City of Salem

Municipal Separate Storm Sewer System Program Plan & Annual Report

For

General Permit No. VAR040010

And

Annual Reporting through

July 1, 2014 through June 30, 2015

This plan and annual report is submitted in accordance with 9VAC25-890-30 and 9VAC25-890-40 as part of registration statement for permit coverage to discharge stormwater to surface waters of the Commonwealth of Virginia consistent with the VAR04 General Permit, effective July 1, 2013.

Submitted: September 30, 2015

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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 ensure 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."

Printed Name: JAMES E. TALIAFERRO, II Title: ASST CITY MGR

Signature: [illegible] Date: 10/2/15

DEFINITIONS

Definitions provided herein do not supersede those within the City of Salem's City Code, but are solely intended to supplement interpretation of the City's MS4 Program Plan and Annual Report.

"Best management practice" or "BMP" means schedules of activities, prohibitions of practices, including both structural and nonstructural practices, maintenance procedures, and other management practices to prevent or reduce the pollution of surface waters and groundwater systems from the impacts of land-disturbing activities.

"Construction activity" means any clearing, grading or excavation associated with large construction activity or associated with small construction activity.

"Department" means the Department of Environmental Quality.

"Discharge," when used without qualification, means the discharge of a pollutant.

"Drainage area" means a land area, water area, or both from which runoff flows to a common point.

"Hydrologic Unit Code" or "HUC" means a watershed unit established in the most recent version of Virginia's 6th Order National Watershed Boundary Dataset.

"Illicit discharge" means any discharge to a municipal separate storm sewer that is not composed entirely of stormwater, except discharges resulting from firefighting activities, and discharges identified by and the following, unless identified by the MS4 operator as significant contributors of pollutants: water line flushing, landscape irrigation, diverted stream flows, rising groundwaters, uncontaminated groundwater infiltration, uncontaminated pumped groundwater, discharges from potable water sources, foundation drains, air conditioning condensation, irrigation water, springs, water from crawl space pumps, footing drains, lawn watering, individual residential car washing, flows from riparian habitats and wetlands, dechlorinated swimming pool discharges, and street wash water.

"Impervious cover" means a surface composed of material that significantly impedes or prevents natural infiltration of water into soil.

"Land disturbance" or "land-disturbing activity" means a man-made change to the land surface that potentially changes its runoff characteristics including clearing, grading, or excavation except that the term shall not include those exemptions specified in Section 30-133(B) of the City of Salem's Stormwater Management Ordinance.

"Municipal separate storm sewer" or "MS4" means a conveyance or system of conveyances otherwise known as a municipal separate storm sewer system, including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains

"MS4 Program Plan" means the completed registration statement and all approved additions, changes and modifications detailing the comprehensive program implemented by the operator under this state permit to reduce the pollutants in the stormwater discharged from its municipal separate storm sewer system (MS4) that has been submitted and accepted by the department.

"Outfall" means, when used in reference to municipal separate storm sewers, a point source at the point where a municipal separate storm sewer discharges to surface waters and does not include open

conveyances connecting two municipal separate storm sewers, or pipes, tunnels or other conveyances which connect segments of the same stream or other surface waters and are used to convey surface waters.

“Public” means, for the purpose of this Program Plan, the general population who work and/or live within the City’s limits

"State waters" means all water, on the surface and under the ground, wholly or partially within or bordering the Commonwealth or within its jurisdiction, including wetlands.

"Stormwater" means precipitation that is discharged across the land surface or through conveyances to one or more waterways and that may include stormwater runoff, snow melt runoff, and surface runoff and drainage.

"Stormwater management plan" means a document(s) containing material for describing methods for complying with the requirements of the Virginia Stormwater Management Program

"Total maximum daily load" or "TMDL" means the sum of the individual wasteload allocations for point sources, load allocations (LAs) for nonpoint sources, natural background loading and a margin of safety. TMDLs can be expressed in terms of either mass per time, toxicity, or other appropriate measure. The TMDL process provides for point versus nonpoint source trade-offs.

"Virginia Stormwater Management Handbook" means a collection of pertinent information that provides general guidance for compliance with the Act and associated regulations and is developed by the department with advice from a stakeholder advisory committee.

"Wasteload allocation" or "wasteload" or "WLA" means the portion of receiving surface water's loading or assimilative capacity allocated to one of its existing or future point sources of pollution. WLAs are a type of water quality-based effluent limitation.

"Watershed" means a defined land area drained by a river or stream, karst system, or system of connecting rivers or streams such that all surface water within the area flows through a single outlet.

1.0 PROGRAM PLAN STRUCTURE

The City of Salem's Program Plan is structured to serve as a stand-alone document that, when implemented, meets the requirements of the VAR04 *General Virginia Pollutant Discharge Elimination System (VPDES) Permit for Discharges of Stormwater from Small Municipal Separate Storm Sewer Systems (MS4s)*, referred to in the remainder of this Plan as the General Permit. The Plan is intended to be subject to modifications as part of an iterative process that seeks to improve the effectiveness of best management practices (BMPs) and may be modified from time to time. Measure(s) of effectiveness are incorporated in each BMP and annual reporting form in Section 3.

1.1 Minimum Control Measures

The General Permit requires the City's Program Plan to include BMPs to address the requirements of six minimum control measures (MCMs) described in Section II of the General Permit. The MCMs are summarized as:

- MCM 1: Public Education and Outreach on Stormwater Impacts
- MCM 2: Public Involvement and Participation
- MCM 3: Illicit Discharge Detection and Elimination
- MCM 4: Construction Site Stormwater Runoff Control
- MCM 5: Post-construction Stormwater Management
- MCM 6: Pollution Prevention/Good Housekeeping for Operations

Section 3.0 of this Program Plan provides BMPs developed to explicitly address each General Permit requirements for each MCM. The title of each BMP is followed with a reference to the corresponding permit section. Each BMP included in the Program Plan includes the following information:

- A description of the BMP.
- A list of the necessary documentation to implement the BMP. This information is considered part of the Program and is readily available and updated, as necessary, and developed consistent with the BMP's implementation schedule.
- The identification of the individual(s) responsible for implementation of the BMP.
- The objective of the BMP and the result expected from implementation of the BMP.
- An implementation schedule consistent with the General Permit.
- A description of the method(s) to be used to assess the effectiveness of the BMP.

1.2 Special Conditions for TMDLs

The City of Salem is subject to Special Conditions for the following approved TMDLs where a waste load allocation (WLA) has been assigned to the City:

- Roanoke (Staunton) River Watershed for PCBs, approved December 9, 2010
- Upper Roanoke River Watershed for E. coli, approved June 27, 2007
- Upper Roanoke River Watershed for Sediment, approved September 7, 2006

The Special Conditions require the City to update this Program Plan to incorporate implementation of TMDL Action Plans that identify best management practices and milestones to be implemented during the remaining term of this permit which concludes July 1, 2018. BMPs are provided in Section 3.2 for development of Action Plans for the TMDLs listed above. Additional BMPs will be added for implementation of the Action Plans, once they are developed, in accordance with the schedules prescribed in each BMP in Section 3.2.

1.3 Annual Reporting

The City of Salem will submit an Annual Report to the Department of Environmental Quality (DEQ) by October 1st of each year with the reporting period spanning from July 1st through June 30th. This Program Plan includes annual reporting forms in "fillable form" format. The completion of these forms provides all of the reporting requirements to satisfy the reporting requirements of the General Permit and includes the:

- Cover sheet, which will be updated with the specific reporting year;
- Certification, that follows the table of contents and will be signed each year;
- "Annual Reporting – General Information Form" on the following page, completed annually;
- The "Annual Reporting Form" following each BMP in Section 3, completed annually; and
- The Measure(s) of Effectiveness Form following each BMP in Section 3.

Information compiled for effectiveness for each BMP in Section 3.0 will be utilized to evaluate and, if necessary, modify the respective BMP. Any modifications will be reported in the "Annual Reporting – General Information Form." Modifications to the Program made by the City will be done in accordance with the General Permit requirements described in Section 1.4.

The General Permit requires certification of the annual report which is provided immediately after the table of contents of this document. Certification is required by a principle executive officer or a duly authorized representative. The duly authorized representative must have overall responsibility of the City operations and written authorization must be provided to the Department.

1.4 Annual Reporting – General Information Form	
➢ The BMPs described in Section 3 of this Program Plan/Annual Report are the stormwater activities that the City of Salem plans to undertake during the remainder of the permit cycle. ➢ The City does not rely on another entity to implement portions of their MS4 Program Plan ➢ Completed Annual Reporting Forms for each BMP in Section 3 provide an assessment of the appropriateness of each BMP, progress towards achieving each measurable goal, and results of collected information analyzed for appropriate assessments and effectiveness of the BMP. ➢ See the updated Outfall Inventory in Appendix B for new MS4 outfalls that came online during the reporting year and their associated drainage area by HUC.	
➢ Did modifications to the responsible individual of any program role or responsibility or specific BMP included in the Program occur during the reporting year? (yes/no)	☐ Yes ☒ No
If yes, list modifications (provide BMP # to reference modification rationale): N/A - No modifications were made.	
➢ Based on a review of the reporting forms completed for the reporting year within Section 3 of this Program Plan, does the City finds itself compliant with the permit conditions (yes/no):	☒ Yes, the City is compliant ☐ No (see below)
If no, listed below are additional BMPs and/or changes made to BMPs or measurable goals for any of the MCMs, including steps to address any deficiencies (Refer to Section 1.5): N/A - The City finds itself compliant based on a review of this report.	
➢ Does the City's MS4 directly discharge to waters that are identified as impaired in the 2010 § 305(b)/303(d) Water Quality Assessment Integrated Report? (yes/no)	☒ Yes ☐ No
If yes, list the impaired waters and pollutant impairment: 1) Mason Creek - Impairment: Benthic-Macroinvertebrate Bioassessments, E. coli 2) Roanoke River - Impairment: Benthic-Macroinvertebrate Bioassessments, E. coli, Temperature, PCB in Fish Tissue	
➢ Based on the water quality issues identified in BMP 1.2 and impairments identified above, does a review of the effectiveness of the BMPs listed in the program indicate they are appropriate? (yes/no)	☒ Yes ☐ No
Explain why they are effective for the water quality issues identified in BMP 1.2 and listed impairments or identify potential modifications if not effective: BMPs are effective because they address potential pollutants into the MS4. Over time, measures of effectiveness for each BMP will be assessed and modifications made if necessary. While Minimum Control Measures 4 and 5 BMPs assist with addressing benthic impairments, Minimum Control Measure 1 BMPs address E. coli. City properties have been evaluated and it has been determined that the properties are not a source of PCBs.	

1.5 Program Modifications

Modifications to the MS4 Program may occur throughout the life of this Program Plan as part of an iterative process to reduce the pollutant loadings and to protect water quality. Modifications will most often be made when a BMP is deemed ineffective, based on reporting for the "Measure of Effectiveness Forms" for each BMP in Section 3. When a BMP is determined ineffective, updates and modifications to the MS4 Program must be made in accordance with the following procedures:

- Adding (but not eliminating or replacing) BMPs may be made by the City at any time. Additions shall be reported as part of the annual report in the "Annual Reporting – General Information Form" in Section 1.4.
- Updates and modifications to specific standards and specifications, schedules, operating procedures, manuals, checklists, and other documents routinely evaluated and modified are permitted provided that the updates and modifications are done in a manner that:
    - Is consistent with the conditions of the General Permit;
    - Follow any public notice and participation requirements established in the General Permit; and
    - Are documented in the annual report in the "Annual Reporting – General Information Form" in Section 1.4.
- Replacing, or eliminating without replacement, any ineffective or infeasible strategies, policies, and BMPs with alternate strategies, policies, and BMPs may be requested at any time. Such requests must include the following:
    - An analysis of how or why the BMPs, strategies, or policies are ineffective or infeasible, including cost prohibitive;
    - Expectations on the effectiveness of the replacement BMPs, strategies, or policies;
    - An analysis of how the replacement BMPs are expected to achieve the goals of the BMP's to be replaced;
    - A schedule for implementing the replacement BMPs, strategies, and policies;
    - An analysis of how the replacement strategies and policies are expected to improve the City's ability to meet the goals of the strategies and policies being replaced; and
    - Requests or notifications made in writing to the Department and signed by a principle executive officer or a duly authorized representative; and
    - The City follows the public involvement requirements identified in the General Permit.

2.0 SCHEDULE

As discussed in Section 1, each BMP described in Section 3 of the Program Plan includes an implementation schedule. Some of the BMPs require supplemental actions to be taken to assist in the development or implementation of the BMP. Table 1 lists some of these actions with a summary of dates critical for assuring compliance with the permit. The Table is not intended to provide schedules for Program BMP implementation; but only to assist with Program Plan implementation.

Table 1. Summary of critical items and deadlines for program implementation.

BMP	Necessary Action	Due date
2.2	Public participation activities	4x annually
2.1	Post Annual Report on website	30 days after submittal annually
6.3a	Staff training on pollution prevention	Annually
1.1, 1.2	Provide for public participation for education and outreach plan	**Complete**
1.2	Public Education/Outreach Plan	**Complete**
3.1	Notification of MS4 Interconnections	**Complete**
3.3	Develop IDDE Program Manual	**Complete**
6.3a	Written Training Program (see IDDE and Good Housekeeping/Pollution Prevention Manuals)	**Complete**
6.2	Identify high priority areas (see BMP 6.2)	**Complete**
5.3	Post-construction SWM Inspection/Maintenance Program Manual	**Complete**
3.4, 6.1	Good Housekeeping/Pollution Prevention Program Manual	**Complete**
1.2, 3.4, 4.2	Website postings (see BMPs for details)	**Complete**
6.3b, 6.5	Good housekeeping contract language for municipal contractors	
SC.1	Upper Roanoke River Sediment Action Plan	
SC.1	Upper Roanoke River E. coli Action Plan	
3.3	Methodology for prioritizing outfalls	July 1, 2016
SC.1	Roanoke (Staunton) River PCBs Action Plan	
3.1	Storm sewer mapping/information table	
5.2	Update BMP database attributes	
6.2	High-priority facility SWPPP implementation	July 1, 2017

3.0 PROGRAM PLAN BEST MANAGEMENT PRACTICES

Section 3 includes the BMPs that the City will implement to meet the requirements for each MCM and the applicable Special Conditions described in the General Permit.

3.1 Minimum Control Measure BMPs

BMP 1.1 Public Participation for Public Education and Outreach Plan (Section II B.1.c.4)
Description: Provide for public participation during public education and outreach program development using results from a survey distributed to the public. The survey will be developed to assess the City's public knowledge regarding stormwater with the intent of assisting with the selection of high priority water quality issues. Opportunity to provide written comment will also be available with the survey. **Necessary documentation for implementation:** (1) Public Survey; (2) Public Survey results **Responsible individuals for implementation:** Communications Director and City Engineer **Objectives and expected results in meeting measurable goals:** The objective is to include the public in the selection of water quality issues identified in the City's Public Education and Outreach Plan. **Implementation schedule**: An opportunity for public participation was provided via a survey distributed in the spring of 2014. Survey results were incorporated into the Public Education and Outreach Plan (BMP 1.2) to meet the General Permit's July 1, 2014 deadline. A public survey will be distributed again in the spring of 2018 before the end of the permit cycle and the Public Education and Outreach Plan revised as necessary. **Method to determine effectiveness:** Effectiveness will be measured by the number of individuals responding to the survey and the incorporation of survey results into the Public Education and Outreach Plan.

BMP 1.1 Annual Reporting Form (Completed once during the development of the Public Education and Outreach Plan)	
Dates that survey was distributed:	Spring of 2014
Number of surveys completed:	2,159
Description of how survey results and responses were incorporated into the Program: Survey results were used to identify two of the the three high priority water quality issues in the City's Public Education and outreach Plan (See BMP 1.2). Survey results were also used to determine the relevant messages and appropriate outreach material to our target audience for two of the issues. The survey is considered effective based on the number of respondents indicated above and the ability to incorporate results into the identification of water quality issues.	

Necessary documents for implementation are not provided in the annual report, but will be retained on file for 3 years.

BMP 1.2 Develop Public Education and Outreach Program (Section II B.1.c.1-6)
Description: Identify three (3) high priority water quality issues contributed to by the discharge of stormwater. For each issue identified, provide • Rationale for the selection of each issue; • An identification and estimate of population size of the target audience who is most likely to have significant impacts on the water quality issue; and • A relevant message and educational and outreach materials to convey the message for distribution to the target audience. **Necessary documentation for implementation:** (1) Survey results from BMP 1.1; (2) Written Public Education and Outreach Plan describing the rationale of the selection of each water quality issue, identification of target audience and estimated population, and relevant message; (3) Materials described in the Public Education and Outreach Plan such as pamphlets and training materials. **Responsible individual for implementation:** Communication Director and City Engineer **Objectives and expected results in meeting measurable goals:** Objectives are to convey relevant information to target audiences regarding water quality issues. The expected result is that the target audiences will have an increased knowledge of the water quality issues over time. **Implementation schedule**: Outreach will be conducted a minimum of once a year to at least 20% of each target audience for each water quality issue identified in the Public Education and Outreach Plan. A public survey to measure knowledge on the identified issues was conducted in the spring of 2014 and will be distributed again in the spring of 2018 to measure effectiveness of the Plan for the permit cycle. **Method to determine effectiveness:** Two public surveys will be distributed to assess the effectiveness of the message delivered for each water quality issue, as noted in the implementation schedule. The first survey will occur near the start of implementation of the Public Education and Outreach Plan and the second in the final year of the permit cycle. Effectiveness will be measured by using a scoring system to compare results of the two surveys to determine if public knowledge regarding each water quality issue has increased.

BMP 1.2 Annual Reporting Form				
Has a written Public Education and Outreach Plan been developed?				☒ Yes ☐ No
If no, explain, is yes, summarize below: N/A				
Water quality Issue #	List of educational and outreach activities identified in Public Education and Outreach Plan Update	Target Audience	# people reached	% of target audience reached
1	Improve public education on stormwater impacts	General public	±5,000	20
2	Education on dog waste impacts and clean-up	Licensed dog owners	±720	20
3	Increased Stormwater Pollution Prevention Training	Relevant staff	±32	64
Water quality Issue #	List of educational and outreach activities that will be conducted during the ***next*** reporting year	Target Audience	# people to be reached ***next*** reporting year	Minimum % of target audience reached
1	Improve public education on stormwater impacts	General public	> 5,000	20
2	Education on dog waste impacts and clean-up	Licensed dog owners	> 720	20
3	Increased Stormwater Pollution Prevention Training	Relevant staff	+/- 50	100

Necessary documents for implementation are not provided in the annual report, but will be retained for a minimum of 3 years and are available upon request.

Measure of Effectiveness Form	
Average "knowledge" score from previous survey:	TBD
Average "knowledge" score from latest survey:	TBD
Has the "knowledge" score gone up over the permit cycle?	☐ Yes (BMP effective) ☐ No (See below) ☒ N/A
If no, discuss potential ineffectiveness of the BMP (outreach materials, training approach, etc.). Effectiveness wIll be evaluated over time with distribution of the public survey and results of Knowledge Quizes as described for each water quality issue in the City's Public Education and Outreach Plan. The City's Public Education and Outreach Plan is provided as an enclosure with this Annual Report.	
If no, Suggest BMP modifications to the Program Plan with rationale to increase effectiveness: N/A	

BMP 2.1 Public Involvement through web posting of MS4 Program information (Section II B.2.a.1-2)
Description: The following documentation will be maintained on the City's stormwater website: • The latest version of this MS4 Program Plan • The latest MS4 Annual Reports. Public education and outreach materials developed for BMP 1.2 will include links to the Program Plan and Annual Reports. **Necessary documentation for implementation:** (1) City of Salem MS4 Program Plan; (2) City of Salem MS4 Annual Reports; (3) Web address of posted materials; (4) Educational and outreach material from BMP 1.2 **Responsible individual for implementation:** Communication Director and City Engineer **Objectives and expected results in meeting measurable goals:** Objectives are to provide an opportunity to the public to review the City's MS4 Program documentation. Expected results are an increase in public knowledge of the effects of stormwater runoff on water quality and BMPs implemented by the City to improve water quality from stormwater runoff. **Implementation schedule**: The City's Program Plan and Annual Report are included in this single document. This document will be posted on the web page within 30 days of submittal to DEQ, or by November 1st of each year. **Method to determine effectiveness:** Same as BMP 1.2.

BMP 2.1 Annual Reporting Form
Web link to the City's Program Plan/Annual Report is provided below:
http://www.salemva.gov/departments/engineering/StormwaterInformation.aspx

Necessary documents for implementation are not provided in the annual report, but will be retained on file for 3 years.

BMP 2.2 Public participation (Section II B.1.b)
Description: The City of Salem will participate, through promotion, sponsorship, or other involvement, in a minimum of four local activities annually. **Necessary documentation for implementation:** (1) A list of public participation opportunities; (2) Documentation of participation for each activity. **Responsible individual for implementation:** Communication Director and City Engineer **Objectives and expected results in meeting measurable goals:** The objective is to increase 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. Measurable goals include a measure or estimation of the number of people that participate in each local activity. **Implementation schedule**: Public participation will be conducted a minimum of four times a year. **Method to determine effectiveness:** Effectiveness will be determined by successful public turn-out or exposure to each event. Selection of specific events may be modified from year to year based on opportunity, the potential impact of the audience that can be reached, and anticipated public turn-out.

BMP 2.2 Annual Reporting Form			
Local activity	Type of participation (e.g. promotion, sponsorship, other)	Estimated # of people reached	Summary of documentation* that demonstrates participation
Stormwater Expo	Promotion - BMP displays, Q&As	750	Photos
Hazardous Waste Day	Promotion - hazardous waste drop off	200	Photos
Presentation to Homebuilders	Promotion - discussion, Q&A	+/-15	Q&A discussion
Roanoke County/Salem Chambers Breakfast	Promotion - brochures handed out in gift bags	150	Brochure

* Documentation is attached in Appendix A

Measure of Effectiveness Form	
Local Activity (same as above)	Rationalization of effectiveness or ineffectiveness
Stormwater Expo	Effective due to size of the audience reached and stormwater BMP information conveyed
Hazardous Waste Day	Effective due to size of the audience reached and amount of hazardous waste materials collected
Presentation to Homebuilders	Effective due to size of the audience reached and stormwater information conveyed
Roanoke County/Salem Chambers Breakfast	Effective due to size of the audience reached and information conveyed
For an ineffective activity identified above, describe modifications to be made for next reporting year (e.g. different activity or different approach): N/A	

BMP 3.1 Storm Sewer Map and Outfall Information Table (Section II B.3.a.1-5)

Description: The City of Salem will maintain an accurate storm sewer system map and update the associated information table per Section II.B.3.a (1-5) of the General Permit. The map, at a minimum, will:

- Continue to Include the mapped location of all MS4 outfalls with a unique identifier that corresponds to the information table;
- Continue to include the name and location of all waters receiving discharges from City's MS4 outfalls and the associated sixth order hydrologic unit code (HUC) from Virginia's 6th Order National Watershed Boundary Dataset; and
- Continue to be updated in the case of installation of new outfalls.

The information table, at a minimum, will:

- Continue to include a unique identifier for each outfall;
- Will be updated to estimate acreage served by each outfall;
- Will be updated to include the name of the receiving surface water and indication as to whether the receiving water is listed as impaired on the Virginia 2010 303(d)/305(b) list; and
- Be updated to name any applicable TMDL or TMDLs into which the outfall discharges.

The information table will be updated as new outfalls come on-line. The City will notify downstream MS4s where applicable and in writing of any new or newly discovered interconnections that occur with new development. The City has previously notified the Veteran's Administration, Roanoke City and Roanoke County of interconnections.

Necessary documentation for implementation: (1) Storm sewer system map; (2) Outfall information table; (3) Written notification of new physical interconnections to the downstream MS4, where applicable.

Responsible individual for implementation: City Engineer

Objectives and expected results in meeting measurable goals: The objective is to maintain an up-to-date map of the storm sewer outfalls that provides a tool for the City's Illicit Discharge Detection and Elimination Program (see BMP 3.3). Expected results are that the mapping and the information table serves as a useful tool for tracking potential illicit discharges.

Implementation schedule: The storm sewer mapping and information table has been completed consistent with the previous General Permit. The information table will be updated in accordance with the current general permit and as described above by July 1, 2016.

Method to determine effectiveness: Effectiveness will be determined based on its use as a tool for identifying illicit discharges.

BMP 3.1 Annual Reporting Form	
Storm Sewer System Information Table is available in Appendix B	
Has the Information Table been updated per the current General Permit and as described in this BMP? (yes/no)	☐ Yes ☒ No
If no, explain: The information table will be updated by July 1, 2016, per the schedule described in the BMP and General Permit.	
Notifications to interconnected MS4s	
➢ During the reporting year, were any new outfalls installed or identified that physically interconnect to another MS4? (yes/no)	☐ Yes ☒ No
If yes, has the interconnected MS4 received written notification from the City regarding the interconnection? (yes/no or not applicable)	☐ Yes ☐ No ☒ N/A
If yes, list the notified MS4 written notifications by providing the MS4 entity notified, date of notification, and location information of the interconnection): N/A	
If an interconnected MS4 was not notified of a new interconnection, please explain why and indicate when the notification will be provided: N/A	

Estimated drainage acreage to each HUC and impaired water		
RU09 = 6,278 acres (Roanoke River)	RU10 = 2,608 acres (Mason Creek)	RU14 = 476 acres (Roanoke River)

Necessary documents for implementation, including the outfall mapping, are not provided in the annual report, but will be retained for a minimum of 3 years and are available upon request.

Measure of Effectiveness Form
If any potential illicit discharges were identified or reported (refer to reporting for BMP 3.2 and 3.3), was outfall mapping used to address the issue: Mapping was not necessary for reports this reporting year. However, the mapping is anticipated to be a useful tool.

BMP 3.2 Prohibit non-stormwater discharges (Section II B.3.b)
Description: The City of Salem prohibits non-stormwater discharges, including illegal dumping, into the storm sewer system through Chapter 30, Article V of the City Code (Illicit Storm Sewer Discharges). Article V prohibits illicit connections and discharges to the storm sewer system and establishes legal authority to inspect, conduct surveillance, and monitor to ensure compliance. The Article also gives the City the authority to initiate enforcement actions and establishes enforcement penalties and for violations. **Necessary documentation for implementation:** (1) Chapter 30, Article V of the City Code; (2) A list of any instances of violation and summary of actions taken by the City; (3) Completed IDDE Tracking Forms, as provided in Appendix D of the City's IDDE Program Manual. **Responsible individual for implementation:** City Engineer and Fire Chief **Objectives and expected results in meeting measurable goals:** The objective is to effectively prohibit non-stormwater discharge to the extent allowable under federal, state, or local law, regulation, or ordinance. Expected result is the appropriate use of enforcement actions to eliminate an illicit discharge, when necessary. **Implementation schedule**: Implementation of Chapter 30, Article V of the City Code will continue with implementation consistent with the methods described in BMP 3.3. Standardized IDDE Tracking forms began being used as of July 1, 2014. **Method to determine effectiveness:** Effectiveness will be determined based on the elimination of reported or observed non-stormwater discharges. Effectiveness will also be based on implementation of the inspections, surveillance, monitoring, and enforcement procedures in response to reports.

BMP 3.2 Annual Reporting Form
Reported or observed non-stormwater discharges are provided in Appendix C. Information in Appendix C includes a memo for each reported or observed discharge, including: • Date of violation the potential illicit non-stormwater discharge • Location of the potential illicit non-stormwater discharge • Description of the potential illicit non-stormwater discharge • Necessary corrective or disciplinary action taken * Note that subsequent reporting will utilize the IDDE Tracking Form in Appendix D of the City's IDDE Program Manual instead of the memo format provided in Appendix C of this annual report.

Necessary documents for implementation are not provided in the annual report, but will be retained for a minimum of 3 years and are available upon request.

Measure of Effectiveness Form	
Number of potential illicit non-stormwater discharges reported or observed, as described in Appendix C:	2
Number of potential illicit non-stormwater discharges resolved, as described in Appendix C:	2
➢ Is the number in the two boxes above the same? (yes/no)	☒ Yes (BMP effective) ☐ No (See below)
If no, based on information provided for non-resolved potential illicit non-stormwater discharges, describe any necessary modifications to the BMP to improve effectiveness in resolving potential illicit non-stormwater discharges: N/A	

BMP 3.3 Develop Illicit Discharge Detection and Elimination Procedures (Section II B.3.c, e)

Description: The City of Salem will develop and implement an Illicit Discharge Detection and Elimination (IDDE) Program Manual that includes written procedures to detect, identify, and address non-stormwater discharges, including illegal dumping, to the small MS4. Procedures will include written dry weather field screening methodologies that incorporate field monitoring that provide:

- A schedule of field screening activities to ensure at least 50 outfalls are screened annually with outfalls selected for screening based on a prioritization based on land use, age of infrastructure, historical issues, or other appropriate characterization;
- Methodologies to collect 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, and visual observations (e.g., order, color, clarity, floatables, deposits or stains, vegetation condition, structural condition, and biology;
- A time frame upon which to conduct an investigation to identify and locate the source of any observed continuous or intermittent non-stormwater discharge prioritized based on potential hazard to human health;
- Methodologies to determine the source of all illicit discharges;
- Mechanisms to eliminate identified sources of illicit discharges including a description of the policies and procedures for when and how to use legal authorities;
- Methods for conducting a follow-up investigation in order to verify that the discharge has been eliminated; and
- A mechanism to track all investigations to document, at a minimum, the date(s) that the illicit discharge was observed and reported; the results of the investigation; any follow-up of the investigation; resolution of the investigation; and the date that the investigation was closed.

Necessary documentation for implementation: (1) Illicit Discharge Detection and Elimination (IDDE) Manual; (2) Outfall information table; (3) Completed outfall screening field forms, (4) Completed IDDE Tracking Forms, as provided in Appendix D of the City's IDDE Program Manual..

Responsible individual for implementation: City Engineer

Objectives and expected results in meeting measurable goals: The objective is to establish effective methods and procedures for detecting, identifying, and addressing non-stormwater discharges, including illegal dumping, into the storm sewer. Expected results are effective identification and response to illicit discharges identified during screening activities and those reported by the public.

Implementation schedule: The City will screen at least 50 outfalls each year. Since July 1, 2014, the City uses methods in its IDDE Program Manual to identify and follow-up on screening results, as necessary per the City's IDDE Manual. Methodology for prioritizing outfalls will be developed and implemented by July 1, 2016.

Method to determine effectiveness: Effectiveness will be determined based on the percentage of the reported and identified non-stormwater discharges that are eliminated.

BMP 3.3 Annual Reporting Form	
Outfall Screening Record Summary	
Total number of outfalls (refer to BMP 3.1):	274*
*The total number of outfalls varies from the 2013-2014 annual reporting quantity due to a recent field assessment of regulated and unregulated outfalls in Salem.	
Total number of outfalls screened during the reporting year:	79
Were at least 50 outfalls screened during the reporting year? (yes/no)	☒ Yes (Objective achieved) ☐ No (Objective not achieved)
If 50 outfalls were not screened during the reporting year, explain why with a schedule to screen additional outfalls the following reporting year: N/A	
Were the outfalls screened selected based on prioritization criteria (land use, age of infrastructure, historical issues, etc.)? (yes/no)	☐ Yes (Objective achieved) ☒ No (Objective not achieved)
If no, explain why with a schedule for prioritizing outfalls: The City will develop a methodology for prioritizing outfalls for screening within the schedule described in the BMP.	
Were follow up investigations performed for all outfalls where screening characterized the outfall as potential, suspected or obviously having an illicit discharge? (yes/no)	☒ Yes (Objective achieved) ☐ No (See below) ☐ Partially (See below)
If no, explain why with a schedule for investigating outfalls characterized as potential, suspect or obvious for being subject to an illicit discharge: N/A	
Screening results are summarized in Appendix D. **Refer to Appendix C for detail of any follow-up actions necessary based on screening results.**	

Necessary documents for implementation are not provided in the annual report, but will be retained on file for 3 years.

Measure of Effectiveness Form	
Number of outfalls characterized as potential, suspect or obvious for an illicit discharge that received a follow up investigations:	7
Number of investigations that were closed:	0
Based on the percentage of investigations closed, provide rationale for the effectiveness or ineffectiveness of the BMP. If ineffective, describe modifications to the BMP to improve efficiency: The City's new IDDE Program Manual, developed to address requirements of the new general permit, began implementation July 1, 2014. Methods in the IDDE Manual require a follow-up investigation for outfalls characterized as potential, suspect or obvious. The IDDE tracking forms and methods in the Manual will be used in the follow-up and reported in subsequent reporting years. The number of investigations not closed are due to pending water test results and is not a reflection of the BMP being ineffective. No modifications to the BMP are required.	

BMP 3.4 Facilitate public reporting of illicit discharges and provide response (Section II B.3.d)
Description: The City will promote, publicize, and facilitate public reporting of illicit discharges into or from the City's MS4 with information describing an illicit discharge and contact information on the City's stormwater website and with inclusion of educational material described in BMP 1.2. The City will investigate all reports using methods and procedures described in the City's IDDE Program Manual described in BMP 3.3. Tracking of reports will be recorded in the IDDE Tracking form in Appendix D of the IDDE Program Manual. **Necessary documentation for implementation:** (1) Web address of posted material; (2) Educational material with illicit discharge reporting information; (3) Completed IDDE Tracking Form for each incident. **Responsible individual for implementation:** City Engineer and Fire Chief **Objectives and expected results in meeting measurable goals:** The objective is to first educate the public to recognize an illicit discharge and provide contact information that allows for the reporting of an observed illicit discharge. The ultimate objective is to investigate and eliminate reported illicit discharges. **Implementation schedule**: Illicit discharge material and contact information will be made available on the website in the 2015-2016 reporting year. Response to illicit discharge reports will be on-going, occurring in response to reports per the IDDE Manual. **Method to determine effectiveness:** Effectiveness will be measured by the percentage of illicit discharge reports that are closed (as will be documented in the IDDE Tracking Forms).

BMP 3.4 Annual Reporting Form
Illicit Discharge Reports
Refer to reporting for BMP 3.2 for follow-up actions necessary based on reported illicit discharges.

Necessary documents for implementation are not provided in the annual report, but will be retained on file for 3 years.

Measure of Effectiveness Form	
Total # of potential illicit discharges reported by the public for the reporting year:	0
Total # of potential illicit discharge reported by the public for the reporting year:	0
Percentage of reported illicit discharge instances that have been closed:	100
Were all potential illicit discharge reports resolved? (yes/no)	☐ Yes (BMP Effective) ☐ No (See below) ☒ N/A (No reports)
If no, provide explanation of why reports were not resolved and, if necessary, modifications needed for the BMP to improve effectiveness: N/A	

BMP 4.1 ESC compliance for land disturbance activities (Section II B.4.a-c3, c5 c6, e1-6)

Description: Regulated land disturbance activity in the City of Salem is subject to Chapter 30, Article III of the City Code (Erosion and Sediment Control). Regulated land disturbance activities are those defined in §62.1-44.15:51 of the Code of Virginia that result in the disturbance of 5,000 square feet or greater and those 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 5,000 square feet or greater. The City utilizes an agreement in lieu of a plan as provided in §62.1-44.15:55 of the Code of Virginia for this category of land disturbances.

Section 30-92 of Article III requires a land disturbance permit from the City prior to engaging in land disturbance activity that is conditioned on an approved erosion and sediment control plan or an agreement in lieu of a plan in accordance with the Erosion and Sediment Control Law (§62.1-44.15:51 et seq. of the Code of Virginia). Plans shall be compliant with the minimum standards identified in 9VAC25-840-40 of the Erosion and Sediment Control Regulations.

Section 30-90 of Article III provides legal authority for the City to conduct inspections with an inspector holding an ESC Inspector's Certification from DCR/DEQ. Inspections will be conducted:

- ✓ Upon initial installation of erosion and sediment controls;
- ✓ At least once during every two-week period;
- ✓ Within 48 hours of any runoff-producing storm event; and
- ✓ Upon completion of the project and prior to the release of any applicable performance bonds.

Section 30-90 of Article III also provides legal authority for the City to require compliance with the approved plan and require changes to an approved plan when an inspection finds that the approved plan is inadequate.

Necessary documentation for implementation: (1) Chapter 30, Article III of the City Code; (2) ESC Plan(s) approved by the City, including procedures and documents used in plan review (e.g. checklists); (3) Documentation of ESC Inspector Certification; (4) Completed ESC Inspection Forms for each regulated project; (5) Notice to Comply and/or Stop Work Orders documentation and documentation of follow-up actions.

Responsible individual for implementation: City Engineer

Objectives and expected results in meeting measurable goals: The objective is to ensure ESC plans are prepared and approved according to ESC Laws and Regulations, inspections are performed as specified in the regulations, and that correction or enforcement, when appropriate, occurs when inspections find deficiencies. The expected result is that ESC is effective at all regulated land disturbance activities in the City.

Implementation schedule: The implementation of this BMP will be on-going with all regulated land disturbance activities in the City that disturb greater than 5,000 square feet.

Method to determine effectiveness: Effectiveness will be measured by the number of enforcement actions (notice to comply or stop-work order).

BMP 4.1 Annual Reporting Form				
Total sites for reporting year subject to ESC Ordinance (Exceeding 5,000 sf) other than those issues an agreement in lieu of a plan =				8
Regulated ESC Land Disturbance			Construction Site Inspection Forms	
Activity Description	Approved and bonded ESC plan (yes/no)	Total disturbed acreage	Number of inspections	# of enforcement actions taken
Pine Ridge Nursery	☒ Yes ☐ No	0.23	7	0
Roanoke Co. DSS Parking Lot	☒ Yes ☐ No	0.34	11	0
VA Varsity Storage	☒ Yes ☐ No	1.04	10	0
Home Stay Inn	☒ Yes ☐ No	0.26	8	1
Cliff View	☒ Yes ☐ No	3.5	23	4
Missile Baits	☒ Yes ☐ No	1.0	7	1
Parkway Brewery Parking Lot Expansion	☒ Yes ☐ No	0.77	4	1
Kroger Fuel Center R-320	☒ Yes ☐ No	0.8	4	0
	☐ Yes ☐ No			
	☐ Yes ☐ No			
	☐ Yes ☐ No			
	☐ Yes ☐ No			

Necessary documents for implementation are not provided in the annual report, but will be retained for a minimum of 3 year and are available upon request.

Measure of Effectiveness Form	
For the sites listed above, do the number of enforcement actions (notice to comply or stop work orders) seem excessive?	☒ No (BMP effective) ☐ Yes (See below) ☐ N/A (No activities)
Discuss the nature of excessive enforcement action issues. Provide rationale that determines if the BMP is effective or ineffective. If ineffective, what modifications could improve effectiveness? The City implements an ESC Program and enforcement of the program through enforcement actions enhances effectiveness.	

BMP 4.2 Receive and respond to complaints regarding land disturbing activity (Section II B.4.c4)
Description: The City will promote to the public through the stormwater webpage information on land disturbance erosion and sediment controls and provide a contact number for reporting complaints regarding regulated land disturbing activities. The City will initiate investigation of all reports within 72-hours and address the issue with the construction site operator by requiring maintenance to ESC controls, or plan modifications, as necessary, in accordance with BMP 4.1. **Necessary documentation for implementation:** (1) Web address of posted material; (2) Land disturbance complaint/report tracking record with date, description, and resolution for each complaint (the City will utilize the IDDE Tracking Form in Appendix D of the City's IDDE Program Manual for documentation) . **Responsible individual for implementation:** City Engineer **Objectives and expected results in meeting measurable goals:** The objective is to educate the public to understand the purpose of ESC controls on a land disturbance activity, recognize the off-site impacts resulting from potential failure of ESC controls, and provide contact information that allows for the reporting of an off-site impact and ultimately the resolution of a reported issue. **Implementation schedule**: Information regarding ESC controls for land disturbance activities and for reporting complaints will be made available on the website in the 2015-2016 reporting year. **Method to determine effectiveness:** Effectiveness will be measured by the percentage of resolved complaints that are reported by the public.

BMP 4.2 Annual Reporting Form			
The total number of complaints from the public related to land disturbance activity during the reporting year:			See below
Complaint #	Date of complaint	Description of complaint	Resolution of the investigation
See below	N/A	N/A	N/A
See below	N/A	N/A	N/A
See below	N/A	N/A	N/A

Necessary documents for implementation are not provided in the annual report, but will be retained on file for 3 years.

Measure of Effectiveness Form	
Were all complaints resolved?	☒ Yes (BMP effective) ☐ No (See below) ☐ N/A (no complaints)
Describe the reason for any unresolved complaint and any necessary program modifications to ensure complaints are resolved in the future. If no modifications are needed, provide rationale: Complaints called in related to land disturbance were taken care of by inspectors, typically on the same day. Complaints were not logged and corrective actions were taken as necessary as part of enforcement. A system to log and track complaints will be implemented with the 2015-2016 reporting year.	

BMP 4.3 Ensure land disturbance activities secure VSMP General Permit (Section II B.4.c.7, d)
Description: Regulated land disturbance activities are subject to Chapter 30, Article IV of the City Code (Stormwater Management Ordinance). Section 30-138.J of Article VI requires evidence that the General VPDES Permit for Discharges of Stormwater from Construction Activities (VAR 10 General Permit) is obtained prior to the issuance of a land disturbance permit. The VAR10 General Permit and Section 30-142 of Article VI requires a Pollution Prevention Plan for regulated land disturbances equal to or greater than an acre. Through the development and implementation of the Pollution Prevention Plan, appropriate controls to prevent non-stormwater discharges such as wastewater, concrete washout, fuels and oils, and other illicit discharges will be implemented. ESC inspections described in BMP 4.1 will include inspection components that ensure implementation of Pollution Prevention Plans. **Necessary documentation for implementation:** (1) Chapter 30, Article IV of the City Code; (2) Project-specific Pollution Prevention Plan (maintained within SWPPPS on construction sites by the site operator); (3) Record of evidence of General Permit coverage for regulated construction activity **Responsible individual for implementation:** City Engineer **Objectives and expected results in meeting measurable goals:** The objectives are: (1) To provide a mechanism for assuring that VSMP General Permit coverage is obtained for all land disturbances exceeding 1-acre. The expected result is that coverage is obtained for all applicable land disturbances prior to commencement of the activity; (2) Ensure development and implementation of Pollution Prevention Plans through the contractor's requirement to develop and implement the SWPPP per the VAR10. **Implementation schedule**: The City will continue verifying regulated land disturbances greater than or equal to 1-acre will obtain a VAR10 General Permit prior to commencement of land disturbance activity. **Method to determine effectiveness:** Effectiveness will be determined based on: (1) all regulated land disturbance activity operating under VSMP General Permit coverage and a SWPPP, (2) the number of violations related to pollution prevention from construction activity as identified in the reporting for BMP 3.2, 3.3, 3.4, and 4.2.

BMP 4.3 Annual Reporting Form			
The total number of regulated land disturbance activities during the reporting year requiring a VAR10 General permit (greater than or equal to 1-acre):			5
1	2	3	4
Regulated Land Disturbance Activity Description	Was VSMP General Permit coverage obtained? (yes/no)	Is a SWPPP available on site for the project? (yes/no)	Any illicit discharge reports from the activity? (see reporting for BMPs 3.2, 3.3, 3.4, and 4.2) (yes/no)
VA Varsity Storage	☒ Yes ☐ No	☒ Yes ☐ No	☐ Yes ☒ No
Cliff View	☒ Yes ☐ No	☐ Yes ☒ No	☐ Yes ☒ No
Heritage Downs	☒ Yes ☐ No	☒ Yes ☐ No	☐ Yes ☒ No
Roanoke College Cregger Center	☒ Yes ☐ No	☒ Yes ☐ No	☐ Yes ☒ No
Elizabth Campus (fill site for Cregger)	☒ Yes ☐ No	☒ Yes ☐ No	☐ Yes ☒ No

Necessary documents for implementation are not provided in the annual report, but will be retained on file for 3 years.

Measure of Effectiveness Form	
If no is answered in columns 2 or 3 above, explain why and actions to be taken to address the issue. Include rationale that describes if they BMP is ineffective, and if so, modification to the BMP to improve effectiveness: The Cliff View site is inspected by DEQ with a letter of corrective action pending and is not a reflection of the BMP being ineffective. No modifications to the BMP are required.	
Is yes answered in any row in column 4? (yes/no)	☐ Yes (See below) ☒ No (Effective BMP) ☐ N/A (No activity)
If yes in the question above, describe the instance(s) and provide rationale if BMP modification is necessary to improve the effectiveness of the BMP? If not necessary, provide rationale for no modification. N/A.	

BMP 5.1 Compliance to post-construction stormwater management regulation (Section II B.5.a, b. d.1,2)
Description: New development and development on prior developed lands in the City of Salem is subject to Chapter 30, Article IV of the City Code (Stormwater Management Ordinance) that ensure post-construction stormwater management (SWM) for all regulated land disturbance activities over 5,000 square feet through plan approval by the City. Approval from the City will ensure the SWM Plan has been prepared per the VSMP Regulations that, in part, require that stormwater runoff controls: • are designed and installed in accordance with the appropriate water quality and water quantity design criteria as required in Part II (9VAC25-870-40 et seq.) of 9VAC25-870; and • Have an inspection and maintenance plan recorded at the local courthouse. The City will retain a copy of each SWM facility inspection and maintenance plan from the approved stormwater management plan for proposed stormwater management facilities to be used with the implementation of BMP 5.3. A stormwater facility maintenance agreement will be required to be recorded prior to plan approval. **Necessary documentation for implementation:** (1) City approved SWM Plans and Calculations (maintained on active construction sites); (2) Material used for plan review (e.g. checklists, BMP Clearinghouse Standards and Specifications); (3) SWM Facility Inspection and Maintenance Plans for approved projects with SWM facilities; (4) Proof of recordation of inspection and maintenance agreements. **Responsible individual for implementation:** City Engineer **Objectives and expected results in meeting measurable goals:** The objective is to ensure regulated projects are in compliance with the VSMP Stormwater Management Regulations. The expected goal is that all regulated projects have City approved SWM Plans with recorded SWM facility inspection and maintenance plans. **Implementation schedule**: The implementation of this BMP began July 1, 2014 with the adoption of Chapter 30, Article IV of the City Code. **Method to determine effectiveness:** Effectiveness will be measured by: (1) all regulated land disturbance activities having a City approved SWM Plan; and (2) all stormwater management facilities with recorded inspection and maintenance plans and/or agreements, where applicable.

BMP 5.1 Annual Reporting Form			
The total number of land disturbance activities subject to the SW Ordinance other than those issued an agreement in lieu of a plan (>5,000 sf):			3
1	2	3	4
Land Disturbance Activity subject to SWM (same as BMP 4.1)	Does it have an approved SWM plan? (yes/no)	Does it have an inspection and maintenance plan? (yes/no/no facility required)	Maintenance agreement recorded? (yes/no/no facility)
Heritage Downs	☒ Yes ☐ No	☒ Yes ☐ No ☐ No Facility	☒ Yes ☐ No ☐ No Facility
Home Stay Inn	☒ Yes ☐ No	☒ Yes ☐ No ☐ No Facility	☒ Yes ☐ No ☐ No Facility
Missile Baits	☒ Yes ☐ No	☒ Yes ☐ No ☐ No Facility	☒ Yes ☐ No ☐ No Facility
	☐ Yes ☐ No	☐ Yes ☐ No ☐ No Facility	☐ Yes ☐ No ☐ No Facility
	☐ Yes ☐ No	☐ Yes ☐ No ☐ No Facility	☐ Yes ☐ No ☐ No Facility
	☐ Yes ☐ No	☐ Yes ☐ No ☐ No Facility	☐ Yes ☐ No ☐ No Facility
	☐ Yes ☐ No	☐ Yes ☐ No ☐ No Facility	☐ Yes ☐ No ☐ No Facility
	☐ Yes ☐ No	☐ Yes ☐ No ☐ No Facility	☐ Yes ☐ No ☐ No Facility
	☐ Yes ☐ No	☐ Yes ☐ No ☐ No Facility	☐ Yes ☐ No ☐ No Facility
	☐ Yes ☐ No	☐ Yes ☐ No ☐ No Facility	☐ Yes ☐ No ☐ No Facility
	☐ Yes ☐ No	☐ Yes ☐ No ☐ No Facility	☐ Yes ☐ No ☐ No Facility
	☐ Yes ☐ No	☐ Yes ☐ No ☐ No Facility	☐ Yes ☐ No ☐ No Facility
	☐ Yes ☐ No	☐ Yes ☐ No ☐ No Facility	☐ Yes ☐ No ☐ No Facility

BMP 5.1 Annual Reporting Form cont.	
The total number of agreements in lieu of plans for single family home projects issued during the reporting year:	28

Measure of Effectiveness Form	
➢ Was yes answered for all activities in Column 2 in the Annual Reporting Form on the previous page?	☒ Yes (BMP effective) ☐ No (See below) ☐ N/A (No activity)
Describe the reason for any activity that does not have an approved SWM plan and any necessary program modifications to the BMP to ensure an approved plan is obtained. If no modifications are needed, provide rationale: N/A	
➢ Was "yes" or "no facility" answered for all activities in Columns 3 or 4 in the Annual Reporting Form?	☒ Yes (BMP effective) ☐ No (See below) ☐ N/A (No activity)
Describe the reason for any activity that does not have an approved inspection and maintenance plan or agreement. Provide any necessary program modifications to ensure plans are obtained and agreements are recorded. If no modifications are needed, provide rationale: All necessary inspection and maintenance plans and maintenance agreements were completed therefore no BMP modifications are needed.	

BMP 5.2 Stormwater management facility tracking and reporting (Section II B.5.e)
Description: The City will maintain an updated electronic database in Excel format of all known stormwater management (SWM) facilities that discharge into the MS4. The database will include: • The unique SWM facility ID #; • The stormwater management facility type; • A general description of the facility's location, including the address or latitude and longitude; • The acres treated by the facility, including total acres, as well as the breakdown of pervious and impervious acres; • The date the facility was brought online (MMYYYY); • The sixth order hydrologic unit code (HUC) in which the stormwater management facility is located; • The name of any impaired water segments within each HUC listed on the 2010 § 305(b)/303(d) Water Quality Assessment Integrate Report to which the stormwater management facility discharges; • Whether the stormwater management facility is operator-owned or privately-owned; • The date of the last inspection. Upon acceptance of a newly constructed stormwater management facility, the facility will be included within the database. **Necessary documentation for implementation:** (1) Updated SWM Tracking and Reporting Excel database; (2) Completed inspection checklist forms (see BMP 5.3) **Responsible individual for implementation:** City Engineer **Objectives and expected results in meeting measurable goals:** The objective is to maintain an updated record of all of the SWM facilities. The expected result is that the list will be utilized to assist with implementation of BMP 5.3 and will be maintained as new SWM facilities come online. **Implementation schedule**: The maintenance of a BMP database will be on-going. Additional information required by the current MS4 General Permit, such as the impervious/pervious breakout of the drainage area to each BMP, will be completed by July 1, 2016. **Method to determine effectiveness:** Effectiveness will be measured by the completeness of the annually reported database.

BMP 5.2 Annual Reporting Form	
➢ The Stormwater Management Facility database is provided electronically in Excel as an enclosure with this annual report and also provided in Appendix E.	
Did any new SWM facilities come online during the reporting year? (yes/no)	☒ Yes ☐ No
If yes, was the electronic database updated? (yes/no)	☒ Yes ☐ No ☐ N/A (No new facilities)
If the database was not updated, explain why and describe any necessary modification to ensure the database is updated when new facilities come online: N/A	

Measure of Effectiveness Form	
Is the database complete to include all of the attributes for each new BMP described in this BMP and as required by the MS4 General Permit?	☐ Yes (BMP effective) ☒ No (See below) ☐ N/A (No facilities)
Describe the reason for that the database is incomplete and provide rationale that determines whether or not the BMP needs to be modified to ensure completion of the data base: See schedule for BMP to populate the database with additional attributes.	

BMP 5.3a Inspection, operation, and maintenance of City-owned SWM facilities (Section II B.5.c.2, d.3, 5)

Description: The City will perform long-term inspections and maintenance on all City-owned stormwater facilities utilizing the inspection and maintenance plans obtained from implementation of BMP 5.1. Where inspection and maintenance plans are not available from approved SWM plans, the City will utilize BMP-specific inspection and maintenance instruction from the City's Post-Construction Stormwater Management Program Manual. Inspections will be performed either:

- As dictated on the schedule provided on the inspection and maintenance plans; or
- A minimum of once annually, whichever are the more frequent criteria.

Inspections will be performed using the written procedures in the City's Post-Construction Stormwater Management Program Manual. BMP-type specific inspection and maintenance checklists provided in the Program Manual lists potential issues and methods to address each issue. Necessary maintenance identified during inspections will be conducted in a timely manner as indicated on the checklist or no later than the next scheduled inspection.

Necessary documentation for implementation: (1) BMP Database described in BMP 5.2; (2) BMP-specific Inspection and Maintenance Plan, if available; (3) The City of Salem Post-Construction Stormwater Management Program Manual; (4) Completed BMP Inspection Forms; (5) Documentation of maintenance performed, where necessary

Responsible individual for implementation: City Engineer

Objectives and expected results in meeting measurable goals: The objective is to ensure the intended function of all City-owned SWM facilities is maintained through long-term inspections and maintenance. The expected result is completed inspection forms and timely maintenance, when necessary.

Implementation schedule: The implementation of this BMP will be on-going, with the procedures specified in this BMP and the City's Post-Construction Stormwater Management Program Manual beginning July 1, 2014.

Method to determine effectiveness: Effectiveness will be measured by: (1) completion of required inspections, as scheduled, and (2) timely maintenance once a maintenance issue is identified during inspections.

BMP 5.3 Annual Reporting Form
Stormwater Management Facility Inspection Record*
The following information is provided in the SWM Facility database described in BMP 5.2: • SWM Facility ID • Inspection Schedule (e.g. monthly, quarterly, annually) • Dates of inspection(s) for the reporting year • If inspected, any identified necessary maintenance per inspection form • If maintenance is necessary, type and date the maintenance was performed

* Provided as electronic database with annual report in Excel format and hard copy as Appendix E. This BMP applies to those identified as "public" in the database.

Measure of Effectiveness Form	
➢ Do dates in the database indicate that inspections were performed for City-owned (public) BMPs at least once within the reporting year?	☐ Yes (BMP effective) ☒ No (See below)
Describe the reason for inspections that were not performed on City-owned BMPs and provide rationale that determines whether or not the BMP needs to be modified to ensure completion of inspections: Inspections for approximately 50% of the City-owned BMPs were conducted in September 2015, outside of the 2014-2015 reporting year. The reminaing City-owned BMPs will be inspected within the 2015-2016 reporting year. Going forward, inspections will be conducted annually as described in the Post-Construction SWM Program Manual and in this BMP.	
➢ Do dates in the database indicate that maintenance was performed, where necessary and in a timely manner?	☐ Yes (BMP effective) ☒ No (See below)
Describe the reason maintenance was not performed on City-owned BMPs in a timely manner (e.g. minor repair needed that does not affect function of the facility) and provide rationale that determines whether or not the BMP needs to be modified to ensure completion of inspections: The City has a Post-Construction SWM Program Manual. Inspections and maintenance will be conducted annually, as described in the Program Manual and in this BMP beginning July 1, 2015.	

BMP 5.3b Inspection, operation, and maintenance of privately-owned SWM facilities (Section II B.5.c.1, d.3, 5)

Description: The City will ensure long-term operations and maintenance of all privately-owned stormwater facilities utilizing the maintenance agreements and inspection and maintenance plans obtained from implementation of BMP 5.1. Where inspection and maintenance plans are not available from approved SWM plans, the City will utilize BMP-specific inspection and maintenance instruction from the City's Post-Construction Stormwater Management Program Manual. Inspections of all privately owner stormwater BMPs will be performed by the City at least once during every permit cycle (once per 5-years). Inspection for each facility may be satisfied by either:

- A field inspection conducted by the City using the written procedures and checklists in the City's Post Construction Stormwater Management Program Manual; or
- Documentation of an inspection conducted by the Owner or designee, provided the inspection was performed by a DEQ Certified SWM Inspector.

Division 7 of Chapter 30, Article IV of the City Code (Stormwater Management Ordinance) requires maintenance, inspection and repair of stormwater management facilities, where necessary.

Necessary documentation for implementation: (1) BMP Database described in BMP 5.2; (2) BMP-specific Inspection and Maintenance Plan, if available; (3) The City of Salem Post-Construction Stormwater Management Program Manual; (4) Documentation of inspections and maintenance performed, where necessary.

Responsible individual for implementation: City Engineer

Objectives and expected results in meeting measurable goals: The objective is to ensure the intended function of all privately-owned SWM facilities is maintained through long-term inspections and maintenance. The expected result is completed inspection forms and timely maintenance, when necessary, in accordance with the schedule described in the description above.

Implementation schedule: The implementation of this BMP will be on-going, with the procedures specified in this BMP and the City's Post-Construction Stormwater Management Program Manual beginning July 1, 2014.

Method to determine effectiveness: Effectiveness will be measured by: (1) Completion of required inspections, as scheduled, and (2) timely maintenance once a maintenance issue is identified during inspections.

BMP 5.3 Annual Reporting Form
Stormwater Management Facility Inspection Record*
The following information is provided in SWM Facility database described in BMP 5.2: • SWM Facility ID • Inspection Schedule (e.g. monthly, quarterly, annually) • Dates of inspection(s) for the reporting year • If inspected, any identified necessary maintenance per inspection form • If maintenance is necessary, type and date the maintenance was performed

* Provided as electronic database with annual report in Excel format and hard copy as Appendix E. This BMP applies to those identified as "private" in the database.

Measure of Effectiveness Form	
➢ Do dates in the database indicate that inspections were performed for at least 20% of the privately owned BMPs as necessary for each for the reporting year to achieve the 5-year objective?	☐ Yes (BMP effective) ☒ No (See below)
If less than 20% of privately-owned BMPs were inspected during the reporting year, provide a schedule to ensure 100% can be inspected prior to the end of the permit cycle (July 1, 2018): In the case that 20% of privately-owned BMPs are not inspected in a given reporting year, the difference shall be made up in succeeding reporting years. All private facilities will be inspected within the permit cycle, as described in the Post-Construction SWM Program Manual and this BMP.	
➢ Where inspection resulted in the identification of required maintenance, has the City notified the entity responsible of the maintenance needs with reference to the Stormwater Management Ordinance and a specified timeframe for completing the maintenance?	☒ Yes (BMP effective) ☐ No (See below)
If the entity responsible for maintenance has not been notified, explain: N/A	
Have notified entities performed maintenance within the time period specified by the City?	☒ Yes (BMP effective) ☐ No (See below) ☐ N/A (No instances)
If no to the previous question, was enforcement action taken?	☐ Yes (BMP effective) ☐ No (See below) ☒ N/A (No instances)
If enforcement action was taken, did it resolve the issue?	☐ Yes (BMP effective) ☐ No (See below) ☒ N/A (No instances)
If the issue was not resolved from enforcement action, described necessary modifications to the BMP to improve effectiveness: N/A	

BMP 6.1 Pollution Prevention Procedures for Operations & Maintenance Activities (Section II B.6.a)

Description: The City will develop and implement comprehensive written procedures for good housekeeping and pollution prevention for daily operations and equipment maintenance as described within the City's Good Housekeeping and Pollution Prevention Program Manual. At a minimum the Program Manual includes procedures with the following goals:

- Prevent illicit discharge;
- Ensure the proper disposal of waste materials, including landscape waste;
- Prevent discharge of municipal vehicle wash water to the storm sewer without authorization under a separate VPDES permit;
- Prevent the discharge of wastewater to the storm sewer without authorization under a separate VPDES permit;
- Require BMPs to filter water pumped from utility construction and maintenance activities;
- Require BMPs to prevent pollutants in runoff from stored and stockpiled materials (e.g. soil stockpiles and salt storage);
- Prevent pollution discharge from leaking municipal automobiles and equipment;
- Ensure application of materials, such as pesticides, is conducted in accordance with manufacturer's specifications.

Effective implementation will be supported with site-specific Stormwater Pollution Prevention Plans (SWPPPs) for high-priority areas as described in BMP 6.2 and the employee training described in BMP 6.3.

Necessary documentation for implementation: (1) The City of Salem Good Housekeeping/Pollution Prevention Program Manual; (2) Site-specific SWPPPs; (3) Training documentation; (4) Completed SWPPP Site Evaluation forms (see BMP 6.2).

Responsible individual for implementation: City Engineer

Objectives and expected results in meeting measurable goals: The objective is to minimize or prevent pollutant discharges from City operations and maintenance activities. The expected result is City staff's adherence to the City's Good Housekeeping/Pollution Prevention Manual resulting in minimal or no illicit discharges from municipal facilities and activities.

Implementation schedule: The Good Housekeeping/Pollution Prevention Manual is complete. Training will be provided biennially (annually while water quality issue #3 in BMP 1.2 is in place), with the initial training performed by July 1, 2015. Site-specific evaluations will be performed with the schedule described in BMP 6.2.

Method to determine effectiveness: Effectiveness will be measured by the results of the annual comprehensive site-specific compliance evaluations for high-priority facilities that will begin in the spring of 2016, as described in BMP 6.2. Measure of effectiveness for this BMP will be based on recurring issues identified during the site-specific evaluations.

BMP 6.1 Annual Reporting Form	
Good Housekeeping/Pollution Prevention Manual	
Has a Good Housekeeping/Pollution Prevention Manual been developed? (yes/no)	☒Yes ☐No
*** See BMPs 6.2 and 6.3 for additional reporting. ***	

Measure of Effectiveness Form
*** See BMP 6.2 for measure of effectiveness information. ***

BMP 6.2 Stormwater Pollution Prevention Plans (Section II B.6.b)

Description: The City will implement site-specific Stormwater Pollution Prevention Plans (SWPPPs) for City owned properties that have been identified as "high-priority" facilities according to Section II B.6.b.2 of the General Permit. The City's high priority facilities have been identified as the City's:

- City's Street and General Maintenance Facility
- Solid Waste Transfer Station

For each high-priority facility, a SWPPP will be developed to include:

- Mapping that identifies all outfalls, direction of flows, existing source controls, and receiving water bodies;
- A discussion and checklist of potential pollutants and pollutant sources;
- A discussion of all potential non-stormwater discharges;
- Written procedures, or reference to written procedures, designed to reduce and prevent pollutant discharge;
- A description of the applicable training described in BMP 6.3;
- Procedures to conduct an annual comprehensive site compliance evaluation; and
- 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.

The SWPPP will provide instruction for updates, as necessary, to reflect changes on the respective site, modifications to operations and maintenance procedures, or short-comings resulting in a reportable spill, as defined in the City's Good Housekeeping/Pollution Program Manual. Inspection forms will be completed in accordance with the prescribed schedule within the SWPPP and maintained on file with the on-site SWPPP.

Necessary documentation for implementation: (1) The City's Good Housekeeping/Pollution Prevention Manual; (2) Site-Specific SWPPPs for high-priority facilities; (3) Completed annual comprehensive site compliance evaluation.

Responsible individual for implementation: City Engineer

Objectives and expected results in meeting measurable goals: The objective and expected result is to minimize or prevent pollutant discharges from the City's high-priority facilities through adherence to the site-specific SWPPPs.

Implementation schedule: The City has identified high priority facilities that require SWPPPs. SWPPPs were completed or in progress by July 1, 2015, prior to the General Permit requirement schedule so that the annual comprehensive site compliance evaluation can begin being completed in the spring of each year beginning in 2016.

Method to determine effectiveness: Effectiveness will be measured by the results of the annual comprehensive high priority facility compliance evaluation, specifically the number of recurring issues identified in the annual comprehensive site compliance evaluations. Effectiveness will also be evaluated based on the number of illicit discharges observed or reported that originate from high-priority facilities.

BMP 6.2 Annual Reporting Form	
Stormwater Pollution Prevention Plan	
➢ Have SWPPPs been completed for each high priority facility identified in the BMP?	☐Yes ☒No
If no, explain: See schedule. High priority facility SWPPPs are not due until July 1, 2017.	
➢ Did any changes on high priority facilities that could potentially affect stormwater runoff occur during the reporting year (e.g. new outfalls, facilities)?	☐Yes ☐No
If yes, are the changes reflected in the SWPPP? (yes/no)	☐Yes ☐No
If the changes were not reflected, explain why: See Schedule.	

Necessary documents for implementation are not provided in the annual report, but will be retained on file for 3 years.

Measure of Effectiveness Form	
➢ Results from Comprehensive High Priority Site Compliance Evaluations	
Total number of recurring items originating from site-specific activities identified Spring 2017*:	TBD
Total number of recurring items originating from site-specific activities identified Spring 2018:	TBD
Total number of recurring items originating from site-specific activities identified Spring 2019:	TBD
Has the # of recurring items trended downward or remained at zero from year to year?	☒ Yes (BMP effective) ☐ No (See below)
If no, discuss the specific recurring items and describe how the BMP can be modified to improve effectiveness to specifically address recurring items (e.g. improved training, improved inspection form) or describe why modification is not necessary: N/A	
* Note that measure of effectiveness begins in 2017 since recurring items would not be available in 2016 with the first inspection.	
➢ Were any illicit discharges reported or identified in the reporting forms for BMPs 3.2 and 3.3 found to originate from high-priority facilities activities?	☐ Yes (See below) ☒ No (BMP effective)
If yes, describe how the BMP can be modified to improve effectiveness to specifically address the cause of the illicit discharge(s) or describe why modification is not necessary: N/A	

BMP 6.3a Employee Good Housekeeping/Pollution Prevention Training Plan (Section II B.6.d)

Description: The City has incorporated a written Training Plan into its Good Housekeeping/Pollution Prevention and IDDE Program Manuals, including a schedule of training events. The Program Manuals will serve as the training material and include Appendices to document training and list relevant staff for the following specific training:

- Annual training to relevant field personnel in the recognition and reporting of illicit discharges. Training will utilize the City's IDDE Manual described in BMP 3.3.
- Annual training to relevant employees in good housekeeping and pollution prevention practices that are to be employed during road and parking lot maintenance, around maintenance and operations facilities, and in and around recreational facilities. Training will utilize the City's Good Housekeeping/Pollution Prevention Manual described in BMP 6.1.

The plan will also require the following:

- Training or certification in spill response for emergency response employees.
- Training or certification for applying pesticides and herbicides in accordance with the Virginian Pesticide Control Act (§ 3.1-249.27 et seq. of the Code of Virginia) for employees performing applications.

For certifications as required under the Virginia Erosion & Sediment Control Law, see BMP 4.1.

Necessary documentation for implementation: (1) Training documentation or appropriate certifications for employees; (2) The City's IDDE Manual; (3) The City's Good Housekeeping/Pollution Prevention Program Manual.

Responsible individual for implementation: City Engineer

Objectives and expected results in meeting measurable goals: The objective is to ensure effective training on the procedures provided in the Good Housekeeping/Pollution Prevention and IDDE Program Manuals and to have them carried out during employee daily operations. The expected result is well trained employees that minimize pollutant discharge through good housekeeping practices and IDDE screening and source identification and elimination.

Implementation schedule: The written training plan is complete and incorporated in the City's Good Housekeeping/Pollution Prevention and IDDE Program Manuals. Training and certification requirements occurred prior to July 1, 2015, with illicit discharge and good housekeeping training occurring once every two years thereafter.

Method to determine effectiveness: Effectiveness will be measured by the results of a "Knowledge Check" quiz that will be taken by each employee that takes the training. The "Knowledge Check" quiz in provided in the Appendix of the Program Manuals.

BMP 6.3a Annual Reporting Form	
Training Plan	
Has the City's Written Training Plan been developed? (yes/no)	☒Yes ☐No
Training & Certifications	
Has employee training been provided? (yes/no)	☒Yes ☐No
If no, explain: N/A	
Date of latest training to relevant field personnel in the recognition and reporting of illicit discharges:	01/27/2015
Number of employees that participated in the latest training in the recognition and reporting of illicit discharges:	32
Date of last training to relevant employees in good housekeeping and pollution prevention practices:	01/27/2015
Number of employees that participated in the latest training in good housekeeping and pollution prevention practices:	32
Do the number of individuals reported above that participated in training represent all employees that conduct daily activities that could potentially affect stormwater runoff? (yes/no)	☒Yes ☐No
If no, explain: N/A	
Did any employees apply pesticides and herbicides? (yes/no)	☒Yes ☐No
If yes, identify the employee and their certification: Laura Reilly, #84080	
Provide a summary of the training or certification program provided to emergency response employees that includes training in spill response: Training is incorporated into Good Housekeeping and Pollution Prevention which occurs annually. The fire department receives regular emergency response training for spills.	

Necessary documents for implementation are not provided in the annual report, but will be retained on file for 3 years.

Measure of Effectiveness Form	
Did scores from the "Knowledge Check" quiz improve from the previous training? (yes/no)	☐ Yes (BMP effective) ☐ No (See below) ☒ N/A
If no, describe modifications to the BMP to increase effectiveness (e.g. training frequency, training material, etc.): The "Knowledge Check" comparison is part of the updated training plan that will begin with the next training provided per the BMP schedule.	

BMP 6.3b Contractor Certification for Pollution Prevention (Section II B.6.d.4)
Description: The City will require, through contract language, the certification for contractors applying pesticides and herbicides in accordance with the Virginian Pesticide Control Act (§ 3.1-249.27 et seq. of the Code of Virginia). Contract language will require contractors provide proof of the appropriate certification prior to contract execution. **Necessary documentation for implementation:** (1) Contract language; (2) Proof of certifications. **Responsible individual for implementation:** City Engineer **Objectives and expected results in meeting measurable goals:** The objective is to ensure the proper application of pesticides and herbicides. The expected result is that contractors used by the City will have appropriate certifications for application of pesticides and herbicides. **Implementation schedule**: The City will develop and begin implementation of contract language by July 1, 2016. **Method to determine effectiveness:** Effectiveness will be measured by evaluation of trends in confirmed reports of illicit discharge related to herbicides and pesticides.

BMP 6.3b Annual Reporting	
Pesticides and Herbicides	
Number of contracts executed during the reporting year that includes application of pesticides and herbicides?	2
Was proof of certification provided for each contract that includes the application of pesticides and herbicides? (yes/no)	☒ Yes ☐ No ☐ N/A (no contracts)
If no, explain:	N/A

Necessary documents for implementation are not provided in the annual report, but will be retained on file for 3 years.

Measure of Effectiveness	
Were any illicit discharges related to herbicides and pesticides application by contractors reported or identified in the reporting forms for BMPs 3.2 and 3.3?	☐ Yes (See below) ☒ No (BMP effective)
If yes, describe how the BMP can be modified to improve effectiveness to specifically address the cause of the illicit discharge(s) or describe why modification is not necessary: N/A	

BMP 6.4 Turf and Landscape Management (Section II B.6.c)
Description: The City will implement a turf and landscape nutrient management plan (NMPs) that has 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 City where nutrients are applied to a contiguous area greater than one acre. In addition, the City will not apply any deicing agent containing urea or other forms of nitrogen or phosphorus to parking lots, roadways, and sidewalks, or other paved surfaces. **Necessary documentation for implementation:** (1) City of Salem Nutrient Management Plan; (2) Completed Fertilizer Application Record; (3) Ingredients of deicers used. **Responsible individual for implementation:** City Engineer **Objectives and expected results in meeting measurable goals:** The objective is to avoid excessive application of nutrients where applied on City property subject to the NMP. The expected results are reduction of downstream impacts from nutrient loads through documented implementation of the NMP. **Implementation schedule**: Applicable lands subject to the NMP, those being a contiguous acre or more, have been identified. Implementation will ensure that 15% of the applicable lands are covered by July 1, 2015, 40% of the applicable lands by July 1, 2016, and 75 % by July 1, 2017 with complete coverage by July 1, 2018. **Method to determine effectiveness:** Effectiveness will be measured by the implementation of the NMP through completion of the application record and periodic updates to the NMP to make necessary adjustments based on soils conditions.

BMP 6.4 Annual Reporting Form		
Nutrient Management Plans		
Were nutrients used during the reporting year?	☒ Yes ☐ No	If no, no further reporting necessary for this BMP
Total acreage of lands where nutrient management plans are required:		70.3
Acreage of lands upon which nutrient management plans have been implemented:		0
Date of last NMP update:		08/01/2013
Total percentage of land where nutrient management plans are required and being implemented:		0
Does the percentage meet the schedule described in the BMP? (yes/no)		☒ Yes ☐ No
If no, explain and provide a schedule for achieving the required implementation requirement: N/A		

Necessary documents for implementation are not provided in the annual report, but will be retained on file for 3 years.

Measure of Effectiveness Form	
Was the NMP's fertilizer application record maintained and in adherence to the NMP? (yes/no)	☒ Yes (BMP effective) ☐ No (See below)
If no, describe how the BMP can be modified to improve effectiveness. Provide rationalization for modification or if modification is deemed unnecessary: Records are maintained consistent with the BMP implementation schedule.	

BMP 6.5 Contractor Safeguards to Ensure Program Consistent Measures and Procedures (Section II B.6.e)
Description: The City will use contract language that references sections within the City's Good Housekeeping and Pollution Prevention Manual to require City contractors use appropriate control measures and procedures for stormwater discharges, when applicable. Oversight will be provided through bi-weekly inspections using a contractor inspection form provided in the Manual. Contract language will require contractors address items identified during inspections within a time period appropriate to prevent the potential of non-stormwater discharges. The contract language will also allow the City to stop-work, address the problem, and recoup cost for the remedy from the contractor. Contract language described in this BMP is not intended for regulated land disturbance activity addressed with BMPs 4.1, 4.2, and 4.3. **Necessary documentation for implementation:** (1) City of Salem Good Housekeeping and Pollution Prevention Manual; (2) Completed inspection forms; (3) Contract language. **Responsible individual for implementation:** City Engineer **Objectives and expected results in meeting measurable goals:** The objective and expected result is to minimize or prevent pollutant discharges from contractor activities. **Implementation schedule**: As of July 1, 2015, the City has developed and executes contract language to require contractors to use appropriate control measures and procedures for stormwater discharges. **Method to determine effectiveness:** Effectiveness will be measured by the inspection results specific to work performed by contractors, the responsiveness of contractors to address observed issues, and reported illicit discharges originating from contracted municipal work in the City.

BMP 6.5 Annual Reporting Form	
Contractor Safeguards	
Has contract language, as described above, been included in contracts with all contractors where the work performed could require appropriate control measures and procedures for stormwater discharges? This does not include regulated land disturbance activity addressed with BMPs 4.1, 4.2, and 4.3 (yes/no)	☒Yes ☐No
If no, explain: N/A	
Were bi-weekly inspections performed to ensure oversight? (yes/no)	☒Yes ☐No ☐N/A (no contracts)
If no, explain: N/A	

Necessary documents for implementation are not provided in the annual report, but will be retained on file for 3 years.

Measure of Effectiveness Form	
Were any illicit discharges related to municipal contracted work (other than regulated land disturbance activity) reported or identified in the reporting forms for BMPs 3.2 and 3.3?	☐ Yes (See below) ☒ No (BMP effective)
If yes, describe how the BMP can be modified to improve effectiveness to specifically address the cause of the illicit discharge(s) or describe why modification is not necessary: N/A	

3.2 Special Conditions for Approved TMDL BMPs

BMP SC.1 Roanoke (Staunton) River Watershed TMDL Action Plan (Section I B)
Description: Salem has been assigned a waste load allocation (WLA) for PCBs in the Roanoke (Staunton) River Watershed TMDL approved on December 9, 2010. Salem will develop an action plan to address the WLA that includes: • A list of legal authorities applicable to reducing PCB; • Identification and methods for maintaining a list of practices, methods, and controls implemented to reduce the PCB; • Description of means for incorporation of identified practices, methods, and controls into the public education and outreach and employee training programs; • Results of an assessment of facilities of concern for significant contribution of PCB; • Develop methodology for assessing effectiveness of the TMDL Action Plan using modeling tools (in-lieu of water quality monitoring), specifically the Excel spreadsheet based Watershed Treatment Model (WTM). Assessment will also incorporate methodology for evaluation of facilities identified to significantly contribute to the POC; • An annual reporting worksheet consistent with the TMDL Action Plan and the General Permit. Additional BMP(s) will be included in this Section of the Program Plan, as necessary, to include implementation of the Action Plan. **Necessary documentation for implementation:** (1) Roanoke (Staunton) River Watershed TMDL Action Plan; (2) Salem Program Plan Updates, as necessary. **Responsible individual for implementation:** City Engineer **Objectives and expected results in meeting measurable goals:** The objective is to achieve reductions required by the Roanoke (Staunton) River Watershed TMDL for PCB. The expected result is the development of a TMDL Action Plan. **Implementation schedule**: The Roanoke (Staunton) River Watershed Action Plan will be developed by July 1, 2016. The schedule developed in the Action Plan will be implemented thereafter. **Method to determine effectiveness:** Effectiveness will be determined by the selection of cost effective BMPs supported by model quantification to achieve the required pollutant reductions.

BMP SC.1 Annual Reporting Form	
Roanoke (Staunton) River Watershed Action Plan	
Has the Salem Roanoke (Staunton) River Watershed Action Plan been developed?	☐ Yes ☒ No
If no, please explain and provide expected date of completion: See BMP implementation schedule.	

Necessary documents for implementation are not provided in the annual report, but will be retained on file for 3 years.

Measure of Effectiveness Form	
Does quantification demonstrate the selected means and methods in the completed Action Plan can achieve the required reductions in the required time frames?	☒ Yes ☐ No
If no, explain how the Action Plan can be modified to achieve the required reductions in the required time frames: N/A	

BMP SC.2 Upper Roanoke River Watershed TMDL Action Plan (Section I B)
Description: Salem has been assigned a waste load allocation (WLA) for E. Coli in the Upper Roanoke River Watershed TMDL approved on June 27, 2007. Salem will develop an action plan to address the WLA that includes: • A list of legal authorities applicable to reducing E. coli; • Identification and methods for maintaining a list of practices, methods, and controls implemented to reduce the E. Coli; • Description of means for incorporation of identified practices, methods, and controls into the public education and outreach and employee training programs; • Results of an assessment of facilities of concern for significant contribution of E. Coli; • Develop methodology for assessing effectiveness of the TMDL Action Plan using modeling tools (in-lieu of water quality monitoring), specifically the Excel spreadsheet based Watershed Treatment Model (WTM). Assessment will also incorporate methodology for evaluation of facilities identified to significantly contribute to the POC; • An annual reporting worksheet consistent with the TMDL Action Plan and the General Permit. Additional BMPs will be included in this Section of the Program Plan, as necessary, to include implementation of the Action Plan. **Necessary documentation for implementation:** (1) Upper Roanoke River Watershed TMDL Action Plan; (2) Salem Program Plan Updates, as necessary. **Responsible individual for implementation:** City Engineer **Objectives and expected results in meeting measurable goals:** The objective is to achieve reductions required by the Upper Roanoke River Watershed TMDL for E. Coli. The expected result is the development of a TMDL Action Plan. **Implementation schedule**: The Upper Roanoke River Watershed Action Plan was developed by July 1, 2015. The schedule developed in the Action Plan will be implemented thereafter. **Method to determine effectiveness:** Effectiveness will be determined by the selection of cost effective BMPs supported by model quantification to achieve the required pollutant reductions.

BMP SC.2 Annual Reporting Form	
Upper Roanoke River Watershed Action Plan	
Has the Salem Upper Roanoke River Watershed Action Plan been developed?	☒ Yes ☐ No
If no, please explain and provide expected date of completion: N/A	

Necessary documents for implementation are not provided in the annual report, but will be retained on file for 3 years.

Measure of Effectiveness Form	
Does quantification demonstrate the selected means and methods in the completed Action Plan can achieve the required reductions in the required time frames?	☒ Yes ☐ No
If no, explain how the Action Plan can be modified to achieve the required reductions in the required time frames: N/A	

BMP SC.3 Upper Roanoke River Watershed TMDL Action Plan (Section I B)
Description: Salem has been assigned a waste load allocation (WLA) for sediment in the Upper Roanoke River Watershed TMDL approved on September 7, 2006. Salem will develop an action plan to address the WLA that includes: • A list of legal authorities applicable to reducing sediment; • Identification and methods for maintaining a list of practices, methods, and controls implemented to reduce the sediment; • Description of means for incorporation of identified practices, methods, and controls into the public education and outreach and employee training programs; • Results of an assessment of facilities of concern for significant contribution of sediment; • Develop methodology for assessing effectiveness of the TMDL Action Plan using modeling tools (in-lieu of water quality monitoring), specifically the Excel spreadsheet based Watershed Treatment Model (WTM). Assessment will also incorporate methodology for evaluation of facilities identified to significantly contribute to the POC; • An annual reporting worksheet consistent with the TMDL Action Plan and the General Permit. Additional BMPs will be included in this Section of the Program Plan, as necessary, to include implementation of the Action Plan. **Necessary documentation for implementation:** (1) Upper Roanoke River Watershed TMDL Action Plan; (2) Salem Program Plan Updates, as necessary. **Responsible individual for implementation:** City Engineer **Objectives and expected results in meeting measurable goals:** The objective is to achieve reductions required by the Upper Roanoke River Watershed TMDL for sediment. The expected result is the development of a TMDL Action Plan. **Implementation schedule**: The Upper Roanoke River Watershed Action Plan was developed by July 1, 2015. The schedule developed in the Action Plan will be implemented thereafter. **Method to determine effectiveness:** Effectiveness will be determined by the selection of cost effective BMPs supported by model quantification to achieve the required pollutant reductions.

BMP SC.3 Annual Reporting Form	
Upper Roanoke River Watershed Action Plan	
Has the Salem Upper Roanoke River Watershed Action Plan been developed?	☒ Yes ☐ No
If no, please explain and provide expected date of completion: N/A	

Necessary documents for implementation are not provided in the annual report, but will be retained on file for 3 years.

Measure of Effectiveness Form	
Does quantification demonstrate the selected means and methods in the completed Action Plan can achieve the required reductions in the required time frames?	☒ Yes ☐ No
If no, explain how the Action Plan can be modified to achieve the required reductions in the required time frames: N/A	

Appendix A – BMP 2.2 Documentation of Public Participation Activities

EXPO
SALEM STREET DEPT
SALEM STREET DEPT
SALEM STREET DEPT

2015 Industry & Public Works EXPO
Project: Drop Inlet Protection
BMP: Block & Stone DI Filter
Materials:
$0.52 4 SF Landscape fabric
$1.00 4 SF Poultry mesh
$30.00 1 CY #57 stone
$14.90 10 (8x8x16) Concrete blocks
Cost:
$46.42
This project presented by: City of Roanoke

2015 Industry & Public Works EXPO
This project presented by: Town of Vinton
2015 Industry & Public Works EXPO
Project: Bacteria Source Identification & Issues
BMP: Education/Good Housekeeping
Materials: N/A
Cost: Education and Training $???
This project presented by: Town of Vinton
DST-6
TYHCO
ARE YOU
www.facebook.com/InVinton

Industry & Public Works EXPO

THIS DOOR TO REMAIN OPEN WHILE VEHICLES ARE OPERATING INSIDE
2015 Industry & Public Works EXPO
Project: Curb Inlet Protection
BMP: Gravel Sediment Filter or Block & Gravel Sediment Filter
Materials:
$15.00 Cinderblocks & 2x4 (block/gravel)
$15.00 Wire mesh, 1/2" openings
$25.00 VDOT #3, #357, or #5 stone
Cost: $40.00 (gravel) / 55.00 (block/gravel)*
* Actual cost varies depending on curb inlet length and therefore quantities/volumes of materials
This project presented by: City of Salem

BMP's
GROUND
CONTROL
Storm Water Pollution Prevention
for Construction Sites
Industry & Public Works EXPO
Project: Drop Inlet Protection
BMP: Straw Bales
Materials:
Cost:
This project presented by: County of Roanoke

ROANOKE COUNTY
STORMWATER
WATERSHED

2015 Industry & Public Works EXPO

Project: Gutter/Swale Protection

BMP: Silt Fence and Gravel/Rock Check Dam

Materials:

- $4.60 Silt Fence (20 ft.)
- $7.80 Wood Stakes (5)
- $32.00 Gravel/Rock

Cost: $44.40

This project presented by: County of Roanoke

2015 Industry & Public Works EXPO

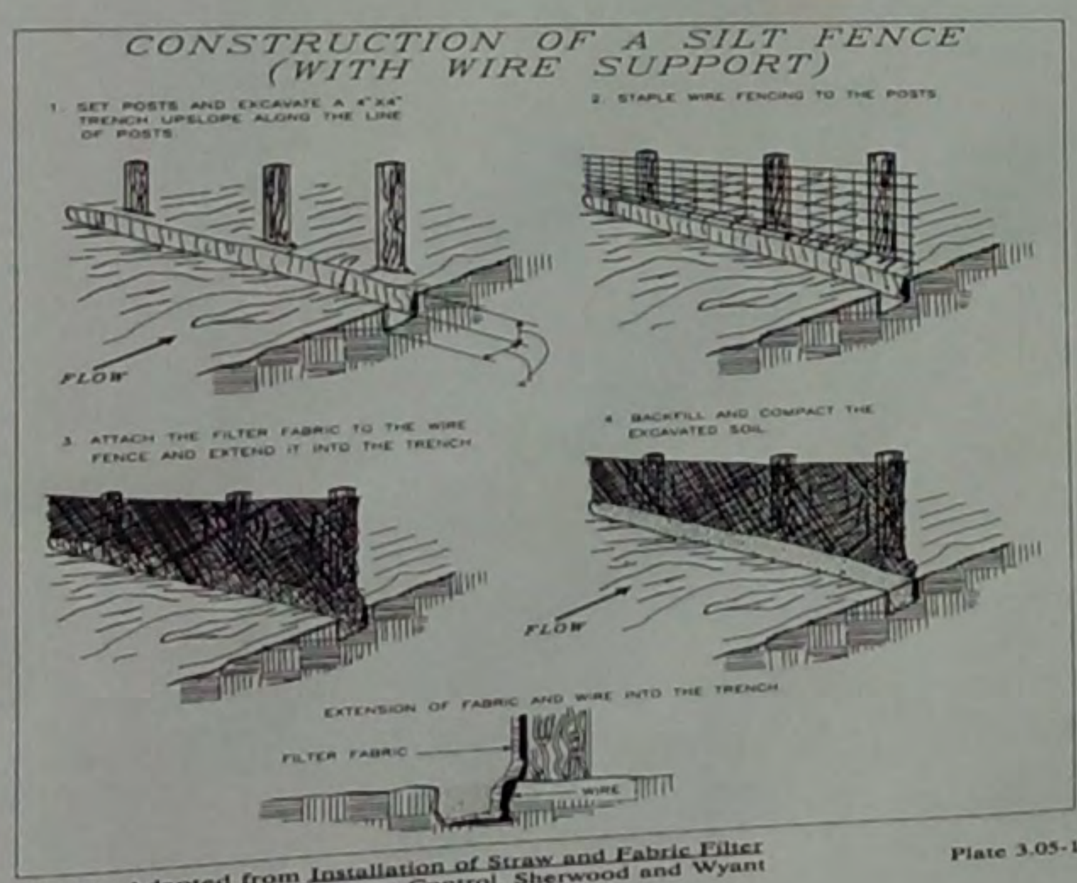
Project: Silt Fence

BMP: Proper silt fence installation

Materials: $40.00 100' PreFab Silt Fence/Stakes*

*Varies depending on manufacturer and volume

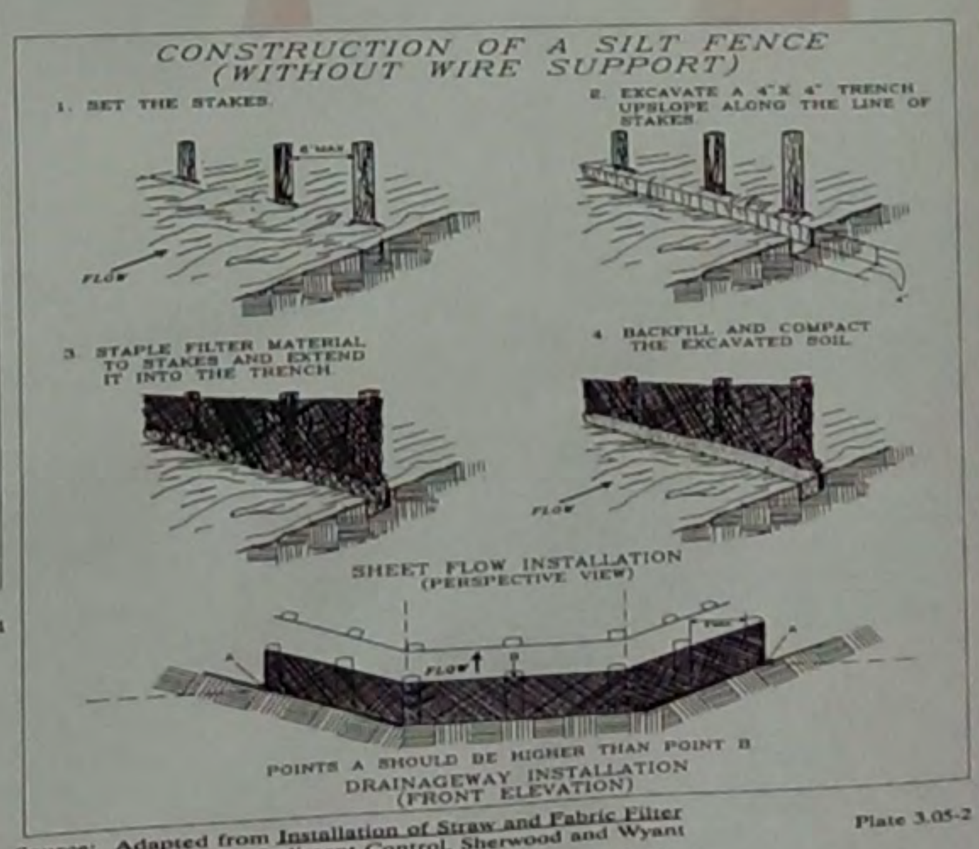
Cost: $40.00*



Source: Adapted from Installation of Straw and Fabric Filter Barriers for Sediment Control. Sherwood and Wyant

Image from VA Erosion and Sediment Control Handbook Chapter 3.05

http://www.deq.virginia.gov/Portals/0/DEQ/Water/StormwaterManagement/Erosion_Sediment_Control_Handbook/Chapter%203%20-%203.05.pdf



Source: Adapted from Installation of Straw and Fabric Filter Barriers for Sediment Control. Sherwood and Wyant

Image from VA Erosion and Sediment Control Handbook Chapter 3.05

http://www.deq.virginia.gov/Portals/0/DEQ/Water/StormwaterManagement/Erosion_Sediment_Control_Handbook/Chapter%203%20-%203.05.pdf

This project presented by: City of Salem

SALEM VA STORMWATER

boxley.com
McNeilus
BOXLEY
US DOT 4722

TYMCO
RST-6

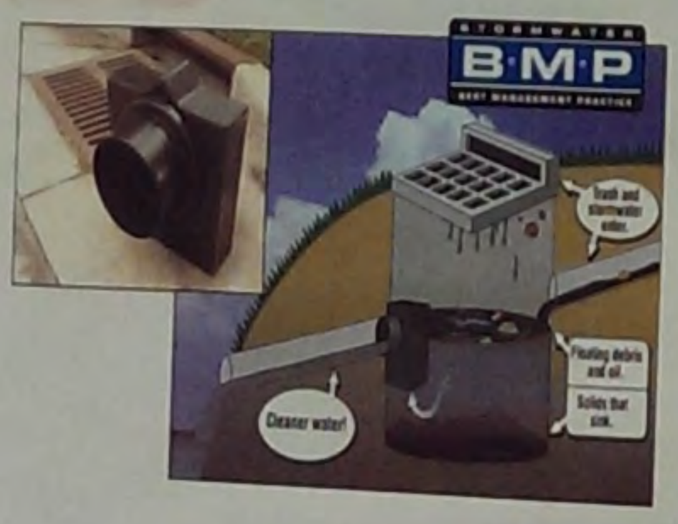
2015 Industry & Public Works EXPO

Project: Curb Guard/Inlet Protection

BMP: Filter Sock, Curbguard Insert, Oil/Debris Blocker, Cat Litter

Materials:

- $100.00—$450.00 Filter Sock (dep. on length)
- $70.00 — $300.00 Oil/Debris Blocker (dep. on size)
- $100.00 — $200.00 Curbguard Insert (dep. on size)
- $3.00 Cat Litter per 10 lbs.



This project presented by: Town of Vinton

Industry & Public Works EXPO
Project: Bacteria Source Identification & Issues
BMP: Education/Good Housekeeping
Industry & Public Works EXPO
ARE YOU
IN ?
www.facebook.com/InVinton

2015 Industry & Public Works EXPO

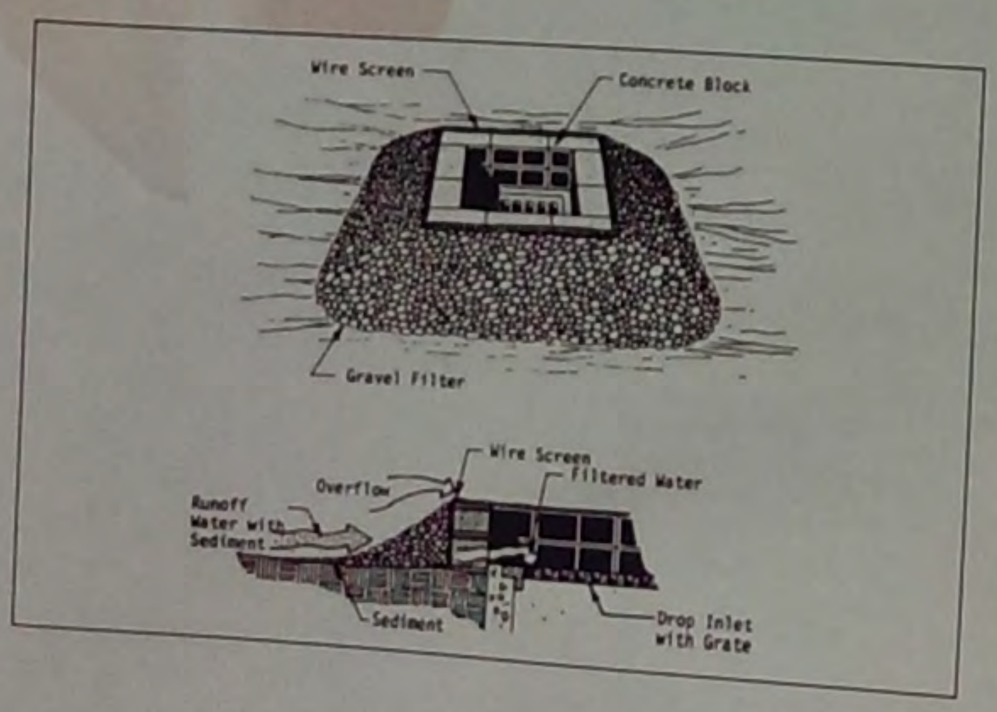
Project: Drop Inlet Protection

BMP: Block & Stone DI Filter

Materials:

$0.52	4 SF Landscape fabric
$1.00	4 SF Poultry mesh
$30.00	1 CY #57 stone
$14.90	10 (8x8x16) Concrete blocks

Cost: $46.42



This project presented by: City of Roanoke

2015 Industry & Public Works EXPO

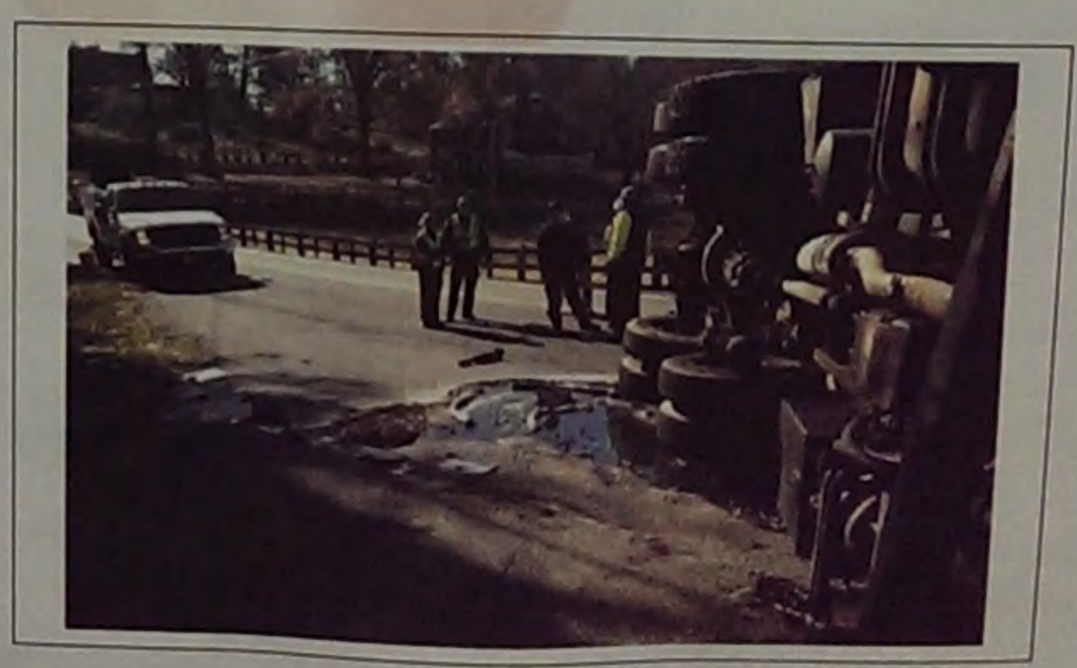
Project: Oil Spill Response

BMP: Petroleum Spill/Leak Response

Materials:

- $70.00/100 Oil-only, medium weight absorbent pad
- $125.00 Oil-only boom with clip links (5" x 10')
- $175.00 Urethane drain seal pad (24" x 24" x 3/8")
- $10.00/25 lbs. Granular absorbent

Cost: $380.00 (with leftover supplies)



This project presented by: City of Roanoke

CONCRETE WASHOUT
utpak
Washout
"Keeping your construction projects compliant"

P-535
ENGINEERING

Industry & Public Works EXPO
Industry & Public Works EXPO
SALEM STREET DEPT
SALEM STREET DEPT

Industry & Public Works EXPO
Project: Drop Inlet Protection
BMP: Block & Stone DI Filter
Industry & Public Works EXPO
Industry & Public Works EXPO
Project: Bacteria Source Identification & Issues
BMP: Education/Good Housekeeping
Industry & Public Works EXPO
Project: Curb Guard/Inlet Protection
Industry & Public Works EXPO
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DST-6
TYMCO

Industry & Public Works EXPO
Project: Silt Fence
BMP: Proper silt fence installation
Cost:
This project presented by: City of Salem
THIS DOOR TO REMAIN OPEN WHILE VEHICLES ARE OPERATING INSIDE
Industry & Public Works EXPO
Project: Curb Inlet Protection
BMP: Gravel Sediment Filter or Block & Gravel Sediment Filter
Materials: $15.80 Cinderblocks & 2x4 (block/gravel)
$15.80 Wire mesh, 1/2" openings
$25.80 VDOT #1 #357, w/ #5 stone
Cost: $40.00 (gravel) / $55.80 (block/gravel)*
This project presented by: City of Salem

THIS DOOR TO REMAIN OPEN WHILE VEHICLES ARE OPERATING INSIDE
DST-6
TYMCO
EXPO

2015
Industry & Public Works EXPO
Project: Drop Inlet Protection
BMP: Block & Stone DI Filter
Materials:
$0.52 4 SF Landscape fabric
$1.00 4 SF Poultry mesh
$30.00 1 CY #57 stone
$14.90 10 (8x8x16) Concrete blocks
Cost: $46.42
This project presented by: City of Roanoke
SALEM STREET DEPT

EXIT
2015 Industry & Public Works EXPO
Project: Oil Spill Response
BMP: Petroleum Spill/Leak Response
Materials:
$70.00/100 Oil-only, medium weight absorbent pad
$125.00 Oil-only boom with clip links (5" x 10')
$175.00 Urethane drain seal pad (24" x 24" x 3/8")
$10.00/25 lbs. Granular absorbent
Cost: $380.00 (with leftover supplies)
This project presented by: City of Roanoke
SALEM STREET DEPT
SALEM STREET DEPT

CARDBOARD ONLY
CARDBOARD ONLY
KILZ
RUM SPECIALTY
DSP-IL-58
42 PROOF
12.0 LITERS
SERIAL NO.
DSP-KY-31
10.5 LITERS
VODKA
JIM BEAM
Glidden
Odorless Mineral Spirits

F003176
Blue Rhino
It's not just gas
TEXACO
Anti-Freeze
Coolant
Quality Protection for
Gasoline and Heavy Duty
Diesel Engines.
1 U.S. GAL. (3.785 L)
SUPER TECH
Prestone
Shellzone
ROTELLA T
SPEEDHIDE Interior Enamel Eggshell-Latex

Kenmore cool
AT&T

CARDBOARD ONLY
Pampers
MILMARK
ADHESIVE
Copy Paper
Dulux
ACRYLIC SEMI-GLOSS
Eminence
Severe Weather
WATERPROOFING SEALER
FOR CONCRETE
ALL-WEATHER
OLYMPIC
Cold Bond
LITE
CLOSED

DRAGON
ORTHO
Diazinon Ultra Insect Spray
Product Facts
Miracle-Gro
4 in 1
TERMINIX

FIRE
HM1
HM1
APL
Mobil 1
SUPERTECH
SCHOLASTIC
AriZona

AT&T
Electronic Typewriter
SONY

CITY OF SALEM
FIRE
Acid
NEW
LIGHT WEIGHT
1.75 LITERS

CITY OF SALEM
STREETS &
VIRGINIA
1152VH

SIMPLE WAYS TO LOVE YOUR PET AND THE ENVIRONMENT!

Always clean up after your pets by properly disposing of their waste in the trash or even in a toilet. The City of Salem has Mutt Mitt dispensers located along the Roanoke Valley Greenway to assist you in this process. Simply slip a mitt or plastic bag on your hand, grab the waste, invert the bag and toss it.

DID YOU KNOW?

The **Salem Rotary Dog Park** is located at 1321 Indiana Street. It is open daily from 6am – 10pm and there are both large and small dog sections Check out **www.salemva.gov** for more information.

SALEM ROTARY DOG PARK

Dogs are not allowed in Salem Parks. Please take advantage of the Salem Rotary Dog Park and your Roanoke River Greenway.

FIVE THINGS YOU CAN DO TO REDUCE PET WASTE POLLUTION

1. Always clean up after your pet.
2. Bag dog waste & place it in the trash.
3. Flush pet waste down the toilet.
4. Never dispose of waste in storm drains.
5. Be a responsible dog owner.

City of Salem, Virginia
Engineering and Inspections Department
125 East Main Street
Salem, VA 24153
Phone: (540) 375-3032
Fax: (540) 375-4040
engineering.salemva.gov

SALEM VA
ENGINEERING DEPARTMENT

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Here's the Scoop

PROTECT YOUR FAMILY, YOUR COMMUNITY, YOUR DOG AND THE ROANOKE RIVER

CLEAN UP AFTER YOUR PET

SALEM VA
ENGINEERING DEPARTMENT

CITY OF SALEM STORMWATER MANAGEMENT PROGRAM

PET WASTE DISPOSAL, WATER QUALITY AND YOUR HEALTH

ARE YOU RISKING YOUR HEALTH?

When pet waste is left on the ground or disposed of improperly, water quality suffers and your health may also be at risk. Children who play outside are at the highest risk of infection from bacteria and parasites found in pet waste. Flies may also spread diseases found in pet waste.

Diseases that can be transmitted from pet waste to humans include:

CAMPYLOBACTERIOSIS: A bacterial infection carried by dogs and cats that frequently causes diarrhea in humans.

SALMONELLOSIS: The most common bacteria infection transmitted to humans by other animals. Symptoms include fever, muscle aches, headaches, vomiting and diarrhea.

Dog waste also contains roundworm, e. coli bacteria, tuberculosis, gastroenteritis, giardiasis, and cryptosporidiosis. You can significantly reduce these health risks by picking up after your pet.

ARE YOU POLLUTING OUR WATER?

The Roanoke River flows through the City of Salem. A 2006 George Mason University study conducted for the Virginia Department of Environmental Quality stated that 29% of the samples collected from the Roanoke River, between January 1, 1998 and December 31, 2002, exceeded the fecal coliform bacteria criteria standard. This bacteria is present in the intestinal tracts of all warm-blooded animals. It is an indicator of a potential health risk to anyone exposed to the water.

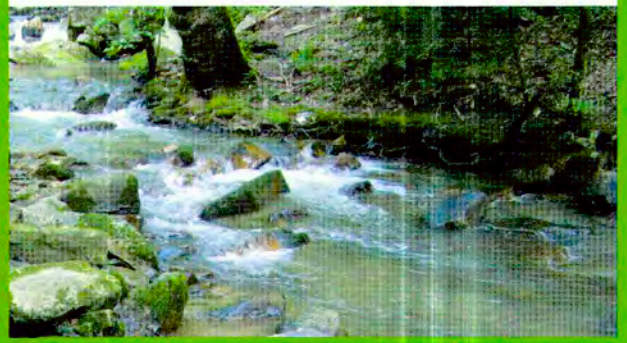
The nutrients and organic matter in pet waste can also cause significant water quality degradation. Excess nutrients can cause algae blooms that block sunlight and kill underwater vegetation. Decaying pet waste uses up dissolved oxygen in the water that fish and other aquatic life depend on to live.

Be a responsible pet owner and help keep the Roanoke River clean by picking up after your pet.

ARE YOU BEING RESPONSIBLE?

NO POOP ZONE

Pet waste is a significant source of fecal bacteria in Salem. When it is not properly disposed, it can wash into our storm drains. These storm drains do not connect to water treatment facilities and drain directly into Mason Creek and the Roanoke River.



Appendix B – BMP 3.1 Outfall Inventory

(Attributes to be completed to address General Permit per BMP schedule)

Outfall ID	Easting	Northing	Pipe Size (Inches)	Material/ Type	Area Drainage to Outfall (Acres)	Name of Receiving Water	Is Receiving Water Impaired (Yes/No)	Applicable TMDL(s)	Summary of Screening Results	Details of Any Necessary Followup	Date of Followup Resolution	Comments	# Inspections Completed During Reporting Year
107-04	11031284.36	3634541.766	15	CONC		Roanoke River							1
107-05	11031283.27	3634520.38	24	CONC		Roanoke River							1
107-06	11031271.59	3634473.851	18	CONC		Roanoke River							1
064-01	11025831.24	3637566.465	24	CONC		Roanoke River							1
068-01	11026258.64	3636884.41	18	CMP		Roanoke River							1
089-01	11026393.15	3635682.765	18	CONC		Roanoke River							1
089-02	11026491.17	3635453.802	15	CMP		Roanoke River							1
104-01	11026919.41	3634772.135	18	CMP		Roanoke River							1
104-02	11027028.15	3634496.68	15	CONC		Roanoke River							1
104-03	11027114.63	3634332.328	15	CMP		Roanoke River							1
025-03	11030277	3640490	15			Roanoke River							1
025-05	11030380	3640257.75	15			Roanoke River							1
039-01	11030721	3639683.25	18	CMP		Roanoke River			Partial Sediment				1
061-02	11030140	3637453.75	12			Roanoke River							1
061-07	11029715.67	3637019.947	15	CMP		Roanoke River							1
062-05	11028029.57	3637194.36	18	CONC		Roanoke River							1
068-04	11026341	3636338	15			Roanoke River							1
068-05	11026349.68	3636068.698	24	CMP		Roanoke River							1
068-07	11026376.72	3636085.161	24	CMP		Roanoke River							1
088-01	11026716.06	3635069.345	24	CMP		Roanoke River			Clear Water	Have water tested			1
088-02	11026803.82	3634926.626	18	CONC		Roanoke River							1
020-02	11031265	3640955.75	15			Mason Creek							1
020-04	11031394	3640912.5	15			Mason Creek			End Damaged				1
020-05	11031274	3640899	18	CMP		Mason Creek			Spring Fed	Have water tested			1
020-06	11031213.61	3641111.775	15	Conc		Mason Creek							1
020-07	11031198.16	3641146.747	15	CMP		Mason Creek			1/2 Sediment				1
026-02	11031415	3640791.75	15			Mason Creek							1
039-05	11030865	3639188.5	15			Roanoke River			Bottom Rusted				1
039-06	11030903	3639191.25	0			Roanoke River							1
060-03	11031473	3637811.75	48			Roanoke River			Open Channel w/ 1/2 pipe on top				1
060-05	11031650	3637463.75	24			Roanoke River			Bottom Rusted, Headwall Cut				1
060-07	11031657	3637257	36			Roanoke River							1
060-08	11031644	3637036	18	CMP		Roanoke River							1
060-09	11031645	3636944.5	18	CONC		Roanoke River							1
060-10	11031633	3636946	15	CMP		Roanoke River							1
060-11	11031644	3636906.75	18	CONC		Roanoke River							1
060-12	11031635	3636907.5	18	CONC		Roanoke River							1
072-01	11031815	3636603	24			Roanoke River			Clear Water	Have water tested			1
072-02	11031450	3635986.75	18			Roanoke River							1
072-03	11031677.03	3636740.846	15	CMP		Roanoke River							1
085-01	11031376	3635676.25	18			Roanoke River			Clear Water	Have water tested			1
085-02	11031360.99	3635742.248	24	CONC		Roanoke River							1
107-02	11031290	3634569	8	CMP		Roanoke River							1
121-05	11030101.45	3633071.661	12	FLUME		Roanoke River			12"x8" trapezoid				1
006-01	11035785	3643621.5	0	CONC		Mason Creek			8x12 box culvert				1
016-01	11037372	3641175.5	60	CMP		Mason Creek							1
034-01	11037505	3639580.25	18			Mason Creek							1
034-02	11037558	3639467.5	18			Mason Creek							1
048-01	11033508	3638470.5	30			Mason Creek			Partial Sediment				1
048-04	11033468	3638430.25	15	OTHER		Mason Creek							1
051-04	11038210.62	3638134.405	24	CMP		Mason Creek			2/3 Sediment, End Damaged				1
051-05	11038229	3638115.75	48			Mason Creek			1/3 Sediment				1
057-02	11035503.56	3637505.67	24	CONC		Mason Creek							1
057-03	11036047	3636976.75	15	CMP		Mason Creek							1
057-05	11036285.97	3636986.905	18	CONC		Mason Creek			End partially submerged in water				1
057-06	11036463.16	3637140.188	15	CMP		Mason Creek			Into cb				1
057-07	11036503	3637137	72	CMP		Mason Creek							1
006-03	11036505.68	3642919.57	15	HDPE		Mason Creek							1

012-04	11036466.7	3642819.887	24	CONC		Mason Creek			Spring Fed	Have water tested		2 24 CONC PIPES	1
030-02	11037078	3640848.25	24	CMP		Mason Creek			Spring Fed	Have water tested			1
030-06	11037280	3640074.5	24			Mason Creek							1
030-07	11037277	3640123.5	18			Mason Creek							1
030-08	11037187	3640096.75	15			Mason Creek							1
030-09	11037204	3640049.25	24			Mason Creek			Spring Fed	Have water tested			1
076-05	11037906.53	3636603.887											0
081-01	11037884.76	3635586.114	24	CONC									0
081-04	11037788.29	3635467.929	48	CONC									0
081-07	11037770.43	3635556.232											0
090-03	11024042.48	3635764.194	24	CONC									0
090-05	11024103.54	3635494.645	15	CONC									0
106-01	11029551.41	3634193.544	18	CONC									0
106-02	11029674.93	3634447.127											0
106-03	11029669.59	3634738.281											0
140-10	11023191.61	3632049.135	60	CMP									0
206-01	11021896.46	3629332.926	36	OTHER									0
206-02	11021826.21	3629236.541	48	CMP									0
034-03	11037391	3639667.75	30	CONC									0
034-09	11037759.39	3638923.629	15	OTHER								plastic	0
051-06	11038148.37	3638070.667	15	CONC									0
056-03	11037444	3637195.75	24	CONC									0
056-04	11037438	3637184.25	0	CONC									0
056-05	11037419	3637182.25	0	CONC									0
076-01	11037890.3	3636676.652	12	CMP								novozymes	0
076-02	11037787.43	3636444.287	15	CONC									0
081-05	11037972.92	3635262.379	24	CONC									0
081-06	11038023.7	3634903.154	48	CONC									0
219-07	11033582.18	3628122.569	48	CONC									0
219-10	11033859.55	3627915.142	24	CMP									0
231-05	11034452.57	3627546.505	56	CMP									0
231-06	11034368.72	3627404.132	18	CONC								culvert rr 7'	0
150-02	11038361.06	3632766.145	24	CMP									0
150-03	11038365.08	3632706.032	24	CONC									0
150-04	11038243.67	3632771.812	24	CONC									0
150-05	11038239.12	3632712.925	30	CONC									0
245-01	11029648.86	3626229.3	24	CONC									0
250-01	11038043.34	3626791.14	24	CONC									0
277-03	11036947.85	3624246.911	42	CONC									0
279-07	11038713.23	3623905.221	30	CONC									0
282-01	11038747.74	3623877.145	30	RCP									0
283-01	11038150.47	3623743.345	24	CONC									0
277-01	11036781.18	3624554.67	24	CONC									0
277-02	11036323.86	3624706.741	24	CONC									0
278-01	11037175.21	3624244.884	24	CMP									0
278-02	11037301.74	3624180.951	36	CMP									0
278-03	11037695.43	3624219.583	18	CONC									0
278-04	11038207.34	3624180.126	18	CMP									0
278-05	11038486.87	3624395.423	12	OTHER								plastic	0
279-02	11038973.9	3624490.129	18	CMP									0
279-03	11038984.34	3624369.121	18	OTHER									0
279-04	11038755.93	3624629.401	12	CONC									0
279-10	11038652.12	3624613.089	12	CONC									0
200-02	11029845	3629116	18										0
200-03	11029622.11	3629288.233	15	CMP									0
217-01	11029911	3628487.25	12										0
217-02	11030538	3628101	15										0
217-03	11030761.57	3627899.735	15	CMP									0
217-04	11029719.76	3628557.776	18	CMP									0
217-06	11030208.53	3627913.504	24	CONC									0
217-07	11030785.22	3628026.465	24	Open Trapezoid								Open Ditch trapezoid	0
217-09	11030893.74	3628042.161	24	CMP									0
218-01	11031071.94	3627980.659	18	CONC									0
218-02	11031053.14	3627980.616	24	OTHER									0

218-03	11031072.9	3627961.822	8	OTHER								pvc pipe	0
231-01	11034426.32	3627035.515	15	CONC									0
231-02	11034139.48	3627211.004	18	HDPE									0
231-07	11034435.82	3627102.184	30	OTHER								HDPE PIPE	0
233-05	11031340.66	3627885.614	18	CONC									0
233-06	11031687.06	3627746.482	18	CONC									0
163-01	11025493.18	3631052.952	15	CONC									0
164-01	11024772.38	3631443.046	15	CMP									0
164-02	11023581.82	3631607.505	15	CMP									0
165-01	11022331.5	3631413.239	24	CONC									0
165-03	11022710.5	3631227.838	15	CMP									0
165-04	11022674.68	3631411.724	15	CMP									0
165-05	11022726.47	3631414.277	15	CMP									0
165-06	11022613.56	3631230.598	54	CONC									0
178-01	11021618.67	3630695.833	48	CMP									0
178-02	11021634.44	3630587.133	24	OTHER								HDPE	0
181-01	11026246.34	3630058.836	48	CMP								Removed 2012 for Greenway	0
181-02	11026320.53	3630144.919	18	CONC									0
182-03	11027100.84	3630150.245	18	CMP									0
182-04	11027114.01	3630200.775	72	CMP									0
182-05	11027441.76	3630296.298	15	CONC									0
183-02	11028069.52	3630634.461	18	CMP									0
183-03	11028086.38	3630632.779	12	CMP									0
232-02	11033813.56	3627308.05	18	OTHER								hdpe	0
232-03	11033975.27	3627243.552	24	OTHER								hpde	0
233-02	11032055.96	3627559.083	18	OTHER								hdpe	0
233-03	11031426.1	3627727.429	24	RCP								outlet	0
233-04	11030998.68	3627832.625	24	CONC									0
234-01	11030955.54	3627863.148	18	OTHER								hdpe	0
248-01	11035263.86	3626186.522	24	CONC									0
248-02	11035255.03	3626107.816	15	CONC									0
248-04	11035260.43	3626191.216	24	RCP									0
248-05	11035084.16	3626140.69	15	CMP									0
248-06	11035116.59	3626074.119	36	RCP									0
259-01	11035358.63	3625351.19	24	CONC									0
259-02	11035201.84	3625506.639	18	CMP									0
259-03	11035153.44	3625850.872	18	CMP									0
020-03	11031362	3640983.5	15										0
039-03	11030772	3639498.25	24										0
039-04	11030835	3639256.5	24										0
042-02	11025766	3639333.5	60									3 60 pipes	0
043-01	11025330	3638494.75	24	CMP									0
048-02	11033468	3638420	0	CONC									0
048-03	11033476	3638403.5	0	CMP									0
051-01	11038274	3638664.5	36										0
056-02	11037442	3637178	18	CMP									0
061-03	11030136	3637454.5	48										0
061-04	11030180	3637373	48										0
061-08	11029743.48	3636972.628	48	CONC									0
061-09	11029541.18	3637435.485	24	CONC									0
068-06	11026361.37	3636092.692	60	CONC								5FTX20FT BOX CULVERT	0
070-01	11028641	3636802.5	24	CONC									0
070-02	11028693.27	3636490.845	48	CONC									0
070-03	11028874	3636250.75	36	CMP									0
081-02	11037934.62	3635471.616	24	CONC									0
090-04	11023999.62	3635798.759	15	CONC									0
090-06	11024007.95	3635161.457	15	CONC									0
104-04	11027235.12	3634337.309	15	CONC									0
116-04	11038165.22	3633381.232	15	CONC									0
122-01	11028190.83	3633776.181	24	CONC									0
122-02	11028231.1	3633611.839	15	CONC									0
122-03	11028250.7	3633620.855	18	CONC									0
122-04	11028226.19	3633221.9	18	CONC									0
122-05	11028214.12	3633133.616	24	OTHER									0

122-06	11028213.52	3633108.15	15	CMP									0
122-07	11028231.72	3633103.3	15	CONC									0
122-08	11028226.08	3633070.376	15	CONC									0
122-09	11028247.3	3633062.109	15	CONC									0
125-01	11024109.04	3633886.583	48	CMP									0
125-04	11024123	3633816	60	CMP									0
125-05	11024139.12	3633781.046	12	OTHER								3 - hdpe	0
125-06	11024141.87	3633687.781	12	OTHER								GREEN PLASTIC	0
130-01	11017413	3633819.75	18	CMP									0
130-02	11017444	3633807	18	CMP									0
133-01	11012240.4	3632171.374	15	CONC									0
133-02	11012347.03	3632195.623	15	CMP									0
133-03	11012621.53	3631917.645	12	CMP									0
135-01	11015369.08	3632882.77	18	CMP									0
135-02	11015814.4	3632686.461	12	CONC									0
136-01	11016367.73	3632305.221	12	CMP									0
136-02	11016834.68	3632114.038	12	CMP									0
137-02	11018751.09	3632379.263	15	CONC									0
137-03	11018902.57	3632243.274	30	CONC									0
137-04	11018917	3632251.39	15	CONC									0
137-05	11018936	3632162.399	30	CONC									0
137-06	11018957.37	3632168.404	15	CONC									0
140-11	11023215.41	3631992.736	60	CMP								four 60cmp	0
140-12	11023130.57	3631977.217	15	CONC									0
140-13	11022834.26	3632095.64	15	CONC									0
141-02	11024152.29	3631893.452	24	CONC									0
144-01	11028107	3632496.75	15										0
160-01	11030323.97	3631620.066	15	CONC									0
160-02	11030321.74	3631563.089	12	CONC									0
162-01	11027977.07	3631751.34	18	CONC								3 outfalls	0
162-02	11027961.27	3631677.77	15	CONC									0
163-02	11025587.46	3631136.641	18	CMP								open ditch	0
163-03	11025718.24	3631842.479	60	CONC									0
163-04	11025764.33	3631832.122	60	CONC									0
164-03	11023582.46	3631848.535	18	CONC									0
164-04	11023746.6	3631878.193	24	Conc									0
164-05	11023894.61	3631873.221	30	CONC									0
164-06	11023912.04	3631865.309	60	CONC									0
164-07	11024182.72	3631891.388	12	CONC									0
164-08	11024359.99	3631886.478	12	CONC									0
166-01	11020976.43	3631723.571	36	conc									0
168-01	11017905.79	3631662.821	18	CONC									0
168-02	11017941.87	3631592.445	15	CONC								2 outfalls	0
169-01	11017326.49	3631821.964	18	CMP									0
171-02	11014487.57	3630927.5	24	CMP									0
173-01	11013728.52	3630717.436	18	CONC									0
173-02	11014217.36	3630090.269	18	CONC									0
173-03	11014249.54	3630093.885	15	CONC									0
173-04	11014272.22	3629929.824	15	CONC									0
177-01	11020404.05	3630354.961	24	CONC									0
177-02	11020085.81	3630387.94	12	CONC									0
178-04	11020852.98	3630121.329	18	CMP									0
181-03	11026250.12	3630069.896	48	RCP								oval pipe check previous size	0
182-07	11027036	3630317.33	18	CMP								dditch	0
182-08	11026807.37	3630019.195	24	OTHER								hdpe	0
206-03	11021562.49	3629056.923	15	CONC									0
214-01	11025417.47	3628326.267	18	CMP									0
231-03	11034378.56	3627273.828	18	OTHER								culvert rr 88"	0
233-01	11032416.48	3627293.244	18	CONC									0
238-03	11023802.82	3627136.519	15	CONC									0
244-01	11028698.93	3626073.55	18	CONC									0
245-02	11030124.98	3626314.362	36	rcp									0
257-01	11038037.14	3625889.76	24	CONC									0
259-05	11034589.52	3625650.453	15	CMP									0

260-01	11033344.78	3625138.422	18	CMP									0
261-02	11031233.83	3625018.674	18	OTHER								PLASTIC	0
261-03	11031542.05	3625020.914	24	OTHER								PLASTIC	0
263-01	11028162.18	3625841.494	15	CONC									0
263-02	11028331.57	3625848.855	36	CONC									0
264-01	11027825.91	3625645.399	18	CONC									0
264-02	11027752.17	3625624.333	12	CONC									0
271-01	11027994.15	3624639.952	36	CONC									0
273-01	11030687.67	3624818.359	24	CONC									0
274-01	11032184.17	3624824.357	48	CONC									0
274-02	11032196.7	3624826.746	15	CONC									0
274-03	11032429.36	3624819.727	48	CONC								2 48PIPES COMING TO POND	0
275-01	11032635.67	3624813.326	15	CONC									0
275-02	11032742.2	3624868.195	36	CONC									0
275-03	11033678	3624245.25	30										0
276-04	11034542.42	3624113.139	18	CONC									0
283-02	11037648.72	3623765.577	30	CONC									0
287-03	11031814.97	3623357.028	24	CMP								2 24 CMP	0
290-01	11027622.86	3623229.986	18	CMP									0
290-02	11027620.47	3623231.865	24	CMP									0
290-03	11027461.03	3623163.442	18	CONC								out to holding pond	0
290-04	11027527.74	3623133.416	15	CONC									0
296-02	11027525.69	3622556.507	18	CMP									0
299-01	11032229	3622710	24										0

Appendix C – BMP 3.2 IDDE Follow-up Information

IDDE Follow-up Information

Non-stormwater Discharge Violations (see BMP 3.2)				
Violation #	Date of Violation	Location of Violation	Description of Violation	Corrective or Disciplinary Action Taken
1	7/18/2014	619 Florida Street	Paint was washed into the alleyway	Inspector requested that the paint be cleaned up using an absorbent. A second inspection later in the day on 07/18/2014 revealed the paint had been cleaned up.
2	5/18/2015	855 Cleveland Avenue	A very dark, black liquid was dumped into the parking lot	Inspector drove by to investigate and saw no proof that illegal dumping occurred. A general information letter regarding illicit discharges and consequences of illegally discharging materials shall be issued.

Appendix D – BMP 3.3 IDDE Screening Summary

IDDE Follow-up Information

Outfalls Characterized as Potential, Suspect, or Obvious for an Illicit Discharge (see BMP 3.3)				
Outfall ID	Date of Violation	Location of Violation	Description of Violation	Corrective or Disciplinary Action Taken
012-04	6/8/2015	Suburban residential area (closed piped)	Clear water (suspected from natural spring)	Water sample taken to confirm that it is not City water; test results are pending.
020-05	6/17/2015	Open space (closed pipe)	Clear water (suspected from natural spring)	Water sample taken to confirm that it is not City water; test results are pending.
030-02	6/8/2015	Suburban residential area (closed pipe)	Clear water (suspected from natural spring)	Water sample taken to confirm that it is not City water; test results are pending.
030-09	6/8/2015	Suburban residential / commercial area (closed pipe)	Clear water (suspected from natural spring)	Water sample taken to confirm that it is not City water; test results are pending.
072-01	6/12/2015	Suburban residential area (closed pipe)	Clear water (suspected from natural spring)	Water sample taken to confirm that it is not City water; test results are pending.
085-01	6/12/2015	Institutional area (closed pipe)	Clear water (suspected from natural spring)	Water sample taken to confirm that it is not City water; test results are pending.
088-01	6/25/2015	Suburban residential area (closed pipe)	Clear water (suspected from natural spring)	Water sample taken to confirm that it is not City water; test results are pending.