordance with Section II.B.1.b-c. of the permit. This plan, including target audience selection and estimates, will be described and updated as needed.

**Planned:** 2014 2015 2016

**Complete:** 2014 2015 2016

Activity Date	Name
06/30/2016	FY16 Contracted Support Services

#### Description

The City of Roanoke has contracted with the Clean Valley Council (CVC) for the past several years to provide effective and efficient stormwater and water quality information and education throughout our region. The CVC's program offerings, as well as its classroom and field lessons reach a wide range of citizens and have a demonstrated track record of successfully fostering greater environmental literacy, awareness and stewardship.

For the FY16-17, the contract has been amended to include day-to-day oversight of the Citizen Science Water Monitoring Program.

A copy of the City's contract with the CVC is attached for reference as needed.

File Attachment [\*Amendment No. 2 8YYL7X FINAL.pdf\*](#)

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06/30/2016	FY16 Target Audience Identification and Estimation
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#### Description

The City, in collaboration with other area localities, identified sediment, bacteria, and nutrients as our three high-priority water quality issues. Target audiences were identified and their populations estimated based on various data sources. In addition, the City developed messages and outreach mechanisms, also in collaboration with other

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localities.

All of this information, as well as a more in-depth description of our rationale, is included in the attached spreadsheet.

A newly identified target audience for bacteria is septic system owners and will be added into the targeted education and outreach matrix for FY16-17.

Additionally, as we develop our PCB outreach program we will be reaching priority audiences that are outlined in more detail in the PCB Action Plan.

File Attachment [City of Roanoke Targeted Outreach Matrix FY16-17.pdf](#)

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06/30/2016 FY16 Selected High Priority Water Quality Issues

**Description**

The City of Roanoke has previously selected sediment, bacteria, and nutrients as its priority water quality issues. Polychlorinated biphenols will be added to the priority water quality issue list for FY16-17 and moving forward. These issues were selected because of our local TMDL's (in the case of bacteria, sediment and PCBs), as well as the regular threat all issues pose to our waterways.

These categories are mostly in-line with those selected by other localities in the area, so outreach activities may be either individual or coordinated going forward.

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**2.1.2 Plan for Updates in Accordance with New Permit Conditions**

**Responsible Staff / Position:** LeighAnne Weitzenfeld  
Water Quality Administrator

**Description**

In accordance with Section II.B.1.f., the City shall describe how the conditions of the permit shall be updated in accordance with Table 1 of the permit.

**Planned:** 2014 2015 2016

**Complete:** 2014 2015 2016

**Activity Date Name**

06/30/2016 FY16 Plan for Updates to the Program Plan

**Description**

The City's MS4 Program Plan will be constantly updated in accordance with the schedule in Table 1 of the permit. As the Program Plan is updated, the new, revised version will be included with the next Annual Report. All necessary updates will be completed by the required dates (as specified in Table 1) until the Program Plan is fully updated for the City's 2013-2018 MS4 Permit.

A PCB Action Plan is being submitted with this MS4 Permit Report to meet this year's permit updates from Table 1.

NMPs are being submitted for all qualifying City Parks showing progress under NMP implementation. For FY16-17, the City will assess, in collaboration with City Schools what school sites may require nutrient management plans.

## 2.2 Annual Reporting Requirements

**Responsible Staff / Position:** LeighAnne Weitzenfeld  
Water Quality Administrator

**Required** Yes

### Description

A report of all elements required under Section II.B.1.g. of the MS4 Permit, plus any additional items the City feels it should include in the annual MS4 report.

### Justification

Required under Section II.B.1.g.

## Annual Reporting Items

1. Past Permit Year's Education and Outreach Events
2. Planned Education and Outreach Events for the Next Permit Year
3. Educational Resource Inventory

### Goals

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#### 2.2.1 Past Permit Year's Education and Outreach Events

**Responsible Staff / Position:** LeighAnne Weitzenfeld  
Water Quality Administrator

### Description

The City will discuss the development, implementation, maintenance, and activities associated with the City's education and outreach plan, including a list of activities from the past year that states the number of people reached and the percentage of the target audience they constitute.

**Planned:** 2014 2015 2016 2017 2018

**Complete:** 2014 2015 2016

<b>Activity Date</b>	<b>Name</b>
06/30/2016	FY16 Education and Outreach Events

### Description

The City and its contracted outreach contractor, CVC collaborated and engaged in a wide array of public educational processes during the past permit year. Examples of those efforts are highlighted below and documented through the attached documents. These include education events through the Clean Valley Council, local school programs, sediment-related outreach materials, and bacteria-specific outreach targeting restaurants and pet owners. For FY15-16, a concerted effort was put into reaching a wider audience, expanding and reaching our target audience for pet waste, expanding rainbarrel usage and educating the public on stormwater and the unified effort needed to Create a Clean Water Legacy.

#### **Clean Valley Council Summary = 9058 citizens reached**

##### Educational Programming

Multijurisdictional Event Totals = 288 (261 Youth, 27 Adults)

City of Roanoke Event Totals = 4525 (4324 Youth, 201 A)

##### Programming Types

**Stream School** = 474 (440 Youth, 34 Adults)

**General Environmental Literacy Programming** = 4339 (4145 Youth, 194 Adults) **Outreach Events** = 4245

Giveaway data can be found on attached summary sheets

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**City of Roanoke Summary = 66,825 households/citizens reached**

Educational Programming

**Outreach Events** = 3041 citizens reached

**Presentations** = 293 citizens reached

**Direct Mailers** = 63,492 citizens/households reached

Giveaway data can be found on attached summary sheets

06/30/2016

FY16 Education and Outreach Events Attachments

**Description**

Supporting documentation for the FY16 Education and Outreach Events attached here.

File Attachment [Roanoke MCM1 E\\_O Events FY15\\_16.pdf](#)

File Attachment [CVC MCM1 E\\_O Events FY15\\_16.pdf](#)

**2.2.2 Planned Education and Outreach Events for the Next Permit Year**

**Responsible Staff / Position:** LeighAnne Weitzenfeld  
Water Quality Administrator

**Description**

In each annual report, the City will describe the planned education and outreach activities for the next permit year, including the number of people that will be reached and the estimated percentage of the target audience that this constitutes.

**Planned:** 2014 2015 2016 2017 2018

**Complete:** 2014 2015 2016

Activity Date	Name
06/30/2016	Education and Outreach Activities Planned for FY17

**Description**

The City's Bacteria and Sediment TMDL Action Plan, as well as the PCB TMDL Action Plan are the best repositories for charting future educational goals and plans. For the pollutant bacteria, the City will continue its pet waste reduction campaign by developing new partnerships to increase efficiency in reaching and engaging the target audience. We will also create partnerships and an outreach campaign for optimizing function of existing septic fields. Lastly, the development of a bacteria monitoring program will allow us to establish a "normal" bacterial level baseline and track illicit bacteria sources. The City will also be addressing restaurant FOGs through a downtown needs and processes assessment.

For sediment, Stormwater will begin the discussion on revising the City's Stormwater Design Manual to support stormwater infiltration via green infrastructure. Integration of the City's Action Plans with our developing watershed master plans will also aid in sediment reduction through addressing the causative factors. There a plans to implement a Citizen Science Water Monitoring Program in FY16-17. Through a collaborative effort with CVC and local civic groups, we will continue to put on rainbarrel workshops through our trained rainbarrel volunteers from the "Train-the-Trainer" Rainbarrel Initiative.

A Mulch Mowing brochure is planned to tackle mowed grass residue on city sidewalks and streets as well as, fall leaves. Both are contributing to excessive nutrient-based pollution entering the MS4 and also contributing to localized flooding.

Introductory materials on PCBs are planned to be created to give citizens some background information on the history, current sources, and health ramifications.

The city will continue to have involvement in both large-scale watershed clean-up days - Clean Valley Day in the spring and Fall Waterways Clean-up in the fall. In addition to these two events, the city will have a presence at many local high profile events, such as Big Lick Burgerfest and also the events that our outreach contractor, the Clean Valley Council will attend. The city will also continue to reach citizens through mailers, internet and social media outlets, and direct engagement.

A concerted effort will be made to continue giving the "Creating a Clean Water Legacy" presentation to each neighborhood association and other civic groups. Further enhancement of our website will include an interactive watershed map and information. Also a digital e-newsletter is in development.

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### 2.2.3 Educational Resource Inventory

**Responsible Staff / Position:** LeighAnne Weitzenfeld  
Water Quality Administrator

#### Description

The city will revise existing, and develop new listings of publications, programs and educational opportunities found in the region and continually update the library (at least) annually.

Documentation of this goal will be an updated record of publication and publication library inventory. Maintenance and updating of library is ongoing and subject to audit as per contract between the city and Clean Valley Council.

**Planned:** 2014 2015 2016 2017 2018

**Complete:** 2014 2015 2016

Activity Date	Name
06/30/2016	FY16 Education Resource Inventory

#### Description

The Clean Valley Council serves as the City's stormwater outreach contractor. They constantly maintain an inventory of the various handouts and educational materials they have access to. Any or all of these materials may be utilized in different outreach settings, depending on the target audience/issue. Attached is the Clean Valley Council's educational resource inventory.

Since the hire of the City's Water Quality Administrator, many resource materials have been developed for outreach, including "Big Lick" our new pet waste campaign mascot. The majority of focus has been on bacteria and sediment issues.

Detailed Stormwater Utility Fee Credit Manuals for single family residences, as well as multi-family and commercial property owners have been developed with ideas of BMP implementation for stormwater reduction on private property. These books describe the utility and provide details for how to obtain credit for installing stormwater best management practices on one's property. Copies of each book can be found at the links below:

Roanoke Stormwater Ideabook:  
<http://www.roanokeva.gov/DocumentCenter/Home/View/347>

Stormwater Utility Fee Credit Manual for Commercial Properties:  
<http://www.roanokeva.gov/DocumentCenter/Home/View/353>

Stormwater Utility Fee Credit Manual for Single Family Homes:  
<http://www.roanokeva.gov/DocumentCenter/Home/View/354>

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- File Attachment [Stormwater Pollution Brochure Fall 2015 FINAL.pdf](#)
  - File Attachment [Contractor Brochure\\_0509.pdf](#)
  - File Attachment [Roanoke Stormwater Do Your Doody Brochure\\_FINAL.pdf](#)
  - File Attachment [Roanoke dog logo handstand.pdf](#)
  - File Attachment [Do Your Doody - White Text in Blue\\_Oval.pdf](#)
  - File Attachment [Roanoke Stormwater Dog Mascot FINAL.pdf](#)
  - File Attachment [City of Roanoke Dog Poop Poster.pdf](#)
  - File Attachment [CVC Education Resource Inventory.pdf](#)
  - File Attachment [RestaurantCVCPostcard\\_English\\_Final.pdf](#)
- 

#### 2.2.4 Other Public Information Mechanisms

**Responsible Staff / Position:** LeighAnne Weitzenfeld  
Water Quality Administrator

#### Description

The City has recently begun using other public information mechanisms, such as Facebook and Twitter, to spread awareness about stormwater topics and issues. A description of the past year's efforts will be included in each annual report.

**Planned:** 2014 2015 2016 2017 2018

**Complete:** 2014 2015 2016

Activity Date	Name
06/30/2016	FY16 Social Media and Website Update

#### Description

The city's Stormwater Division has committed to grow its social media presence by creating regular posts, multiple times each week include relevant stormwater related topics. Many local photographers are able to feature their local stream pictures.

**Facebook Growth:** (<https://www.facebook.com/roanokestormwater/>)

2014: 382 followers  
2015: 1217 followers  
2016: 1508 followers

**Twitter Growth:** (<https://twitter.com/RoanokeStormH2O>)

2014: 272 followers  
2015: 284 followers  
2016: 604 followers

**Pinterest Growth:** (<https://www.pinterest.com/RoanokeStormH2O/>)

2016: 84 followers

The City of Roanoke has created a new and improved website. The Stormwater Division page can be viewed here. Land-use change, ecosystem services, bacteria sources and water quality are covered to inform the public about our local water assets.

Webpage: <http://va-roanoke.civicplus.com/500/Stormwater>

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### 3 MCM#2 Public Participation/Involvement

**Responsible Staff / Position:** LeighAnne Weitzenfeld  
Water Quality Administrator

#### **Description**

To comply with this MCM, the City must satisfy the following:

a. Public involvement.

(1) The operator shall comply with any applicable federal, state, and local public notice requirements.

(2) The operator shall:

(a) Maintain an updated MS4 Program Plan. Any required updates to the MS4 Program Plan shall be completed at a minimum of once a year and shall be updated in conjunction with the annual report. The operator shall post copies of each MS4 program plan on its webpage at a minimum of once a year and within 30 days of submittal of the annual report to the department.

(b) Post copies of each annual report on the operator's web page within 30 days of submittal to the department and retain copies of annual reports online for the duration of this state permit; and

(c) Prior to applying for coverage as required by Section III M, notify the public and provide for receipt of comment of the proposed MS4 Program Plan that will be submitted with the registration statement. As part of the reapplication, the operator shall address how it considered the comments received in the development of its MS4 Program Plan. The operator shall give public notice by a method reasonably calculated to give actual notice of the action in question to the persons potentially affected by it, including press releases or any other forum or medium to solicit public participation.

b. Public participation. The operator shall participate, through promotion, sponsorship, or other involvement, in a minimum of four local activities annually e.g., stream cleanups; hazardous waste cleanup days; and meetings with watershed associations, environmental advisory committees, and other environmental organizations that operate within proximity to the operator's small MS4. The activities shall be aimed at increasing public participation to reduce stormwater pollutant loads; improve water quality; and support local restoration and clean-up projects, programs, groups, meetings, or other opportunities for public involvement.

c. The MS4 Program Plan shall include written procedures for implementing this program.

d. Each annual report shall include:

(1) A web link to the MS4 Program Plan and annual report; and

(2) Documentation of compliance with the public participation requirements of this section.

## Best Management Practices

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### 3.1 MS4 Program Plan Requirements

**Responsible Staff / Position:** LeighAnne Weitzenfeld  
Water Quality Administrator

**Required** Yes

#### Description

A description of the measures, procedures, and processes used to comply with the Section II.B.2. of the MS4 Permit. For reporting purposes reference may be made to materials which can be found elsewhere and where such materials are available to the public either freely or upon request.

#### Justification

Required under Section II.B.2.

### Annual Reporting Items

1. Procedure for Implementing the City's Public Participation Program

#### Goals

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##### 3.1.1 Procedure for Implementing the City's Public Participation Program

**Responsible Staff / Position:** LeighAnne Weitzenfeld  
Water Quality Administrator

#### Description

The City shall present its written procedure for implementing its public participation program.

**Planned:** 2014 2015 2016 2017 2018

**Complete:** 2014 2015 2016

#### Activity Date

#### Name

06/30/2016 FY16 Procedure for Implementing the City's Public Participation Program

#### Description

The City fully commits to continue its regular involvement with both annual local "river clean-up" days - Clean Valley Day (spring) and Fall Waterways Cleanup (autumn). In addition to this, the City plans to participate in the Clean Valley Council's Recycled Regatta that promotes recycling and clean waterways. The City implements programs for public involvement such as the Train-the-Trainer Rainbarrel Program and the Citizen Science Water Monitoring Program. The City also has active seats on the boards of the CVC and URRR.

Lastly, the City will have a presence, either with its own employees or through the City's public education and involvement contractor (Clean Valley Council), at many applicable local and/or regional events intended to make the public aware of stormwater and broader environmental stewardship issues and topics. Examples include but are not limited to: Earth Day celebration, Household Hazardous Waste and Electronic Waste collection events, various neighborhood group and other civic organization meetings and events, as well as maintain its membership on local and regional watershed planning and coordination committees. Otherwise, the City engages businesses, citizen groups, and the general public to participate in related events, and regularly takes steps to market and otherwise support such events.

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### 3.2 Annual Reporting Requirements

**Responsible Staff / Position:** LeighAnne Weitzenfeld  
Water Quality Administrator

**Required** Yes

#### Description

A report of all elements required under Section II.B.2.d. of the MS4 Permit, plus any additional items the City feels it should include in the annual MS4 report.

#### Justification

Required under Section II.B.2.d.

#### Annual Reporting Items

1. Verification of the Posting of the City's Program Plan and Annual Reports for Public View
2. Stormwater Events with City Involvement
3. Other Public Information Mechanisms
4. Storm Drain Marking Program
5. Household Hazardous Waste Collection Program
6. Local and Regional Stormwater Management Planning

#### Goals

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##### 3.2.1 Posting of Program Plan and Annual Reports for Public View

**Responsible Staff / Position:** LeighAnne Weitzenfeld  
Water Quality Administrator

#### Description

The City will post the Program Plan and all annual reports to the City of Roanoke Stormwater Division's web page. A link will be provided in every annual report.

**Planned:** 2014 2015 2016 2017 2018

**Complete:** 2014 2015 2016

Activity Date	Name
06/30/2016	FY16 Public Information Availability Update

#### Description

The City of Roanoke posts each Annual Report under the current permit cycle, the Program Plan, and the Permit itself on its website under the Stormwater Division's webpage.

Annual Report Webpage: <http://www.roanokeva.gov/513/Stormwater-Resources>

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### 3.2.2 Stormwater Events with City Involvement

**Responsible Staff / Position:** LeighAnne Weitzenfeld  
Water Quality Administrator

#### Description

In its annual report, the City shall provide a list of all stormwater-related public events that it has been involved with through participation, sponsorship, or other involvement. The City must be involved in a minimum of 4 events per year.

**Planned:** 2014 2015 2016 2017 2018

**Complete:** 2014 2015 2016

<b>Activity Date</b>	<b>Name</b>
06/30/2016	FY16 City Stormwater Events

#### Description

The City's MCM#2 Public Participation description and events has outgrown this description space. As such, please see the attached document titled, "MCM2 FY15-16 Narrative Summary below. The other attachments are in support of the specific events outlined in the narrative.

- File Attachment [CVC\\_Cleanup&EventSummaryReport\\_2015-2016.docx](#)
- File Attachment [CVC\\_CleanValleyDay2016\\_Data.xlsx](#)
- File Attachment [CVC\\_FallwaterwaysCleanup2015\\_data.xlsx](#)
- File Attachment [2016AprilFlyer.pdf](#)
- File Attachment [Recycled Regatta Stormwater Boat.jpg](#)
- File Attachment [Envision-Roanoke Final.pdf](#)
- File Attachment [Envision Roanoke Planning Agenda.docx](#)
- File Attachment [Rainbarrel Flyer\\_Final.pdf](#)
- File Attachment [MCM2 CVC Summary.pdf](#)
- File Attachment [MCM2 FY15-16 Narrative Summary.doc](#)

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### 3.2.3 Storm Drain Marking Program

**Responsible Staff / Position:** LeighAnne Weitzenfeld  
Water Quality Administrator

#### Description

The City shall provide an update on the past year's progress in the marking of storm drains. The City marks storm drains with either a spray-painted stenciled message or by placement of a stainless steel puck. Both messages communicate that the drain conveys flow to the river, and no dumping should occur.

The City of Roanoke's procedure for storm drain marking was provided in the 2011 MS4 Annual Report. All storm drain stenciling/ marking activity will follow the same protocols in subsequent years, unless this section is revised in future reports or Program Plan updates.

**Planned:** 2014 2015 2016 2017 2018

**Complete:** 2014 2015 2016

<b>Activity Date</b>	<b>Name</b>
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**Description**

During the past permit year, Clean Valley Council organized storm drain marking events. Clean Valley Council took groups (typically from a local school) and, using a stencil and spray paint, would mark a storm drain with the words "Dump No Waste, Drains to River."

Clean Valley Council organized the marking of 52 new storm drains within City limits. These were in the areas of Patterson Avenue, 12th & 13th area; Brandon Ave., Mt. Vernon, Sherwood; and 10th Street, Loudon Ave.

File Attachment [Stormdrain Stenciling.pdf](#)

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**3.2.4 Household Hazardous Waste Collection Program**

**Responsible Staff / Position:** LeighAnne Weitzenfeld  
Water Quality Administrator

**Description**

Beginning in June 2009, the Roanoke Valley Resource Authority (RVRA) fully absorbed the expense of operating the regional HHW events. As such there is no longer a cooperative funding requirement of member jurisdictions. Additionally, this change has allowed for an increase in event frequency from just 3 times per year, to once each month.

All HHW events are operated by the licensed hazardous waste management firm Clean Harbors using only their own properly trained and certified staff. RVRA and City staff act almost exclusively as event promoters and facilitators.

Documentation of this activity will be a report from the Roanoke Valley Regional Authority showing participation by area residents, amounts of wastes collected, and their related program expenditures.

**Planned:** 2014 2015 2016 2017 2018

**Complete:** 2014 2015 2016

Activity Date	Name
06/30/2016	FY16 Household Hazardous Waste Events

**Description**

As in past permit years, the Roanoke Valley Resource Authority, of which the City is a member, holds regular household hazardous waste collection events for citizens. They collect used oil, aerosol cans, latex paint, vehicle batteries, and antifreeze on a daily basis, and collect most other types of household hazardous waste on the 3rd Saturday of every month.

Attached is a worksheet detailing the citizen participation and amount of wastes collected.

File Attachment [HHW FY ExpReport\\_1 FY15-16.pdf](#)

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**3.2.5 Local and Regional Stormwater Management Planning**

**Responsible Staff / Position:** LeighAnne Weitzenfeld  
Water Quality Administrator

**Description**

The City will provide a description of actions where public input is a component of our local and regional stormwater management planning.

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**Planned:** 2014 2015 2016 2017 2018

**Complete:** 2014 2015 2016

**Activity Date**                      **Name**

06/30/2016                      FY16 Regional Stormwater Management Planning

**Description**

In the past permit year, City staff have been involved with other area municipalities and organizations in different forms of stormwater management planning.

The City continued its long history of coordinating with Roanoke County and the Town of Vinton to collaboratively tackle shared and/or mutually important stormwater issues. Preliminary discussions have begun in an attempt to create a regional branding approach to how we might best market our stormwater education and outreach efforts. The purpose is to provide a unified message during a coordinated time frame to educate local communities in the Roanoke River Watershed. More discussions will be needed to find an approach that works for each municipality.

Management strategies and interpretation of permit provisions are often discussed in these meetings. This close coordination helps all three localities ensure their methods of stormwater management and permit compliance are the best they can be, are reasonably aligned and most appropriate and accurate in meeting both permit conditions as well as common goals for regional water quality.

At this point the bulk of our local and regional management planning efforts are being incorporated into the TMDL Action Plan and coordinating our efforts with those of our neighbors when and where possible.

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## 4 MCM#3 Illicit Discharge Detection and Elimination (IDDE)

**Responsible Staff / Position:** Christopher Blakeman  
Environmental Administrator  
(540) 853-1173

### Description

To comply with this MCM, the City must satisfy the following:

a. The operator shall maintain an accurate storm sewer system map and information table and shall update it in accordance with the schedule set out in Table 1 of this section.

(1) The storm sewer system map must show the following, at a minimum:

(a) The location of all MS4 outfalls. In cases where the outfall is located outside of the MS4 operator's legal responsibility, the operator may elect to map the known point of discharge location closest to the actual outfall. Each mapped outfall must

be given a unique identifier, which must be noted on the map; and

(b) The name and location of all waters receiving discharges from the MS4 outfalls and the associated HUC.

(2) The associated information table shall include for each outfall the following

(a) The unique identifier;

(b) The estimated MS4 acreage served;

(c) The name of the receiving surface water and indication as to whether the receiving water is listed as impaired in the Virginia 2010 303(d)/305(b) Water Quality Assessment Integrated Report; and

(d) The name of any applicable TMDL or TMDLs.

(3) Within 48 months of coverage under this state permit, the operator shall have a complete and updated storm sewer system map and information table that includes all MS4 outfalls located within the boundaries identified as "urbanized" areas in the 2010 Decennial Census and shall submit the updated information table as an appendix to the annual report.

(4) The operator shall maintain a copy of the current storm sewer system map and outfall information table for review upon request by the public or by the department.

(5) The operator shall continue to identify other points of discharge. The operator shall notify in writing the downstream MS4 of any known physical interconnection.

b. The operator shall effectively prohibit, through ordinance or other legal mechanism, nonstormwater discharges into the storm sewer system to the extent allowable under federal, state, or local law, regulation, or ordinance. Categories of nonstormwater discharges or flows (i.e., illicit discharges) identified in 4VAC50-60-400 D 2 c (3) must be addressed only if they are identified by the operator as significant contributors of pollutants to the small MS4. Flows that have been identified in writing by the Department of Environmental Quality as de minimis discharges are not significant sources of pollutants to surface water and do not require a VPDES permit.

c. The operator shall develop, implement, and update, when appropriate, written procedures to detect, identify, and address unauthorized nonstormwater discharges, including illegal dumping, to the small MS4. These procedures shall include:

(1) Written dry weather field screening methodologies to detect and eliminate illicit discharges to the MS4 that include field observations and field screening monitoring and that provide:

(a) A prioritized schedule of field screening activities determined by the

operator based on such criteria as age of the infrastructure, land use, historical illegal discharges, dumping or cross connections.

(b) The minimum number of field screening activities the operator shall complete annually to be determined as follows: (i) if the total number of outfalls in the small MS4 is less than 50, all outfalls shall be screened annually or (ii) if the small MS4 has 50 or more total outfalls, a minimum of 50 outfalls shall be screened annually.

(c) Methodologies to collect the general information such as time since the last rain, the quantity of the last rain, site descriptions (e.g., conveyance type and dominant watershed land uses), estimated discharge rate (e.g., width of water surface, approximate depth of water, approximate flow velocity, and flow rate), and visual observations (e.g., odor, color, clarity, floatables, deposits or stains, vegetation condition, structural condition, and biology);

(d) A time frame upon which to conduct an investigation or investigations to identify and locate the source of any observed continuous or intermittent nonstormwater discharge prioritized as follows: (i) illicit discharges suspected of being sanitary sewage or significantly contaminated must be investigated first and (ii) investigations of illicit discharges suspected of being less hazardous to human health and safety such as noncontact cooling water or wash water may be delayed until after all suspected sanitary sewage or significantly contaminated discharges have been investigated, eliminated, or identified. Discharges authorized under a separate VPDES or state permit require no further action under this permit.

(e) Methodologies to determine the source of all illicit discharges shall be conducted. If an illicit discharge is found, but within six months of the beginning of the investigation neither the source nor the same nonstormwater discharge has been identified, then the operator shall document such in accordance with Section II B 3 f. If the observed discharge is intermittent, the operator must document that a minimum of three separate investigations were made in an attempt to observe the discharge when it was flowing. If these attempts are unsuccessful, the operator shall document such in accordance with Section II B 3 f.

(f) Mechanisms to eliminate identified sources of illicit discharges including a description of the policies and procedures for when and how to use legal authorities;

(g) Methods for conducting a follow-up investigation in order to verify that the discharge has been eliminated.

(h) A mechanism to track all investigations to document:

(i) the date or dates that the illicit discharge was observed and reported;

(ii) the results of the investigation;

(iii) any follow-up to the investigation;

(iv) resolution of the investigation; and

(v) the date that the investigation was closed.

d. The operator shall promote, publicize, and facilitate public reporting of illicit discharges into or from MS4s. The operator shall conduct inspections in response to complaints and follow-up inspections as needed to ensure that corrective measures have been implemented by the responsible party.

e. The MS4 Program Plan shall include all procedures developed by the operator to detect, identify, and address nonstormwater discharges to the MS4 in accordance with the schedule in Table 1 in this section. In the interim, the operator shall continue to implement the program as included as part of the registration statement until the program is updated to meet the conditions of this permit. Operators, who have not previously held MS4 permit coverage, shall implement this program in accordance with the schedule provided with the completed registration statement.

f. Annual reporting requirements. Each annual report shall include:

(1) A list of any written notifications of physical interconnection given by the operator to other MS4s;

(2) The total number of outfalls screened during the reporting period, the screening results, and detail of any follow-up actions necessitated by the screening results; and

(3) A summary of each investigation conducted by the operator of any suspected illicit discharge. The summary must include:

- (i) the date that the suspected discharge was observed, reported, or both;
- (ii) how the investigation was resolved, including any follow-up, and
- (iii) resolution of the investigation and the date the investigation was closed.

## Best Management Practices

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### 4.1 MS4 Program Plan Requirements

**Responsible Staff / Position:** Christopher Blakeman  
Environmental Administrator  
(540) 853-1173

**Required** Yes

#### Description

A description of the measures, procedures, and processes used to comply with the Section II.B.3. of the MS4 Permit. For reporting purposes reference may be made to materials which can be found elsewhere and where such materials are available to the public either freely or upon request.

#### Justification

Required under Section II.B.3.

### Annual Reporting Items

1. Mapping of Storm Sewer System in GIS
2. Verification of Public Access to GIS Maps
3. Dry Weather Outfall Screening Methodologies and Standard Operating Procedures
4. Official IDDE Ordinance
5. Standard Operating Procedures for IDDE Enforcement
6. Promotion of Public Illicit Discharge Reporting

### Goals

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#### 4.1.1 Mapping of Storm Sewer System in GIS

**Responsible Staff / Position:** Christopher Blakeman  
Environmental Administrator  
(540) 853-1173

#### Description

The city has developed a storm sewer system map using Global Positioning System (GPS) technology that readily identifies MS4 features, down-/up-gradient pipe orientation, termination points and outfalls. This system will be continually updated until it conforms to the requirements set forth in Section II.B.3.a. of the permit. Regular updates will be provided as the update continues.

**Planned:** 2014 2015 2016 2017 2018

**Complete:** 2014 2015 2016

Activity Date	Name
06/30/2016	FY16 GIS Update

#### Description

The City has developed and maintained a robust GIS map of our MS4 for over a decade. The system is continually updated using as-built drawings for new construction, as well revisions and amendments based on watershed asset inventories, and other field reconnaissance and investigative findings.

Responsibility for the operation and maintenance of the Stormwater GIS map rests with the Stormwater Division GIS technician and with data collected by the CCTV field crews in the Maintenance Department. The Stormwater Division, in cooperation with the City's Information Technology Division maintains the data.

In the spring of 2015 our Stormwater Division began a collaborative project with the Virginia Tech Dept. of Civil and Environmental Engineering to develop and implement a plan for revising our MS4 GIS map so as to accurately reflect the true drainage basin of our storm pipe network. Using field GPS collection, coupled with real time field surveys and CCTV camera investigations, we are updating the MS4 asset inventory to ensure that we meet all of

the requirements of this permit section.

Asset inventories have been completed for Lick Run (FY15); Tinker Creek, Carvin Creek and Glade Creek (FY16). Trout Run and Peters Creek (FY17).

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#### 4.1.2 Public Access to GIS Maps

**Responsible Staff / Position:** Christopher Blakeman  
Environmental Administrator  
(540) 853-1173

##### Description

The City intends to post the most current version of its GIS representation of the City's MS4 components on its website for public viewing/use. The City will provide a link and instruction to access this information.

**Planned:** 2014 2015 2016 2017 2018

**Complete:** 2014 2015 2016

Activity Date	Name
06/30/2016	Public Access Verification

##### Description

As in previous years, the City maintains public access to its GIS data via its website. The GIS data may be viewed by either clicking the below link or visiting the City's homepage at [roanokeva.gov](http://roanokeva.gov) and clicking on "GIS Maps and Real Estate" link, and then "Real Estate GIS" on the following page.

<http://gisre.roanokeva.gov/>

The stormwater layer may be turned on using the "Map Layers" tab in the left window pane. In this tab, the layer is under the "Utilities Layers" heading. If the stormwater layer is grayed-out and locked, zoom the map in further. It is locked in the off position when zoomed out too far.

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#### 4.1.3 Dry Weather Outfall Screening Methodologies and Standard Operating Procedures

**Responsible Staff / Position:** Christopher Blakeman  
Environmental Administrator  
(540) 853-1173

##### Description

The City of Roanoke will present its written dry weather field screening methodologies/standard operating procedures, and highlight any changes that have been made during the last year.

**Planned:** 2014 2015 2016 2017 2018

**Complete:** 2014 2015 2016

Activity Date	Name
06/30/2016	Outfall Survey Update

##### Description

No substantive changes have occurred to our outfall surveillance SOPs in terms of what issues are covered and the completeness of the process; however, we have converted to an all electronic format. The SOP document has not yet been revised as we are still testing various options for electronically capturing the data and utilizing GIS & GPS functions in the field.

#### 4.1.4 Official IDDE Ordinance

**Responsible Staff / Position:** Christopher Blakeman  
Environmental Administrator  
(540) 853-1173

##### Description

The City will maintain and periodically review IDDE ordinance for permit compliance and operational effectiveness. Any changes will be highlighted as appropriate.

**Planned:** 2014 2015 2016 2017 2018

**Complete:** 2014 2015 2016

Activity Date	Name
06/30/2016	FY16 IDDE Ordinance Review

##### Description

No changes have been made to this ordinance.

It is available for viewing

at: [https://www.municode.com/library/va/roanoke/codes/code\\_of\\_ordinances?nodeId=COCI\\_CH11.3STDIRE](https://www.municode.com/library/va/roanoke/codes/code_of_ordinances?nodeId=COCI_CH11.3STDIRE)

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#### 4.1.5 Standard Operating Procedures for IDDE Enforcement

**Responsible Staff / Position:** Christopher Blakeman  
Environmental Administrator  
(540) 853-1173

##### Description

The City has established Standard Operating Procedures (SOPs) for response and enforcement of IDDE ordinance, and process for tracking violations and actions taken.

Documentation of this goal was provided in the City of Roanoke's 2011 MS4 Annual Report. All IDDE investigation & enforcement activity will follow the same protocols in subsequent years, unless this section is revised in future reports or Program Plan updates.

**Planned:** 2014 2015 2016 2017 2018

**Complete:** 2014 2015 2016

Activity Date	Name
06/30/2016	FY16 IDDE Enforcement SOP

##### Description

The City continues to perform illicit discharge investigations under the same SOP as was provided in the 2011 report. No changes to the SOP have occurred during the past permit year. A Copy of the City's SOP is attached here.

File Attachment [IDDE SOP Document.pdf](#)

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#### 4.1.6 Promotion of Public Illicit Discharge Reporting

**Responsible Staff / Position:** Christopher Blakeman  
Environmental Administrator  
(540) 853-1173

#### Description

The City encourages the public to report any illicit discharges to the storm sewer system. City staff will then follow up on these reports for investigation and elimination.

**Planned:** 2014 2015 2016 2017 2018

**Complete:** 2014 2015 2016

<b>Activity Date</b>	<b>Name</b>
06/30/2016	Promotion of Public ID Reporting

#### Description

Information for contacting the Office of Environmental Management (the City's stormwater pollution response designees), and/or the City's Stormwater Division, is included in every piece of stormwater literature. Designated staff instruct the public to report any suspect or illicit discharges using the phrase "If you see something, say something."

In addition to allowing the public to report these issues by phone or email, staff in the Office of Environmental Management have also designed a page on their website to encourage the public to report pollution events. It can be viewed by going to the main page for the City of Roanoke Office of Environmental Management and then clicking on "Report Environmental Issues."

<http://www.roanokeva.gov/382/Environmental-Management>. The wording on this page is designed to encourage the public to report anything that may be considered a pollution event, including stormwater pollution events.

In 2015 the City has implemented a CRM or Citizen Request Management system. This system is accessed by internet, phone, and a mobile device app. It allows anyone to report issues and concerns, including GPS location, and the system then routes the issue to preassigned responsible work units at the City. Environmental Mgmt. is set up to receive all pollution complaints. This system further tracks issues through to closure and maintains basic data regarding the issues.

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## 4.2 Annual Reporting Requirements

**Responsible Staff / Position:** Christopher Blakeman  
Environmental Administrator  
(540) 853-1173

**Required** Yes

### Description

A report of all elements required under Section II.B.3.f. of the MS4 Permit, plus any additional items the City feels it should include in the annual MS4 report.

### Justification

Required under Section II.B.3.f.

## Annual Reporting Items

1. Interconnection Notifications Given By the City to Other MS4's
2. Outfall Inspection Records from the Previous Permit Year
3. IDDE Investigations from the Previous Permit Year

### Goals

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#### 4.2.1 Interconnection Notifications

**Responsible Staff / Position:** Christopher Blakeman  
Environmental Administrator  
(540) 853-1173

### Description

The City shall annually provide a list of all interconnection notifications given by the City to another MS4.

**Planned:** 2014 2015 2016 2017 2018

**Complete:** 2014 2015 2016

Activity Date	Name
06/30/2016	FY16 Interconnection Notifications

### Description

In 2008, the City of Roanoke notified both the Town of Vinton and Roanoke County that our storm sewer system is physically interconnected and discharging to their system. No other interconnection notifications have been issued since that time.

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#### 4.2.2 Outfall Inspections

**Responsible Staff / Position:** Christopher Blakeman  
Environmental Administrator  
(540) 853-1173

### Description

The City will provide documentation of the requisite dry weather screenings, which will include the number of outfalls surveyed, their TMDL water body, and the findings of the surveyor(s). Copies of field data sheets and/or related notes will be presented as documentation. A minimum of 50 outfalls will be inspected annually.

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**Planned:** 2014 2015 2016 2017 2018

**Complete:** 2014 2015 2016

<b>Activity Date</b>	<b>Name</b>
06/30/2016	FY16 Outfall Inspections

**Description**

During this reporting year we performed reconnaissance on a total of 61 outfalls. The watersheds whose outfalls were surveyed include Peters Creek, Barnhardt Creek, and Murdock Creek. This year also saw our survey execution transition from the historic use of hard copy paper forms to the real-time completion of electronic forms in the field using tablet PCs. For this reason about 30% of the forms submitted here, are scanned copies of the paper files, while the remainder are combined multi-site PDF files. Note each scanned form is two pages in length, and the electronic forms are each three pages in length.

We found 3 suspect outfalls where dry weather flow was the primary concern.

- 1) Peters Creek OF# 400822: this flow was ultimately traced back to a spring box located on private residential property and was deemed innocuous.
2. Peters Creek OF# 400826: this flow was subsequently determined to be the result of fire hydrant flushing on a upgradient street.
3. Tinker Creek OF#400269: this site was referred as a complaint of orange red flow. This flow was ultimately traced back to a spring, rich in iron bacteria and located at the Blue Stone Block quarry facility on Eastern Ave. in Roanoke. This facility operates under an Industrial VPDES Permit and this condition is also noted related documentation associated with that permit.

File Attachment [OF Surveys\\_Scanned\\_04-27-16\\_Clean 16.pdf](#)

File Attachment [OF Surveys\\_Scanned\\_04-27-16\\_Suspect2.pdf](#)

File Attachment [OF Recon\\_Peters Combined 23.pdf](#)

File Attachment [OF Recon Murdock Combined 8.pdf](#)

File Attachment [OF Recon\\_Barnhardt Combined 12.pdf](#)

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**4.2.3 IDDE Investigations**

**Responsible Staff / Position:** Christopher Blakeman  
Environmental Administrator  
(540) 853-1173

**Description**

The City of Roanoke has implemented the IDDE SOPs for illicit discharge response and ordinance enforcement actions.

Documentation of this goal will be annual reporting of all IDDE ordinance violations and actions taken.

**Planned:** 2014 2015 2016 2017 2018

**Complete:** 2014 2015 2016

<b>Activity Date</b>	<b>Name</b>
06/30/2016	FY16 IDDE Investigations

**Description**

In the past permit year, the City investigated 19 reported illicit discharges. The City's IDDE log is attached, which contains information on location, nature, and actions taken against each illicit discharge. Please note that the file is arranged by calendar year, so there are IDDE investigations from 2015 and 2016 combined in the attached worksheet.

One investigation SWPC# 16-006 was discovered during outfall reconnaissance on Barnhardt Creek. Issue has been flagged for dye test &/or sampling, but we've not been able to find the same recurring discharge or the

residents home. Issue therefore remains open.

File Attachment [IDDE Log 2015-16.xls](#)

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## 5 MCM#4 Construction Site Stormwater Runoff Control

**Responsible Staff / Position:** George Nevergold  
Dev. Review Coordinator  
(540) 853-6501

### Description

a. Applicable oversight requirements. The operator shall utilize its legal authority, such as ordinances, permits, orders, specific contract language, and interjurisdictional agreements, to address discharges entering the MS4 from the following land-disturbing activities:

- (1) Land-disturbing activities as defined in § 10.1-560 of the Code of Virginia that result in the disturbance of 10,000 square feet or greater;
- (2) Land-disturbing activities in Tidewater jurisdictions, as defined in § 10.1-2101 of the Code of Virginia, that disturb 2,500 square feet or greater and are located in areas designated as Resource Protection Areas (RPA), Resource Management Areas (RMA) or Intensely Developed Acres (IDA), pursuant to the Chesapeake Bay Preservation Area Designation and Management Regulations adopted pursuant to the Chesapeake Bay Preservation Act;
- (3) Land-disturbing activities disturbing less than the minimum land disturbance identified in subdivision (1) or (2) above for which a local ordinance requires that an erosion and sediment control plan be developed; and
- (4) Land-disturbing activities on individual residential lots or sections of residential developments being developed by different property owners and where the total land disturbance of the residential development is 10,000 square feet or greater. The operator may utilize an agreement in lieu of a plan as provided in § 10.1-563 of the Code of Virginia for this category of land disturbances.

b. Required plan approval prior to commencement of the land disturbing activity.

The operator shall require that land disturbance not begin until an erosion and sediment control plan or an agreement in lieu of a plan as provided in § 10.1-563 is approved by a VESCP authority in accordance with the Erosion and Sediment Control Act (§ 10.1-560 et seq.). The plan shall be:

- (1) Compliant with the minimum standards identified in 4VAC-50-30-40 of the Erosion and Sediment Control Regulations; or
- (2) Compliant with department-approved annual standards and specifications. Where applicable, the plan shall be consistent with any additional or more stringent, or both, erosion and sediment control requirements established by state regulation or local ordinance.

c. Compliance and enforcement.

- (1) The operator shall inspect land-disturbing activities for compliance with an approved erosion and sediment control plan or agreement in lieu of a plan in accordance with the minimum standards identified in 4VAC50-30-40 or with department-approved annual standards and specifications.
  - (2) The operator shall implement an inspection schedule for land-disturbing activities identified in Section II B 4 a as follows:
    - (a) Upon initial installation of erosion and sediment controls;
    - (b) At least once during every two-week period;
    - (c) Within 48 hours of any runoff-producing storm event; and
    - (d) Upon completion of the project and prior to the release of any applicable performance bonds. Where an operator establishes an alternative inspection program as provided for in 4VAC50-30-60 B 2, the written schedule shall be implemented in lieu of Section II B 4 c (2) and the written plan shall be included in the MS4 Program Plan.
  - (3) Operator inspections shall be conducted by personnel who hold a certificate of competence in accordance with 4VAC-50-50-40. Documentation of certification shall be made available upon request by the VESCP authority or other regulatory agency.
  - (4) The operator shall promote to the public a mechanism for receipt of complaints
-

regarding regulated land-disturbing activities and shall follow up on any complaints regarding potential water quality and compliance issues.

(5) The operator shall utilize its legal authority to require compliance with the approved plan where an inspection finds that the approved plan is not being properly implemented.

(6) The operator shall utilize, as appropriate, its legal authority to require changes to an approved plan when an inspection finds that the approved plan is inadequate to effectively control soil erosion, sediment deposition, and runoff to prevent the unreasonable degradation of properties, stream channels, waters, and other natural resources.

(7) The operator shall require implementation of appropriate controls to prevent nonstormwater discharges to the MS4, such as wastewater, concrete washout, fuels and oils, and other illicit discharges identified during land-disturbing activity inspections of the MS4. The discharge of nonstormwater discharges other than those identified in 4VAC50-60-1220 through the MS4 is not authorized by this state permit.

(8) The operator may develop and implement a progressive compliance and enforcement strategy provided that such strategy is included in the MS4 Program Plan and is consistent with 4VAC50-30.

d. Regulatory coordination. The operator shall implement enforceable procedures to require that large construction activities as defined in 4VAC50-60-10 and small construction activities as defined in 4VAC50-60-10, including municipal construction activities, secure necessary state permit authorizations from the department to discharge stormwater.

e. MS4 Program requirements. The operator's MS4 Program Plan shall include:

(1) A description of the legal authorities utilized to ensure compliance with the minimum control measure in Section II related to construction site stormwater runoff control such as ordinances, permits, orders, specific contract language, and interjurisdictional agreements;

(2) Written plan review procedures and all associated documents utilized in plan review;

(3) For the MS4 operators who obtain department-approved standards and specifications, a copy of the current standards and specifications;

(4) Written inspection procedures and all associated documents utilized during inspection including the inspection schedule;

(5) Written procedures for compliance and enforcement, including a progressive compliance and enforcement strategy, where appropriate; and

(6) The roles and responsibilities of each of the operator's departments, divisions, or subdivisions in implementing the minimum control measure in Section II related to construction site stormwater runoff control. If the operator utilizes another entity to implement portions of the MS4 Program Plan, a copy of the written agreement must be retained in the MS4 Program Plan. The description of each party's roles and responsibilities, including any written agreements with third parties, shall be updated as necessary. Reference may be made to any listed requirements in this subdivision provided the location of where the reference material can be found is included and the reference material is made available to the public upon request.

f. Reporting requirements. The operator shall track regulated land-disturbing activities and submit the following information in all annual reports:

(1) Total number of regulated land-disturbing activities;

(2) Total number of acres disturbed;

(3) Total number of inspections conducted; and

(4) A summary of the enforcement actions taken, including the total number and type of enforcement actions taken during the reporting period.

## Best Management Practices

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### 5.1 MS4 Program Plan Requirements

**Responsible Staff / Position:** George Nevergold  
Dev. Review Coordinator  
(540) 853-6501

**Required** Yes

#### Description

A description of the measures, procedures, and processes used to comply with the Construction Site SW Mgmt. regulations and this section of the MS4 Permit. For reporting purposes reference may be made to materials which can be found elsewhere and where such materials are available to the public either freely or upon request.

#### Justification

Required under MS4 permit Section II B 4 e.

### Education Program / Public Outreach

The various elements that the City of Roanoke uses to comply are communicated to all permit applicants and are available to others via the City's website. Members of the development community were included in the City's development of these procedures and their comments were considered when drafting and refining versions thereof.

### Annual Reporting Items

References and links to all such elements.

## Goals

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### 5.1.1 Legal Authorities Descriptions

**Responsible Staff / Position:** George Nevergold  
Dev. Review Coordinator  
(540) 853-6501

#### Description

Documentation of the legal authorities used to comply with the minimum control measure related to construction site stormwater runoff control such as ordinances, permits, orders, etc.

**Planned:** 2014 2015 2016 2017 2018

**Complete:** 2014 2015 2016

Activity Date	Name	Description
None		

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### 5.1.2 Written Plan Review Procedures

**Responsible Staff / Position:** George Nevergold  
Dev. Review Coordinator  
(540) 853-6501

#### Description

A copy of the procedures and policies used by the City of Roanoke when performing development plan reviews.

**Planned:** 2014 2015 2016

**Complete:** 2014 2015 2016

<b>Activity Date</b>	<b>Name</b>
06/30/2016	FY15-16 Plan Review

**Description**

Erosion and Sediment Control and Stormwater Pollution Prevention Plans (SWPPP) are generally reviewed in 12 business days using a checklist that incorporates City requirements as well as state requirements. Our checklists were updated in FY14-15 in order to incorporate the new SWPPP requirements.

Due to an increase in development activity, the department's goal of facilitating development, new regulations and additional documentation to review our plan review times have increased. The VSMP funding and staffing plan identified this as a likely issue that would arise as part of the implementation of the VSMP and recommended that an additional plan reviewer would be required so the desired review time could be accommodated.

The City of Roanoke's plan review process was updated to include VSMP requirements and can be found in Chapter 3 of the Design Manual (see attached link).

No additional changes were made in FY15-16.

File Attachment [14 - '15 Chapter 3 Design Manual.pdf](#)

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**5.1.3 Standards and Specifications**

**Responsible Staff / Position:** George Nevergold  
Dev. Review Coordinator  
(540) 853-6501

**Description**

A copy of the current standards and specifications for construction site stormwater runoff control.

**Planned:** 2014 2015 2016

**Complete:** 2014 2015 2016

<b>Activity Date</b>	<b>Name</b>	<b>Description</b>
None		

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**5.1.4 Written Inspection Procedures**

**Responsible Staff / Position:** George Nevergold  
Dev. Review Coordinator  
(540) 853-6501

**Description**

A copy of the site inspection procedures and all associated documents utilized during inspections, including the inspection schedule.

**Planned:** 2014 2015 2016

**Complete:** 2014 2015 2016

<b>Activity Date</b>	<b>Name</b>
06/30/2016	FY15-16 Inspection Procedures

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## Description

Erosion and Sediment Control Inspections and SWPPP inspections are performed at a rate in accordance with the State requirements of once per every two weeks, including rainfall events within 48 hours for E&S inspection and periodic SWPPP inspections. Generally we do SWPPP inspections every two weeks along with the E&S inspections.

The City of Roanoke's design manual, Chapter 16 sets forth guidance on inspection procedures (see attachment).  
File Attachment [Chapter 16 Design Manual.pdf](#)

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### 5.1.5 Written Compliance and Enforcement Procedures

**Responsible Staff / Position:** George Nevergold  
Dev. Review Coordinator  
(540) 853-6501

## Description

A copy of the progressive compliance and enforcement procedures and strategies.

**Planned:** 2014 2015 2016

**Complete:** 2014 2015 2016

Activity Date	Name	Description
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None

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### 5.1.6 Roles and Responsibilities

**Responsible Staff / Position:** George Nevergold  
Dev. Review Coordinator  
(540) 853-6501

## Description

A description of the roles and responsibilities of each Department, Division, and/or work unit and personnel used in implementing the programs associated with this Minimum Control Measure, to include any that may be met by third parties.

**Planned:** 2014 2015 2016

**Complete:** 2014 2015 2016

Activity Date	Name
06/30/2016	'15 - '16 Staffing

## Description

- There are 7 staff members responsible for E&S and VSMP compliance within the Department of Planning, Building and Development:
    - **George Nevergold** – Development Review Coordinator – VSMP Administrator for the City of Roanoke: DUAL Combined Administrator Cert # DCA 0222, Exp. 6/15/2018.
    - **Kenneth Richardson** - Development Review Engineer: E&S Combined Administrator Cert #775, Exp. 05/31/2017, SWM Plan Reviewer Cert #SWPR0127, Exp. 06/05/2018.
    - **Adrian Gilbert** – Development Review Engineer: DUAL Combined Administrator Cert # DCA 0231, Exp. 3/04/2019.
    - **Winston Corbett** – Development Inspector: Dual Inspector #DIN0339, Exp.12/15/2017.
  - **Mark Bowles** – Development Inspector: Dual Inspector #DIN0339, Exp.10/06/2018.
  - **Robert Eakin** - Development Inspector: Erosion and Sediment Control Inspector #3810 – Exp. 11/30/2019; Provisionally Certified SWM Inspector (10/29/2015).
  - **Karl Kleinhenz** – Planner II: Provisionally Certified E&S Control Inspector (10/30/2014); Provisionally Certified
-



## 5.2 Annual Reporting Requirements

**Responsible Staff / Position:** George Nevergold  
Dev. Review Coordinator  
(540) 853-6501

**Required** Yes

### Description

A report of all required land disturbance activity tracking elements.

### Justification

Required under permit Section II B 4 f.

## Annual Reporting Items

Land disturbance activities as noted in the Goal Activities under this BMP.

### Goals

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#### 5.2.1 Regulated LD Activities

**Responsible Staff / Position:** George Nevergold  
Dev. Review Coordinator  
(540) 853-6501

### Description

Total number of land disturbance activities and total disturbed area for each reporting year (July 1 - June 30).

**Planned:** 2014 2015 2016 2017 2018

**Complete:** 2014 2015 2016

Activity Date	Name
06/30/2016	'15 - '16 Land Disturbance Projects

### Description

A total of 41 land disturbance permits were issued for this past fiscal year with the total disturbed acreage of 42.76 acres. A record of all permitted land disturbance activities detailing the name of the activity, site address, latitude & longitude, acreage disturbed, permit approval date and owner name and address has been included as the excel files labeled: '15 – '16 LD Permits.

File Attachment ['15 - '16 LD Permits.xlsx](#)

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#### 5.2.3 Number of Inspections

**Responsible Staff / Position:** George Nevergold  
Dev. Review Coordinator  
(540) 853-6501

### Description

Total number of inspections performed during each reporting year (July 1-June 30).

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**Planned:** 2014 2015 2016 2017 2018

**Complete:** 2014 2015 2016

<b>Activity Date</b>	<b>Name</b>
06/30/2016	'15 - '16 Erosion and Sediment Control Inspections

**Description**

A total of 4414 erosion and sediment control inspections were conducted this past fiscal year. Of those 4414 inspections, 1739 (39.4%) of them were rain event inspections that are required to be performed within 48 hours after a rainfall event. A report detailing permit number, address and number of inspections per permit has been included as the pdf file labeled '15 – '16 E&S Inspections Report and a Rain Event Report is attached as well.

Additionally, 185 E&SC inspections were conducted for Single Family Residences (noted as "RFS E/S Inspections" by the City's software) A PDF report of these inspections is attached hereto.

File Attachment [E&S Inspections 15-16.pdf](#)

File Attachment [Rainfall Inspections 15-16.pdf](#)

File Attachment [SFR ESC Inspections 15-16.pdf](#)

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**5.2.4 Enforcement Summary**

**Responsible Staff / Position:** George Nevergold  
Dev. Review Coordinator  
(540) 853-6501

**Description**

A summary of all enforcement actions taken during the reporting year (July 1 - June 30), including the total number and type of action(s) taken.

**Planned:** 2014 2015 2016 2017 2018

**Complete:** 2014 2015 2016

<b>Activity Date</b>	<b>Name</b>
06/30/2016	'15 - '16 Enforcement Procedures

**Description**

Generally verbal notifications of E&S and SWPPP violations are used as a first measure. If we find this is not enough we move to a formal **Notices to Comply** and if necessary **Stop Work Orders**. Additionally we issue Stop Work orders for any land disturbance that occurs without an approved plan.

With the implementation of the new regulations in 2014, education has been a big component that ties in with inspections and enforcement. Generally contractors want to do the right thing. They just need help in understanding the regulations and guidance for how they apply to their specific projects/sites.

The City issued 2 Stop Work orders this past fiscal year. All for initiating grading work without an approved erosion and sediment control plan or land disturbance permit.

The City of Roanoke's design manual, chapter 16 (referenced above and attached) sets forth guidance on enforcement procedures.

File Attachment [Chapter 16 Design Manual.pdf](#)

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## **6 MCM#5 Post-Construction Stormwater Management in New Development and Development on Prior Developed Lands**

**Responsible Staff / Position:** George Nevergold  
Dev. Review Coordinator  
(540) 853-6501

### **Description**

a. Applicable oversight requirements. The operator shall address post-construction stormwater runoff that enters the MS4 from the following land-disturbing activities:

- (1) New development and development on prior developed lands that are defined as large construction activities or small construction activities in 4VAC50-60-10;
- (2) New development and development on prior developed lands that disturb greater than or equal to 2,500 square feet, but less than one acre, located in a Chesapeake Bay Preservation Area designated by a local government located in Tidewater, Virginia, as defined in § 10.1-2101 of the Code of Virginia; and
- (3) New development and development on prior developed lands where an applicable state regulation or local ordinance has designated a more stringent regulatory size threshold than that identified in subdivision (1) or (2) above.

b. Required design criteria for, stormwater runoff controls. The operator shall utilize legal authority, such as ordinances, permits, orders, specific contract language, and interjurisdictional agreements, to require that activities identified in Section II B 5 a address stormwater runoff in such a manner that stormwater runoff controls are designed and installed:

- (1) In accordance with the appropriate water quality and water quantity design criteria as required in Part II (4VAC50-60-40 et seq.) of 4VAC50-60;
- (2) In accordance with any additional applicable state or local design criteria required at project initiation; and
- (3) Where applicable, in accordance with any department-approved annual standards and specifications. Upon board approval of a Virginia Stormwater Management Program authority (VSMP Authority) as defined in § 10.1-603.2 of the Code of Virginia and reissuance of the Virginia Stormwater Management Program (VSMP) General Permit for Discharges of Stormwater from Construction Activities, the operator shall require that stormwater management plans are approved by the appropriate VSMP Authority prior to land disturbance. In accordance with § 10.1-603.3 M of the Code of Virginia, VSMPs shall become effective July 1, 2014, unless otherwise specified by state law or by the board.

c. Inspection, operation, and maintenance verification of stormwater management facilities.

- (1) For stormwater management facilities not owned by the MS4 operator, the following conditions apply:
  - (a) The operator shall require adequate long-term operation and maintenance by the owner of the stormwater management facility by requiring the owner to develop a recorded inspection schedule and maintenance agreement to the extent allowable under state or local law or other legal mechanism;
  - (b) The operator or his designee shall implement a schedule designed to inspect all privately owned stormwater management facilities that discharge into the MS4 at least once every five years to document that maintenance is being conducted in such a manner to ensure long-term operation in accordance with the approved designs.
  - (c) The operator shall utilize its legal authority for enforcement of maintenance responsibilities if maintenance is neglected by the owner. The operator may develop and implement a progressive compliance and enforcement strategy provided that the strategy is included in the MS4 Program Plan.
  - (d) Beginning with the issuance of this state permit, the operator may utilize strategies other than maintenance agreements such as periodic inspections, homeowner outreach and education, and other methods targeted at promoting the long-term maintenance of stormwater control measures that are designed to treat stormwater runoff solely from the individual residential lot. Within 12 months of coverage under this permit, the operator shall

develop and implement these alternative strategies and include them in the MS4 Program Plan.

(2) For stormwater management facilities owned by the MS4 operator, the following conditions apply:

(a) The operator shall provide for adequate long-term operation and maintenance of its stormwater management facilities in accordance with written inspection and maintenance procedures included in the MS4 Program Plan.

(b) The operator shall inspect these stormwater management facilities annually. The operator may choose to implement an alternative schedule to inspect these stormwater management facilities based on facility type and expected maintenance needs provided that the alternative schedule is included in the MS4 Program Plan.

(c) The operator shall conduct maintenance on its stormwater management facilities as necessary.

d. MS4 Program Plan requirements. The operator's MS4 Program Plan shall be updated in accordance with Table 1 in this section to include:

(1) A list of the applicable legal authorities such as ordinance, state and other permits, orders, specific contract language, and interjurisdictional agreements to ensure compliance with the minimum control measure in Section II related to post-construction stormwater management in new development and development on prior developed lands;

(2) Written policies and procedures utilized to ensure that stormwater management facilities are designed and installed in accordance with Section II B 5 b;

(3) Written inspection policies and procedures utilized in conducting inspections;

(4) Written procedures for inspection, compliance and enforcement to ensure maintenance is conducted on private stormwater facilities to ensure long-term operation in accordance with approved design;

(5) Written procedures for inspection and maintenance of operator-owned stormwater management facilities;

(6) The roles and responsibilities of each of the operator's departments, divisions, or subdivisions in implementing the minimum control measure in Section II related to post-construction stormwater management in new development and development on prior developed lands. If the operator utilizes another entity to implement portions of the MS4 Program Plan, a copy of the written agreement must be retained in the MS4 Program Plan. Roles and responsibilities shall be updated as necessary.

e. Stormwater management facility tracking and reporting requirements. The operator shall maintain an updated electronic database of all known operator-owned and privately-owned stormwater management facilities that discharge into the MS4. The database shall include the following:

(1) The stormwater management facility type;

(2) A general description of the facility's location, including the address or latitude and longitude; (3) The acres treated by the facility, including total acres, as well as the breakdown of pervious and impervious acres;

(4) The date the facility was brought online (MMIYYYY). If the date is not known, the operator shall use June 30, 2005, as the date brought online for all previously existing stormwater management facilities;

(5) The sixth order hydrologic unit code (HUC) in which the stormwater management facility is located;

(6) The name of any impaired water segments within each HUC listed in the 2010 § 305(b)/303(d) Water Quality Assessment Integrated Report to which the stormwater management facility discharges;

(7) Whether the stormwater management facility is operator-owned or privately-owned;

(8) Whether a maintenance agreement exists if the stormwater management facility is privately owned; and

(9) The date of the operator's most recent inspection of the stormwater management facility. In addition, the operator shall annually track and report the total number of inspections completed and, when applicable, the number of enforcement actions taken to ensure long-term maintenance.

The operator shall submit an electronic database or spreadsheet of all stormwater management facilities brought online during each reporting year with the appropriate

annual report. Upon such time as the department provides the operators' access to a statewide web- based reporting electronic database or spreadsheet, the operator shall utilize such database to complete the pertinent reporting requirements of this state permit.

## Best Management Practices

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### 6.1 MS4 Program Plan Requirements

**Responsible Staff / Position:** George Nevergold  
Dev. Review Coordinator  
(540) 853-6501

**Required** Yes

#### Description

A description of the measures, procedures, and processes used to comply with the Post-Construction SW Mgmt. regulations and this section of the MS4 Permit. For reporting purposes reference may be made to materials which can be found elsewhere and where such materials are available to the public either freely or upon request.

#### Justification

Required under Section II B 5 d of the MS4 Permit.

### Education Program / Public Outreach

The various elements that the City of Roanoke uses to comply are communicated to all permit applicants and are available to others via the City's website. Members of the development community were included in the City's development of these procedures and their comments were considered when drafting and refining versions thereof.

### Annual Reporting Items

References and links to all such documentation.

## Goals

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### 6.1.1 Legal Authorities Descriptions

**Responsible Staff / Position:** George Nevergold  
Dev. Review Coordinator  
(540) 853-6501

#### Description

Documentation of the legal authorities used to comply with the minimum control measure related to post-construction stormwater management such as ordinances, permits, orders, etc.

Reference links are updated in '15 - '16 Ordinance/Design Manual.

**Planned:** 2014 2016

**Complete:** 2014 2016

Activity Date	Name
06/30/2016	'15 - '16 Ordinance/Design Manual

#### Description

The City of Roanoke has a Stormwater Management Ordinance (SWM) and a SWM Design Manual. These ordinances give the city the legal authority to SWM requirements on new development as well as require maintenance of SWM facilities after construction is complete.

On May 19, 2014 the City of Roanoke adopted a new SWM Ordinance with an effective date of July 1, 2014. The new ordinance was approved by the Water Control Board as meeting the requirements to run a VSMP. Access to this document is available through the Planning Department webpage: <http://roanokeva.gov/1065/Stormwater-Ordinance>

The City of Roanoke utilizes a design manual to ensure engineering standards and specifications are utilized for the

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design of new SWM features associated with development as well as documenting maintenance responsibilities for those facilities. The SWM Design Manual is also available on the Planning Department webpage:  
<http://roanokeva.gov/1065/Stormwater-Ordinance>

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**6.1.2 Design and Installation Assurance**

**Responsible Staff / Position:** George Nevergold  
 Dev. Review Coordinator  
 (540) 853-6501

**Description**

The written policies and procedures used to ensure that stormwater management facilities are designed and installed in accordance with MS4 Permit Section II B 5 b.

Unless changed in subsequent years, these are reported in the 2014 annual report only.

**Planned:** 2014 2016

**Complete:** 2014 2016

Activity Date	Name
06/30/2016	'15 - '16 Assurances

**Description**

The assurance of proper design of SWM facilities is addressed in “Sec. 11.6-301.(a) - Design manual.” of the City’s SWM Ordinance which states that SWM Design Manual shall be used for the proper implementation of the Stormwater Management Chapter.

The assurance of proper installation is handled through “Sec. 11.6-402. - As-built plans” of the City of Roanoke’s SWM Ordinance which requires that as-built plans be submitted in order to verify that the system was installed per the approved plans. Additionally, “Sec. 11.6-603 - Enforcement, holds on certificates of occupancy” indicates that certificates of occupancies shall not be issued until the SWM facilities have been installed in accordance with the approved SWM Plan.

Lastly, “Sec. 11.6-800 - Performance bond” allows the City of Roanoke to require a performance security in order to ensure the proper installation of the approved SWM practices.

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**6.1.3 Written Inspection Procedures**

**Responsible Staff / Position:** George Nevergold  
 Dev. Review Coordinator  
 (540) 853-6501

**Description**

A copy of the inspection policies, procedures and all associated documents utilized during inspections of both private and operator owned SW facilities.

Unless changed in subsequent years, these are reported in the 2014 annual report only.

**Planned:** 2014

**Complete:** 2014

Activity Date	Name	Description
None		

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#### 6.1.4 Roles and Responsibilities

**Responsible Staff / Position:** George Nevergold  
Dev. Review Coordinator  
(540) 853-6501

#### Description

A description of the roles and responsibilities of each Department, Division, and/or work unit and personnel used in implementing the programs associated with this Minimum Control Measure, to include any that may be met by third parties.

**Planned:** 2014 2015 2016

**Complete:** 2014 2015 2016

<b>Activity Date</b>	<b>Name</b>
06/30/2016	'15 - '16 Staffing

#### Description

There are 7 staff members responsible for E&S and VSMP compliance within the Department of Planning, Building and Development:

**George Nevergold** – Development Review Coordinator – VSMP Administrator for the City of Roanoke: DUAL Combined Administrator Cert # DCA 0222, Exp. 6/15/2018.

**Kenneth Richardson** - Development Review Engineer: E&S Combined Administrator Cert #775, Exp. 05/31/2017, SWM Plan Reviewer Cert #SWPR0127, Exp. 06/05/2018.

**Adrian Gilbert** – Development Review Engineer: DUAL Combined Administrator Cert # DCA 0231, Exp. 3/04/2019.

**Winston Corbett** – Development Inspector: Dual Inspector #DIN0339, Exp. 12/15/2017.

**Mark Bowles** – Development Inspector: Dual Inspector #DIN0339, Exp. 10/06/2018.

**Robert Eakin** - Development Inspector: Erosion and Sediment Control Inspector #3810 – Exp. 11/30/2019; Provisionally Certified SWM Inspector (10/29/2015).

**Karl Kleinhenz** – Planner II: Provisionally Certified E&S Control Inspector (10/30/2014); Provisionally Certified E&S Control Plan Reviewer (5/28/2015); Provisionally Certified SWM Inspector (5/13/2015); Provisionally Certified SWM Plan Reviewer (6/10/2015).

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## 6.2 Annual Reporting Requirements

**Responsible Staff / Position:** George Nevergold  
Dev. Review Coordinator  
(540) 853-6501

**Required** Yes

### Description

A copy of the electronic database of private and operator-owned stormwater management facilities. To meet this requirement the City of Roanoke will provide its own database until such time as the State provides access to a state-wide web-based database, at which time reporting will be done using the state-wide system.

### Justification

Required under section II B 5 e of the permit.

### Education Program / Public Outreach

The SW facility tracking database will be made available upon request and posted for public viewing with each year's annual report.

### Annual Reporting Items

The database will track and report the following for each SW facility brought online during that reporting year:

- The SW facility type
- The facility location (including address or lat.-long.)
- The total acres treated by the facility, broken down as pervious and impervious
- The date the facility was brought online (if unk. use June 30, 2005)
- The 6th order HUC in which the facility is located
- The name of any impaired water segments to which the facility discharges
- The facility ownership (private or operator-owned)
- If privately owned, whether a maintenance agreement exists
- The date of the City's most recent inspection

Separately the City shall report:

- The number of facility inspections
- The number of enforcement actions

## Goals

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### 6.2.1 SW Facility Tracking Database

**Responsible Staff / Position:** George Nevergold  
Dev. Review Coordinator  
(540) 853-6501

### Description

A copy of the database used to track SW facilities as required by this minimum control measure.

**Planned:** 2014 2015 2016 2017 2018

**Complete:** 2014 2015 2016

<b>Activity Date</b>	<b>Name</b>
06/30/2016	'15 - '16 BMP Data

**Description**

Existing BMPs within the City of Roanoke are tracked. See the attached spreadsheet which indicates the BMPs and their associated watershed information. Additionally, the City has a process for acceptance of newly constructed BMPs. Attached is a report of the BMPs that were accepted this past fiscal year.

File Attachment ['15 - '16 BMP Data.xls](#)

File Attachment ['15 - '16 New BMPs.xlsx](#)

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**6.2.2 SWM Post Construction Inspections**

**Responsible Staff / Position:** George Nevergold  
Dev. Review Coordinator  
(540) 853-6501

**Description**

Documentation of post construction stormwater management facilities and follow up enforcement/compliance actions

**Planned:** 2014 2015 2016 2017 2018

**Complete:** 2014 2015 2016

<b>Activity Date</b>	<b>Name</b>
06/30/2016	'15 - '16 BMP Inspections

**Description**

A total of 269 inspections were performed on existing stormwater management facilities (BMPs) within the City of Roanoke for this past fiscal year. A report detailing the permit number and location has been attached.

This fiscal year a total of 32 notices of violation were issued for lack of maintenance, either by way of inspection report or formal certified letter. A report is attached detailing the locations and associated permits where violations were noted and corrected. This past fiscal year we have continued to implement an outreach effort to the BMP owners to inform them of the BMP on the property and to send notification of their pending annual inspection. This outreach effort also reminds them of their own responsibilities in regards to maintenance. Moving forward, our hope is that more property owners become educated about their facilities and are better able to maintain them, thereby, reducing the number of violation notices that might otherwise be issued.

File Attachment ['15-'16 SWM Inspections.pdf](#)

File Attachment ['15-'16 SWM Violations.pdf](#)

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## 7 MCM#6 Pollution Prevention/ Good Housekeeping for Municipal Operations

**Responsible Staff / Position:** Christopher Blakeman  
Environmental Administrator  
(540) 853-1173

### Description

To comply with this MCM, the City must satisfy the following:

a. Operations and maintenance activities. The MS4 Program Plan submitted with the registration statement shall be implemented by the operator until updated in accordance with this state permit. In accordance with Table 1 in this section, the operator shall develop and implement written procedures designed to minimize or prevent pollutant discharge from: (i) daily operations such as road, street, and parking lot maintenance; (ii) equipment maintenance; and (iii) the application, storage, transport, and disposal of pesticides, herbicides, and fertilizers. The written procedures shall be utilized as part of the employee training. At a minimum, the written procedures shall be designed to:

- (1) Prevent illicit discharges;
  - (2) Ensure the proper disposal of waste materials, including landscape wastes;
  - (3) Prevent the discharge of municipal vehicle wash water into the MS4 without authorization under a separate VPDES permit;
  - (4) Prevent the discharge of wastewater into the MS4 without authorization under a separate VPDES permit;
  - (5) Require implementation of best management practices when discharging water pumped from utility construction and maintenance activities;
  - (6) Minimize the pollutants in stormwater runoff from bulk storage areas (e.g., salt storage, topsoil stockpiles) through the use of best management practices;
  - (7) Prevent pollutant discharge into the MS4 from leaking municipal automobiles and equipment; and
  - (8) Ensure that the application of materials, including fertilizers and pesticides, is conducted in accordance with the manufacturer's recommendations.
- b. Municipal facility pollution prevention and good housekeeping.

(1) Within 12 months of state permit coverage, the operator shall identify all municipal high-priority facilities. These high-priority facilities shall include (i) composting facilities, (ii) equipment storage and maintenance facilities, (iii) materials storage yards, (iv) pesticide storage facilities, (v) public works yards, (vi) recycling facilities, (vii) salt storage facilities, (viii) solid waste handling and transfer facilities, and (ix) vehicle storage and maintenance yards.

(2) Within 12 months of state permit coverage, the operator shall identify which of the municipal high-priority facilities have a high potential of discharging pollutants. Municipal high-priority facilities that have a high potential for discharging pollutants are those facilities identified in subsection (1) above that are not covered under a separate VPDES permit and which any of the following materials or activities occur and are expected to have exposure to stormwater resulting from rain, snow, snowmelt or runoff:

- (a) Areas where residuals from using, storing or cleaning machinery or equipment remain and are exposed to stormwater;
- (b) Materials or residuals on the ground or in stormwater inlets from spills or leaks;
- (c) Material handling equipment (except adequately maintained vehicles);
- (d) Materials or products that would be expected to be mobilized in stormwater runoff during loading/unloading or transporting activities (e.g., rock, salt, fill dirt);
- (e) Materials or products stored outdoors (except final products intended for outside use where exposure to stormwater does not result in the discharge of pollutants);
- (f) 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;

(g) Waste material except waste in covered, non-leaking containers (e.g., dumpsters);

(h) Application or disposal of process wastewater (unless otherwise permitted); or

(i) 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.

(3) The operator shall develop and implement specific stormwater pollution prevention plans for all high-priority facilities identified in subdivision 2 of this subsection. The operator shall complete SWPPP development and implementation shall be completed within 48 months of coverage under this state permit. Facilities covered under a separate VDPES permit shall adhere to the conditions established in that permit and are excluded from this requirement.

(4) Each SWPPP shall include:

(a) A site description that includes a site map identifying all outfalls, direction of flows, existing source controls, and receiving water bodies;

(b) A discussion and checklist of potential pollutants and pollutant sources;

(c) A discussion of all potential nonstormwater discharges;

(d) Written procedures designed to reduce and prevent pollutant discharge;

(e) A description of the applicable training as required in Section II B 6 d;

(f) Procedures to conduct an annual comprehensive site compliance evaluation;

(g) An inspection and maintenance schedule for site specific source controls. The date of each inspection and associated findings and follow-up shall be logged in each SWPPP;

(h) The contents of each SWPPP shall be evaluated and modified as necessary to accurately reflect any discharge, release, or spill from the high priority facility reported in accordance with Section III G. For each such discharge, release, or spill, the SWPPP must include the following information: date of incident; material discharged, released, or spilled; and quantity discharged, released or spilled; and

(i) A copy of each SWPPP shall be kept at each facility and shall be kept updated and utilized as part of staff training required in Section II B 6 d.

#### c. Turf and Landscape management.

(1) The operator shall 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 MS4 operator where nutrients are applied to a contiguous area greater than one acre. Implementation shall be in accordance with the following schedule:

(a) Within 12 months of state permit coverage, the operator shall identify all applicable lands where nutrients are applied to a contiguous area of more than one acre. A latitude and longitude shall be provided for each such piece of land and reported in the annual report.

(b) Within 60 months of state permit coverage, the operator shall implement turf and landscape nutrient management plans on all lands where nutrients are applied to a contiguous area of more than one acre. The following measurable outcomes are established for the implementation of turf and landscape nutrient management plans: (i) within 24 months of permit coverage, not less than 15% of all identified acres will be covered by turf and landscape nutrient management plans; (ii) within 36 months of permit coverage, not less than 40% of all identified acres will be covered by turf and landscape nutrient management plans; and (iii) within 48 months of permit coverage, not less than 75% of all identified acres will be covered by turf and landscape nutrient management plans. The operator shall not fail to meet the measurable goals for two consecutive years.

(c) MS4 operators with lands regulated under § 10.1-104.4 of the Code of Virginia shall continue to implement turf and landscape nutrient management plans in accordance with this statutory requirement.

(2) Operators shall annually track the following:

- (a) The total acreage of lands where turf and landscape nutrient management plans are required; and
- (b) The acreage of lands upon which turf and landscape nutrient management plans have been implemented.

(3) The operator shall not apply any deicing agent containing urea or other forms of nitrogen or phosphorus to parking lots, roadways, and sidewalks, or other paved surfaces.

d. Training. The operator shall conduct training for employees. The training requirements may be fulfilled, in total or in part, through regional training programs involving two or more MS4 localities provided; however, that each operator shall remain individually liable for its failure to comply with the training requirements in this permit. Training is not required if the topic is not applicable to the operator's operations and therefore does not have applicable personnel provided the lack of applicability is documented in the MS4 Program Plan. The operator shall determine and document the applicable employees or positions to receive each type of training. The operator shall develop an annual written training plan including a schedule of training events that ensures implementation of the training requirements as follows:

- (1) The operator shall provide biennial training to applicable field personnel in the recognition and reporting of illicit discharges.
- (2) The operator shall provide biennial training to applicable employees in good housekeeping and pollution prevention practices that are to be employed during road, street, and parking lot maintenance.
- (3) The operator shall provide biennial training to applicable employees in good housekeeping and pollution prevention practices that are to be employed in and around maintenance and public works facilities.
- (4) The operator shall ensure that employees, and require that contractors, who apply pesticides and herbicides are properly trained or certified in accordance with the Virginia Pesticide Control Act (§3.2-3900 et seq. of the Code of Virginia).
- (5) The operator shall ensure 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 Sediment Control Law and its attendant regulations.
- (6) The operator shall ensure that applicable employees obtain the appropriate certifications as required under the Virginia Erosion and Sediment Control Law and its attendant regulations.
- (7) The operator shall provide biennial training to applicable employees in good housekeeping and pollution prevention practices that are to be employed in and around recreational facilities.
- (8) The appropriate emergency response employees shall have training in spill responses. A summary of the training or certification program provided to emergency response employees shall be included in the first annual report.
- (9) The operator shall keep documentation on each training event including the training date, the number of employees attending the training, and the objective of the training event for a period of three years after each training event.

e. The operator shall require that municipal contractors use appropriate control measures and procedures for stormwater discharges to the MS4 system. Oversight procedures shall be described in the MS4 Program Plan.

f. At a minimum, the MS4 Program Plan shall contain:

- (1) The written protocols being used to satisfy the daily operations and maintenance requirements;

- (2) A list of all municipal high-priority facilities that identifies those facilities that have a high potential for chemicals or other materials to be discharged in stormwater and a schedule that identifies the year in which an individual SWPPP will be developed for those facilities required to have a SWPPP. Upon completion of a SWPPP, the SWPPP shall be part of the MS4 Program Plan. The MS4 Program Plan shall include the location in which the individual SWPPP is located;
- (3) A list of lands where nutrients are applied to a contiguous area of more than one acre. Upon completion of a turf and landscape nutrient management plan, the turf and landscape nutrient management plan shall be part of the MS4 Program Plan. The MS4 Program Plan shall include the location in which the individual turf and landscape nutrient management plan is located; and
- (4) The annual written training plan for the next reporting cycle.

g. Annual reporting requirements.

- (1) A summary report on the development and implementation of the daily operational procedures;
- (2) A summary report on the development and implementation of the required SWPPPs;
- (3) A summary report on the development and implementation of the turf and landscape nutrient management plans that includes: (a) The total acreage of lands where turf and landscape nutrient management plans are required; and (b) The acreage of lands upon which turf and landscape nutrient management plans have been implemented; and
- (4) A summary report on the required training, including a list of training events, the training date, the number of employees attending training and the objective of the training.

## Best Management Practices

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### 7.1 MS4 Program Plan Requirements

**Responsible Staff / Position:** Christopher Blakeman  
Environmental Administrator  
(540) 853-1173

**Required** Yes

#### Description

A description of the measures, procedures, and processes used to comply with the Section II.B.6. of the MS4 Permit. For reporting purposes reference may be made to materials which can be found elsewhere and where such materials are available to the public either freely or upon request.

#### Justification

Required under Section II.B.6.

### Annual Reporting Items

1. Operational BMP's/SOP's for City Facilities
2. Evaluation of City Facilities for Pollution Potential
3. Evaluation of City-Managed Lands for Nutrient Management Plan Need
4. Detailing of Employee Stormwater Awareness Training Program

#### Goals

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##### 7.1.1 Operational BMP's/SOP's

**Responsible Staff / Position:** Dwayne DArdenne  
Stormwater Manager  
(540) 853-1756

#### Description

This section of the report is meant as a place holder for assorted municipal BMP's and SOP's associated with our operations and/or policies. It will be updated as needed to reflect any new or revised policies and/or procedures related to the City's over-all stormwater management operations.

**Planned:** 2014 2015 2016

**Complete:** 2014 2015 2016

Activity Date	Name	Description
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None

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##### 7.1.2 Facility Pollution Potential Evaluations

**Responsible Staff / Position:** Dwayne DArdenne  
Stormwater Manager  
(540) 853-1756

#### Description

By July 1, 2014, the City must identify all municipal high-priority facilities.

By July 1, 2017 stormwater pollution prevention plans (SWPPP's) must be written and fully implemented for all identified facilities.

**Planned:** 2014 2015 2016 2017

**Complete:** 2014 2015 2016

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**Activity Date**                      **Name**  
06/30/2016                      FY16 Facility Report

**Description**

In the permit year 2014-2015, the City added two dog parks, Thrasher Park and Highland Park, as significant sources due to the potential for larger than normal bacterial contamination loads.

The City intends to develop a SWPPP for identified facilities using the guidelines in Section II.B.6.b.(3). Implementation of this SWPPP will be complete by the mandated implementation deadline of July 1, 2017.

---

**7.1.3 Land Evaluation for Nutrient Management Plans**

**Responsible Staff / Position:**                      Dwayne DArdenne  
   Stormwater Manager  
   (540) 853-1756

**Description**

The City must evaluate all lands it owns or operates and applies fertilizer to. Any contiguous area meeting these criteria and being over one acre in size must be identified as needing a nutrient management plan.

The City has identified several properties to which this provision of the permit applies, and is prepared to implement nutrient management plans for each in accordance with the mandated deadline of July 1, 2018.

**Planned:**        2014 2015 2016 2017 2018

**Complete:**    2014 2015 2016

**Activity Date**                      **Name**  
06/30/2016                      FY 16 Land Evaluation

**Description**

During FY14-15, the City of Roanoke evaluated all lands to which it applies nutrients and selected those that are over one contiguous acre in size. Two parcels, both owned by the City, were identified: the "Entranceway Park" (1.8 acres) and the "Mountain View Open Space" (3.5 acres).

In FY15-16, during discussions with the Park and Recreation Division, it was determined that the initial Park land evaluation was incorrect and needed to be updated prior to NMPs being created. Parks that are fertilized and meet the permit requirements for NMP are River's Edge South (~3 acres), Mountain View (3.5 acres) and Elmwood Park (~3.42). Entranceway Park (1.8 acres) has previously been listed. However, the turf acreage is only .91 acres. This area may get fertilized as the budget allows but has received inconsistent fertilizer applications in the past few years due to budgetary constraints. Wasena park and Highland Park are not fertilized at all.

The Transportation Division already employs the use of nutrient management plans for maintaining the various rights-of-way throughout the City. While none of these properties are over one contiguous acre in size, the Transportation staff decided to proactively develop and follow a nutrient management plan for these areas, as they are located throughout the City. As per discussions in FY16 with Jesse Roberts, these areas do not need to be included in MS4 accounting.

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**7.1.4 Employee Stormwater Awareness Training Program**

**Responsible Staff / Position:**                      Dwayne DArdenne  
   Stormwater Manager  
   (540) 853-1756

**Description**

The City is committed to training all applicable personnel in accordance with Section II.B.6.d. of the permit. The City has designed a training program to ensure conformance with this requirement, as well as to ensure all employees, regardless of their job duties, receive stormwater pollution awareness training at a basic level.

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**Planned:** 2014 2015 2016

**Complete:** 2014 2015 2016

<b>Activity Date</b>	<b>Name</b>
06/30/2016	FY15-16 Employee Training Program

**Description**

The City has compiled a list of all employees (identified by job titles and/or responsibilities) that will need to receive the specified training under Section II.B.6.d. of the permit.

In addition to the permit requirements, all City employees, regardless of their job duties are provided with basic stormwater pollution awareness training in their New Employee Orientation presentation. This training is presented as part of a broader "environmental awareness" module.

The training plan, which shows the specific job titles to be trained, is attached.

File Attachment [City of Roanoke Stormwater Training Plan.pdf](#)

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## 7.2 Annual Reporting Requirements

**Responsible Staff / Position:** Christopher Blakeman  
Environmental Administrator  
(540) 853-1173

**Required** Yes

### Description

A report of all elements required under Section II.B.6.g. of the MS4 Permit, plus any additional items the City feels it should include in the annual MS4 report.

### Justification

Required under Section II.B.6.g.

## Annual Reporting Items

1. Update on City Operational Procedure Development and Implementation
2. Update on SWPPP Development and Implementation for Necessary Facilities
3. Update on Nutrient Management Plan Development and Implementation for Necessary Lands
4. Update on Training Plan Implementation and Associated Documentation
5. Municipal Street Sweeping Performance
6. Storm Sewer System Maintenance
7. Pet Waste Collection Station Program
8. Facility Awards and Recognition

## Goals

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### 7.2.1 Operational Procedure Development and Implementation

**Responsible Staff / Position:** Dwayne D'Ardenne  
Stormwater Manager  
(540) 853-1756

### Description

In accordance with Section II.B.6.a. of the permit, the City will report on the development of SOP's for its daily operations and maintenance activities, which are to be completed by June 30, 2015.

**Planned:** 2014 2015 2016 2017 2018

**Complete:** 2014 2015 2016

Activity Date	Name
06/30/2016	FY16 Operation Procedure Update

### Description

In FY14-15, a detailed series of operationally specific Standard Operating Procedures (SOPs) were developed and implemented for all activities and operations deemed to present a potential or real threat of pollution. In FY15-16 many of those same SOPs were revised to reflect facility and operational changes. Also, during this past permit year, additional SOPs have been under development to address the inspection and evaluation of previously not formally covered potential stormwater pollution sources and their controls (example: bulk storage of mulch). These will be combined and included with the Public Works Service Center SWPPP.

Attached are a list of the SOPs and an example copy of one such document that specifically references our Public Works Service Center.

File Attachment [SOP-4.4.6-1.1 PWSC Best Management Practices.doc](#)

File Attachment [Pollution Prevention SOPs list.doc](#)

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### 7.2.2 SWPPP Development and Implementation

**Responsible Staff / Position:** Dwayne D'Ardenne  
Stormwater Manager  
(540) 853-1756

#### Description

A stormwater pollution prevention plan (SWPPP) must be written for all identified high-priority facilities. Development, implementation, and maintenance of these SWPPP's will be reported on.

**Planned:** 2014 2015 2016 2017 2018

**Complete:** 2014 2015 2016

Activity Date	Name
06/30/2016	FY16 SWPPP Update

#### Description

The Public Works SWPPP is near finalization and the City fully commits to implementing a SWPPP for its Public Works Service Center by the required date of July 1, 2017.

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### 7.2.3 Nutrient Management Plan Development and Implementation

**Responsible Staff / Position:** Dwayne D'Ardenne  
Stormwater Manager  
(540) 853-1756

#### Description

For all lands identified in the Program Plan, the City must prepare a nutrient management plan.

Development, implementation, and maintenance of the nutrient management plans will be reported on.

**Planned:** 2014 2015 2016 2017 2018

**Complete:** 2014 2015 2016

Activity Date	Name
06/30/2016	FY16 NMP Update

#### Description

During FY14-15, the City of Roanoke evaluated all lands to which it applies nutrients and selected those that are over one contiguous acre in size. Two parcels, both owned by the City, were identified: the "Entranceway Park" (1.8 acres) and the "Mountain View Open Space" (3.5 acres).

In FY15-16, during discussions with the Park and Recreation Division, it was determined that the initial Park land evaluation was incorrect and needed to be updated prior to NMPs being created. Parks that are fertilized and meet the permit requirements for NMP are River's Edge South (~3 acres), Mountain View (3.5 acres) and Elmwood Park (~3.42). Entranceway Park (1.8 acres) has previously been listed. However, the turf acreage is only .91 acres. This area may get fertilized as the budget allows but has received inconsistent fertilizer applications in the past few years due to budgetary constraints. Wasena park and Highland Park are not fertilized at all.

As required by permit Section II,B,6,c,(1), the specific locations of the three parcels identified as needing NMPs are included here.

---

**River's Edge South** (~3 acres) Latitude: 37.252654, Longitude: -79.947583  
**Mountain View Open Space** (3.5 acres). Latitude 37.250282, Longitude -79.934183.  
**Elmwood Park** (~3.42) Latitude: 37.267557, Longitude: -79.939762

The development of NMPs for these sites is being led by the Stormwater Division in collaboration with City's Dept. of Parks and Recreation. The NMP are attached below.

- File Attachment [Rivers Edge Nutrient Management Plan\\_final\\_Sept. 2016.pdf](#)
- File Attachment [Mountain View Center Nutrient Management Plan\\_final\\_Sept. 2016.pdf](#)
- File Attachment [Elmwood Park Nutrient Management Plan\\_final\\_Sept 2016.pdf](#)

**7.2.4 Training Plan Implementation and Documentation**

**Responsible Staff / Position:** Dwayne DArdenne  
Stormwater Manager  
(540) 853-1756

**Description**

The City intends to train all applicable personnel in accordance with Section II.B.6.d. of the permit. The City will provide annual updates and documentation of this specific training, as well as documentation on the general environmental awareness presentation (which contains a section on stormwater) that all employees must view.

**Planned:** 2014 2015 2016 2017 2018

**Complete:** 2014 2015 2016

Activity Date	Name
06/30/2016	FY16 Training Update

**Description**

Section II,B,6,d compliance: The employee stormwater training plan developed and submitted for FY15 was carried out. A copy of the biennial training plan for 2017 is attached.

Additionally, the City of Roanoke continues to provide Environmental Awareness Training as part of its orientation for new employees. Included in this training is a section with a heavy emphasis on stormwater pollution prevention, which helps trainees to understand the impact stormwater pollution can have on our community and provides guidance on how to report real or suspect stormwater pollution issues. A list of training dates and number of attendees is shown below:

Date	Number of Attendees
08/26/2015	26
10/28/2015	20
12/02/2015	22
01/07/2016	33
02/03/2016	15
04/13/2016	17
06/06/2016	25
Total 158	

File Attachment [City of Roanoke Stormwater Training Plan.pdf](#)

### 7.2.5 Municipal Street Sweeping Performance

**Responsible Staff / Position:** Dwayne DArdenne  
Stormwater Manager  
(540) 853-1756

#### Description

The City maintains a regular street sweeping schedule for residential and arterial streets, as well as streets in the "Central Business District."

Documentation of this activity will be measurement of the total number of lane miles swept annually. When/where able we will also report the number of cubic yards of debris removed.

**Planned:** 2014 2015 2016 2017 2018

**Complete:** 2014 2015 2016

Activity Date	Name
06/30/2016	FY16 Street Sweeping Performance

#### Description

In the past permit year, the City street sweeping crews cleaned a total of 14,241 lane miles. Those lane miles are spread between residential, arterial, and "central business district" streets, which are swept with correspondingly increased frequency. These operations removed 1,299.18 tons of debris from the streets, thereby preventing it from getting into the storm sewer system.

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### 7.2.6 Storm Sewer System Maintenance

**Responsible Staff / Position:** Dwayne DArdenne  
Stormwater Manager  
(540) 853-1756

#### Description

The City will continue its program of storm sewer inspection, cleaning, and maintenance activity.

Measurement of this activity will be by weight in tons. If significant infrastructure damage is found, those drains are scheduled for later repair.

**Planned:** 2014 2015 2016 2017 2018

**Complete:** 2014 2015 2016

Activity Date	Name
06/30/2016	FY16 Stormdrain System Maintenance

#### Description

A total of 3506 storm sewer inlets were inspected during the last permit year, resulting in 157 being cleaned and 66 being repaired. A total of 3283 inspections were conducted in Carvin Creek, Glade Creek and Tinker Creek. Estimated annual tonnage removed by Vactor trucks from the stormdrain system is 504 tons, calculated by Resource Authority weight tickets.

Attached is a spreadsheet detailing the location of each inlet and the maintenance activities performed.

File Attachment [FY15-16 Stormdrain Maint Locations.xls](#)

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### 7.2.7 Pet Waste Collection Station Program

**Responsible Staff / Position:** Christopher Blakeman  
Environmental Administrator  
(540) 853-1173

#### Description

The City's Parks & Recreation Department has implemented a program to provide pet waste collection stations in City Parks and Greenways in an effort to abate a recurring public nuisance as well as minimize bacterial waste loads to our local streams and rivers. These stations are located in the downtown residential district, where grassy and other areas conducive to pet walking are less prevalent, as well as in many City Parks and Greenways frequented by pets and their owners.

Maintenance and expansion of this program will be reported on annually.

**Planned:** 2014 2015 2016 2017 2018

**Complete:** 2014 2015 2016

Activity Date	Name
06/30/2016	FY16 Pet Waste Station Update

#### Description

In the past permit year, the City of Roanoke's Stormwater Division has installed 7 additional Mutt Mitt Stations in the downtown CBD in response to an increasing pet waste problem in these identified locations.

The attachments show the location of all of the City's 48 total pet waste stations for FY15-16.

File Attachment [Updated Proposed MM Stations.xls](#)

File Attachment [Mutt Mitt Station List-2015.xls](#)

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### 7.2.8 Facility Awards and Recognition

**Responsible Staff / Position:** Christopher Blakeman  
Environmental Administrator  
(540) 853-1173

#### Description

Appropriately related awards, certifications, and accreditations that are secured by the City will be listed and briefly discussed to demonstrate approval of the City's current practices by other outside entities and agencies.

**Planned:** 2014 2015

**Complete:** 2014 2015

Activity Date	Name	Description
None		

## **8 MS4 Program Evaluation**

**Responsible Staff / Position:** Dwayne DArdenne  
Stormwater Manager  
(540) 853-1756

### **Description**

A broad based review and evaluation of the MS4 program as required under Section II,E,1 of the permit.

E. Evaluation and assessment.

1. MS4 Program Evaluation.

The operator must annually evaluate:

a. Program compliance;

b. The appropriateness of the identified BMPs (as part of this evaluation, the operator shall evaluate the effectiveness of BMPs in addressing discharges into waters that are identified as impaired in the 2010 § 305(b)/303(d) Water Quality Assessment Integrated Report); and

c. Progress towards achieving the identified measurable goals.

## Best Management Practices

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### 8.1 Evaluation Statement

**Responsible Staff / Position:** Christopher Blakeman  
Environmental Administrator  
(540) 853-1173

**Required** Yes

#### Description

Broad based review and evaluation of program.

#### Justification

Required under Section II,E,1 of the permit.

### Annual Reporting Items

Summary of program status overall.

## Goals

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### 8.1.1 MS4 Program Review and Evaluation

**Responsible Staff / Position:** Christopher Blakeman  
Environmental Administrator  
(540) 853-1173

#### Description

**Planned:** 2015 2016 2017 2018

**Complete:** 2015 2016

Activity Date	Name
06/30/2016	FY16 Evaluation

#### Description

##### Summary MS4 Program Evaluation:

With the dedicated efforts of the Stormwater Utility, the City has made great strides in creating a more cohesive program during FY15-16. As Watershed Master Plans are created for each Roanoke River tributary, the City is integrating the following goals into the TMDL Action plans, in particular the Bacteria and Sediment TMDL Action Plan for FY16-17.

- **Maximize watershed resiliency and sustainability** which will reduce flooding, in-stream erosion, sediment loads, and bacteria loads while increasing base flow in dry channels, biological life, recreation, and aesthetics.
- **Minimize watershed hazard to public health, safety, and property** which will reduce flooding, flood insurance costs, flood repair costs, in-stream erosion, sediment loads, and bacteria loads while increasing base flow in dry channels, biological life, recreation, and aesthetics.
- **Connect citizens, businesses, students, and other stakeholders to their watershed** which will reduce illicit discharges while increasing property values, treatment from private BMPs, community education, watershed knowledge base, recreation, and aesthetics.

Incorporating these goals and their associated action items and indicators will help to create a performance measuring metric that will help track progress. Our water quality monitoring programs will allow the City to track

progress over time.

In collaboration with our contractor, Clean Valley Council, the City has met and exceeded the MS4 requirements for outreach, education and public involvement. Developing programs, which are outlined in more detail in the Action Plans, will help to further educate and engage citizens in being active participants in optimizing the health of their watersheds.

Stormwater's continued asset inventory and CCTV activities will provide greater capabilities to track illicit discharges and identify problems. Ipad field data entry and a dedicated GIS staff member also increase efficiency and error reduction.

Areas for improvement include will be focused on integrating the above goals into daily actionable items.

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