City of Salem

Municipal Separate Storm Sewer System Program Plan & Annual Report

For

General Permit No. VAR040010

And

Annual Reporting through

July 1, 2017 through June 30, 2018

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: October 11, 2018

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Appendix A – Documentation of Public Participation Activities
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Supporting Materials Incorporated by Reference (Provided on City's Website)

Public Education & Outreach Plan (BMP 1.2)
Illicit Discharge Detection & Elimination Manual (BMP 3.3)
Outfall Prioritization Methodology (BMP 3.3)
Guidance for Land Disturbance Activities *(BMP 4.1 & 5.1 enhancement; placeholder)*
BMP Post-Construction Stormwater Management Program Manual (BMP 5.3a)
Good Housekeeping/Pollution Prevention Manual (BMP 6.1)
Identification of High Priority Facilities (BMP 6.2)
Nutrient Management Plans (BMP 6.4)
Roanoke (Staunton) River Watershed PCB TMDL Action Plan (BMP SC.1a)
Upper Roanoke River Watershed E. coli TMDL Action Plan (BMP SC.2a)
Upper Roanoke River Watershed Sediment TMDL Action Plan (BMP SC.3a)

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: J. E. TAMAYO, JR. Title: ASST. CITY MNGR

Signature: _____ Date: 10/10/18

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. Coverage under this permit has been administratively extended by DEQ until the next General Permit is issued by the Department; this is anticipated to occur by the end of 2018. BMPs are provided in Section 3.2 for development of Action Plans for the TMDLs listed above. BMPs are also included for implementation of the Action Plans in accordance with the schedules prescribed in each Action Plan.

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 information to satisfy the reporting requirements of the General Permit and include 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" on the following page. Modifications to the Program made by the City will be done in accordance with the General Permit requirements described in Section 1.5.

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	
➢ 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 th le 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):

BMPs listed in the following sections whose deadlines were not met, are in progress, and will be fully implemented in the future. These include:

- BMP 1.1/1.2: 2nd public survey and effectiveness evaluation
  - Goal: To be distributed prior to end of year 2018.
- BMP 3.3: Outfall inspections were 2 short of the goal of 50 due to technical issues
  - Note: The City performed greater than 50 outfall inspections during the reporting year, however, the first round of inspection data was lost due to technical issues with new electronic data collection. The 48 outfall inspections reported here are the second round of outfall inspections performed during the reporting year.
  - Goal: will perform 2 additional inspections in the next permit cycle.
- BMP 5.3a (1 City-owned BMPs not inspected in the reporting year)
  - Goal: The 1 BMP was inspected just prior to the end of the previous reporting year and the City will inspect this BMP in the near future.
- SC1.b (City owned pre-1979 buildings and electrical department properties not yet inspected for PCBs, and associated mitigation plans and SPCCP updates not yet performed).
  - Goal: Inspect the identified sites with coordination of the electrical department)
  - Goal: Develop mitigation plans where PCB sources are found during inspections.
  - Goal: Update SPCC plans where PCB sources are found during inspections.

Annual Reporting – General Information Form	
➢ 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: A review of water quality issues identified in BMP 1.2 is appropriate since each identifies and addresses non-storwater discharges, including pollutants causing impairments. The issues are effective since materials are distributed to the City's entire population. Further, a public survey will be distributed in 2018 to assess the publics knowledge in comparioson to a survey taken near the beginning of the permit cycle.	

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 implementation.

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

BMP	Necessary Action	Due date
1.1	Second Public Outreach Survey	2018
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	Biennially
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	Annually, as needed
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	Update website postings (see BMPs for details)	Annually
6.3b, 6.5	Good housekeeping contract language for municipal contractors	**Complete**
SC.1	Upper Roanoke River Sediment Action Plan	**Complete**
SC.1	Upper Roanoke River E. coli Action Plan	**Complete**
3.3	Methodology for prioritizing outfalls	**Complete**
SC.1	Roanoke (Staunton) River PCBs Action Plan	**Complete**
3.1	Update storm sewer mapping/information table	Annually
5.2	Update BMP database attributes	Annually
6.2	High-priority facility SWPPP Development	**Complete**

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:** Director of Community Development; City Engineer I **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 fal 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 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 for our target audiences. 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 (PEOP) describing the rationale of the selection of each water quality issue, identification of target audience and estimated population, and relevant message (Attachment 1); (3) Materials described in the PEOP such as pamphlets and training materials (available upon request).

Responsible individual for implementation: Director of Community Development and City Engineer I

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 PEOP, latest version. 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 PEOP 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 was conducted as described in BMP 1.1. The second survey will occur, as described in BMP 1.1, 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	Estimated # people reached	Fraction of target audience reached
1	Improve public education on stormwater impacts and prevention of non-stormwater discharges[1]	General public	±880 people* (337 households)	±3.5%
2	Education on dog waste impacts and clean-up [2]	Licensed dog owners	±1,488 people* (570 households)	±10%
3	Prevention of Non-stormwater discharges via storm drain markers	Illicit Dischargers	20	100%
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 educaiton on stormwater impacts and prevention of non-stormwater discharges	General public	±5,000	20
2	Education on dog waste impacts and clean-up	Licensed dog owners	±720	20
3	Prevention of Non-stormwater discharges via storm drain markers	Illicit Dischargers	TBD	20

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.

Table Notes:

*Number of people were estimated based on July 2017 Virginia Census average of 2.61 people per household.

[1] The number of people reached for this category is based on site visits alone, this is a low estimate since additional people will be reached through digital brochures on the City's website. Please note that additional public education on stormwater discharges from BMP 2.2 reached an additional ±115,454 people which increases target audience reached to greater than 100%. Total audience is based on PEOP target audience of 25,000 people.

[2] The number of people reached for this category is based on hard-copy brochures distributed alone, which is a low estimate since additional people were reached through digital brochures on the City's website and the activities listed in BMP 2.2. Assuming the website brochure reaches the same number of households as the hard-copy distribution, the minimum target of 20% was achieved during the reporting year. Total audience is based on PEOP specification of 5,500 dogs in Salem and assumes 1 dog per household, which may result in an underestimate of target audience reached by hard-copy distributed pamphlets alone.

Measure of Effectiveness Form	
*Average "knowledge" score from previous survey:	10%
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 (See below)
If no, discuss potential ineffectiveness of the BMP (outreach materials, training approach, etc.): Effectiveness will be evaluated over time with a comparison of scoring from the 2014 survey and results from distribution of the public survey in 2018. Comparisons of results will be based on survey questions related to the PEOP. The 2018 public survey is prepared and is ready for distribution.	
If no, Suggest BMP modifications to the Program Plan with rationale to increase effectiveness: N/A	

*****The average "knowledge" score is based on the PEOP survey review that specifies that "90% of respondents know little or nothing about stormwater pollution."

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, including all supporting documents listed in the Program Plan BMPs • 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:** Director of Community Development, Communication Director and City Engineer I **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, along with all materials incorporated by reference, are provided at the web link below:
https://salemva.gov/Departments/Community-Development/Stormwater-Information/Program-Information

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:** Director of Community Development, Communication Director and City Engineer I **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				
Type of participation	Type of City participation	Role of City staff and connection to promoting public participation in activities to improve water quality	Estimated # of people reached	Participation documentation*
Rain Barrel Interactive Workshop	Sponsorship, Promotion, Development, Implementation	The event was organized and run by City library staff with assistance from engineering and streets departments to provide education and outreach for homeowner stormwater management.	30	Photos / Presentation
Info booth at VA Medical Center Earth Day Fair	Sponsorship, Promotion, Implementation	City of Salem set up as vendor; engineering staff handed out brochures and answered questions related to stormwater in the City.	600	Photos
New outdoor trashcans throughout the City	Sponsorship	The City installed new trashcans to encourage public participation in cleanup of litter. Some old open top cans were replaced, and additional cans were added.	+/- 5000	Photos / Map
New mutt mitt stations in Salem and along greenway	Sponsorship, Promotion, Implementation	The City installed 6 new mutt mitt stations to encourage public participation in dog waste (e. coli) cleanup. Doubled the total stations in the city, from 6 to 12.	+/-1500	Map / Photos / (Interactive Virtual Tour Coming Soon)
Dog Park Brochures	Sponsorship, Promotion, Development, Implementation	The City of Salem developed, and distributed Dog Waste brochures were developed and distributed by engineering and communications staff	+/-300	Dog park info and dog waste brochure can be found on City's website
Dog Waste Movies at Longwood Park	Sponsorship, Promotion, Implementation	The City developed a dog waste pick-up promotion video and City staff show this outreach video prior to movies in the park to encourage citizens in cleanup activities that help the E. Coli Plan.	+/-500	Dog waste video - can be found on City's website
Good housekeeping training	Sponsorship, Promotion	The City provides good housekeeping training to promote participation in activities to improve water quality and prevent IDDE's.	63	Photos/ Materials/ Sign-in Sheet

* Photos, Presentations, and Material Documentation is available upon request. Photos from outreach are anticipated to be uploaded to the City's website with this 2017-2018 Annual Report.

Note: There are an additional 14 adult stormwater activities, 5 cleanup activities, and 13 school stormwater and water quality programs that were implemented in Salem during the Reporting Year (see Appendix A).

Measure of Effectiveness Form	
Local Activity (same as above)	Rationalization of effectiveness or ineffectiveness
Rain Barrel Interactive Workshop	Effective due to interactive nature and information conveyed.
Info Booth at VA Medical Center Earth Day Fair	Effective due to number of people reached and type of audience reached, including homeowners and kids.
New outdoor trashcans throughout the City	Effective due to the number of people reached and providing ease of access for people to provide proper cleanup.
New mutt mitt stations in Salem and along greenway	Effective due to the number of people reached and providing ease of access for people to provide proper cleanup.
Dog Park Brochures	Effective due to the nature of the facility, providing a positive alternative for pet owners where picking up your pet's waste is required.
Dog Waste Movies at Longwood Park	Effective due to number of people reached and type of audience reached, namely families with pets.
Good Housekeeping Training	Effective by providing education and outreach to appropriate practices to prevent IDDE's and encourage proper stormwater management practices.
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;
- Be updated to estimate acreage served by each outfall;
- 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 (available upon request); (2) Outfall information table (available upon request); (3) Written notification of new physical interconnections to the downstream MS4, where applicable.

Responsible individual for implementation: Director of Community Development and City Engineer I

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	
Outfall Inventory (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: N/A since information table has been updated.	
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 since no new interconnections. Salem Veterans Affairs Medical Centre, Roanoke City, and Roanoke County were notified of interconnect of our MS4 systems earlier in the permit cycle. No new outfalls were located during the reporting year, therefore, there are no new interconnections.	
If an interconnected MS4 was not notified of a new interconnection, please explain why and indicate when the notification will be provided: N/A since no new interconnections.	

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: Yes, the existing system map is used as a tool in conjunction with field investigation to assist with tracing any illicit discharges back to a source.

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 Follow-up Information, as provided in Appendix C.

Responsible individual for implementation: Director of Community Development 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

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:	5
Number of potential illicit non-stormwater discharges resolved, as described in Appendix C:	5
➢ 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:	

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 (see Attachment 3 for prioritization);
- 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 (Attachment 2); (2) Outfall Prioritization Methodology (Attachment 3); (3) Outfall information table; (4) Completed outfall screening field forms, (5) Completed IDDE Follow-up Information, as provided in Appendix C.

Responsible individual for implementation: Director of Community Development and City Engineer I

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):	297*
*The total number of outfalls increased from previous annual reporting due to identification of additional outfalls throughout the reporting year, now included as part of an iterative program.	
Total number of outfalls screened during the reporting year:	48
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: 2 additional outfalls will be screened by the end of the next permit cycle (52 total for next cycle). The City is in the process of re-inspecting some of these, the inspection data for all inspections on 10/19/17 & 10/20/17 was lost/corrupted and unable to be retrieved from the iPad, which has delayed the inspection for all 50 outfalls slightly.	
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: Outfalls screened this reporting year represent outfalls that had previously not been screened. The City's prioritization methodology (on the City's website) will be utilized in future years to target outfalls for screening, in addition to including any outfalls without an initial screening.	
Were follow up investigations performed for all outfalls where screening characterized the outfall as potential, suspected or obviously having an illicit discharge? (yes/no/partially)	☐ 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: Seven outfalls were flagged as potential, suspect, or obvious, with follow-up required for 5. The 2 that did not require follow-up were determined to be from natural springs or from an activity that had already been stopped. 3 sites did have investigations performed and completed and 2 sites are in the process of being followed up (1 because there was a loss of the initial screening data, and the other requires very dry conditions to determine if the trickle flow was from a storm event.	
Screening results are summarized in Appendix B. **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:	5
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 outfall inspections were effective in identifying a couple activities that appeared to be causing water quality problems downstream. The screening and follow-up methods are effective at eliminating illicit discharges using the City's IDDE Manual.	

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 Follow-up Information, as provided in Appendix C.

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: Director of Community Development 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:	1
Total # of potential illicit discharges reported for the reporting year:	5
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: There is one report that the City followed-up on immediately and 2-weeks after the report. The resolve was dependent on the homeowner, and the City is following through with the homeowner to ensure there is no longer an existing issue.	

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: Director of Community Development and 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 subject to ESC Ordinance other than those issued an agreement in lieu of a plan =	23
The total agreements in lieu of a plan:	32

See **Appendix D** for the following information for each applicable land disturbance activity:

- Activity Description. (Column 'a')
- Total disturbed acreage. (Column 'b')
- Indication as to whether an ESC Plan was approved. (Column 'c')
- Number of inspections performed during the reporting year. (Column 'k')
- Total number of enforcement actions taken during the reporting year. (Column 'o')

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	
For the sites listed in Appendix D, 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 has taken multiple enforcement actions regarding Notices of Violations (NOVs). When items causing an NOV are not addressed, the NOV is elevated to a Notice to Comply (NOC). If items are still not addressed, then NOVs are further elevated resulting in a stop-work order. As noted in Appendix D, only 32% of the projects have resulted in enforcement actions which indicate the BMP to be effective.	

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: Director of Community Development; City Engineer I

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:			0
Complaint #	Date of complaint	Description of complaint	Resolution of the investigation
N/A	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: N/A	

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: Director of Community Development; City Engineer I

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):	15

See **Appendix D** for the following information for each applicable land disturbance activity:

- Activity Description. (Column 'a')
- Indication as to whether VSMP General Permit Coverage was obtained. (Column 'e')
- Indication as to whether a SWPPP is available on-site for the project. (Column 'f')
- Indication as to whether any illicit discharge reports resulted from the activity (Column 'j')

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 Column 'e' or 'f' in Appendix D, 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: N/A since all applicable sites have VSMP Permit coverage and SWPPPs available on-site.	
Is yes answered in any row in Column 'j' of Appendix D? (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 since no illicit discharges reports were result of regulated land disturbance.	

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: Director of Community Development; City Engineer I

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):	20
See **Appendix D** for the following information for each applicable land disturbance activity: • Activity Description. (Column 'a') • Total disturbed acreage. (Column 'b') • Indication as to whether an SWM Plan was approved. (Column 'd') • Indication as to whether an inspection and maintenance plan is approved. (Column 'h') • Indication as to whether a maintenance agreement has been recorded. (Column 'i')	

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 yes answered for all activities in Column 'd' in Appendix D?	☒ 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 since all applicable activities have an approved SWM Plan.	
➢ Was "yes" or "no facility" answered for all activities in Columns 'h' in Appendix D indicating each project had a BMP Inspection & Maintenance Plan?	☐ Yes (BMP effective) ☒ No (See below) ☐ N/A (No activity)
➢ Was "yes" or "no facility" answered for all activities in Columns 'i' in Appendix D indicating each project has a recorded maintenance agreement?	☐ 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: The BMP database in Appendix D indicates the following sites have a BMP; but not a recorded maintenance agreement. For each, the explanation is given as to why there is not a recorded agreement: (1) East Salem Elementary School- This project is new in this reporting period, is under-construction, and is a City-owned BMP. Since the BMP is owned by the City will be listed in the SWM database once construction is completed for inspections and maintenance, the City already has the authority to ensure the proper function and maintenance access to the BMP over the life of the facility.	

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 (available upon request); (2) Completed inspection checklist forms (see BMP 5.3)

Responsible individual for implementation: Director of Community Development; City Engineer I

Objectives and expected results in meeting measurable goals: The objective is to maintain an updated record of all 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 as **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. Five new BMPs came online during this reporting year, and another six are scheduled to come online in the future, as shown in Appendix E.	

Measure of Effectiveness Form	
Is the database complete to include all 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 the BMP needs to be modified to ensure completion of the data base: N/A	

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 (Attachment 5); (4) Completed BMP Inspection Forms; (5) Documentation of maintenance performed, where necessary

Responsible individual for implementation: Director of Community Development; City Engineer I

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 5.3a 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 the BMP needs to be modified to ensure completion of inspections or is currently considered effective: All City-owned BMPs were inspected during the reporting year, except for one which was inspected at the very end of the prior annual reporting period.	
➢ Do dates in the database indicate that maintenance was performed, where necessary and in a timely manner?	☐ Yes (BMP effective) ☐ No (See below) ☒ Other (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 database reflects the type of maintenance necessary and a schedule for conducting the maintenance. Maintenance was performed for several BMPs that required it and is scheduled for those BMPs whose inspections identified a need. Since maintenance needs were identified, performed, and scheduled, the BMP is considered effective.	

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: Director of Community Development; City Engineer I

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 5.3b 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): n/a	
➢ 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- inspections did not result in identification of required maintenance, but did note when a maintenance easement was available.	
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 (Attachment 6); (2) Site-specific SWPPPs; (3) Training documentation; (4) Completed SWPPP Site Evaluation forms (see BMP 6.2).

Responsible individual for implementation: Director of Community Development

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:

- Street and General Maintenance Facility;
- 1010 Tidewater Street (Stockpiling, vehicle and equipment storage); and
- 1001 Roanoke Blvd. (Area south of baseball field).

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 SWPPPs 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 SWPPPs 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; (4) Identification of High Priority Facilities report (Attachment 7)

Responsible individual for implementation: Director of Community Development

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 will be completed per the MS4 General Permit schedule so that the annual comprehensive site compliance evaluation can begin in the spring of each year beginning in 2017.

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: N/A SWPPPs completed for all identified high priority facilities.	
➢ Did any changes on high priority facilities that could potentially affect stormwater runoff occur during the reporting year that would require changes to any SWPPPs (e.g. new activities, outfalls or BMPs)? (yes/no)	☐ Yes ☒ No
If yes, are the changes reflected in the SWPPP? (yes/no)	☐ Yes ☐ No ☒ N/A
If the changes were not reflected, explain why: N/A. No changes.	
➢ Did SWPPP implementation occur during the reporting year?	☒ Yes ☐ No ☐ Partially (see below)
If no, explain: SWPPP implementation began last reporting year at HPF sites and has been completed by the end of this reporting year. The City will has continued addressing identified issues as will be reflected in subsequent reporting in the measure of effectiveness reporting below.	

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 in 2017-2018 compared to previous annual inspection*:	0
Is the # of recurring items excessive?	☐ Yes (BMP effective) ☒ No (See below)
If yes, 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 2018 since recurring items were not available in 2016-2017 with the first inspection performed during that reporting year.	
➢ 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:

- Biennial 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.
- Biennial 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: Director of Community Development

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
Good Housekeeping/Pollution Prevention Training & Certifications	
Has annual Good Housekeeping 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 and good housekeeping/pollution prevention practices:	06/21/2018
Number of employees that participated in the latest training in the recognition and reporting of illicit discharges and good housekeeping/pollution prevention practices:	62
Do the number of individuals reported above 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	
Spill Response Training	
Summary of the training or certification program provided to emergency response employees that includes training in spill response, including dates and number of individuals trained The Fire Department receives training in addition to the Good Housekeeping/Pollution Prevention training provided annually. In addition, through the Fire Training Academy, individuals are trained in Hazardous Materials Operations (NFPA 472-13 standard). This is a 32-hour course and usually one Academy is provided each year. Six Regional Hazmat training dates are also set each year, the training topics change each date.	

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" scores increased from the previous training, from an 81 to 90 average based on questions related to Good Housekeeping and Illicit Discharge. The City will continue to evaluate "knowledge scores" and the effectiveness of training.	

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: Director of Community Development

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 Plans (available upon request); (2) Completed Fertilizer Application Record; (3) Ingredients of deicers used.

Responsible individual for implementation: Director of Community Development

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:		66.28
Acreage of lands upon which nutrient management plans have been implemented:		66.28
Date of last NMP update:		7/15/2018
Total percentage of land where nutrient management plans are required and being implemented:		100%
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: _____		

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: The City currently uses contractors for nutrient application. The contractors are responsible for tracking and reporting ALL applications made in the City of Salem to the Commonwealth of Virginia. The City receives basic application reports for each location, but the contractor is responsible for reporting to VDACS.	

BMP 6.5 Contractor Safeguards to Ensure Program Consistent Measures and Procedures (Section II B.6.e)

Description: The City's current contract language will be enhanced to incorporate references to sections within the City's Good Housekeeping and Pollution Prevention Manual to require City contractors to use appropriate control measures and procedures for stormwater discharges, when applicable. Oversight will be provided by the City with inspections and generated reports on the measures of adherence to the contract documents; effectiveness of the measures to control illicit discharges; and the Contractor's maintenance of the measures. Contract language will require contractors address items identified during inspections within a time period appropriate to prevent the potential of non-stormwater discharges. When needed, if the Contractor fails to take immediate action or remediate to the satisfaction of the City, the City shall remediate the pollution and receive a credit in the existing contract for the cost of remediation.

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: Director of Community Development

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: By July 1, 2016, the City will have developed contract language to require contractors to use appropriate control measures and procedures for stormwater discharges. The language will be incorporated into contracts the 2017-2018 reporting year.

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 developed? (yes/no)	☒Yes ☐No
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? (yes/no)	☒Yes ☐No
If no, explain: The contract language has been developed. Additional compliance with this BMP is through the City's ordinances, including IDDE regulations, which allows the City oversight of Contractor activities.	
Was oversight necessary for any contracts subject to the contract language described in the BMP? (yes/no)	☐Yes ☒No ☐N/A (no contracts)
If yes, explain: _____	

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.1a Roanoke (Staunton) River Watershed PCB 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 (available upon request); (2) Salem Program Plan Updates, as necessary.

Responsible individual for implementation: Director of Community Development

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.1a Roanoke (Staunton) River Watershed PCB TMDL Action Plan Annual Reporting Form	
Roanoke (Staunton) River Watershed Action Plan	
Has the Salem Roanoke (Staunton) River Watershed PCB Action Plan been developed?	☒ 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	
Does quantification demonstrate the selected means and methods in the completed Action Plan can achieve the required reductions to the maximum extent practicable (MEP) 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.1b Roanoke (Staunton) River Watershed PCB TMDL Action Plan Implementation (Section I B.5.b)

Description: On an annual basis, the City will report progress on the implementation of the Roanoke (Staunton) River Watershed PCB TMDL Action Plan and associated evaluation. As described in Section 4.1 of the Action Plan, BMPs implemented to address several minimum control measures (MCMs) in the City's MS4 Program BMPs are applicable to the reduction of PCBs. In addition, and to reduce PCBs to the maximum extent practicable, the City's PCB Action Plan also lists 11 PCB-specific BMPs. The PCB-specific BMPs are listed, along with measurable goals and a schedule for each in the City's PCB Action Plan. The Action plan is available on the City's Website.

Necessary documentation for implementation: (1) "Roanoke River PCB TMDL Development (Virginia);" (2) Measurable goal documentation, as necessary.

Responsible individual for implementation: Director of Community Development

Objectives and expected results in meeting measurable goals: The objective is to achieve reductions required by the Roanoke River PCB TMDL. The expected result is implementation of the identified measurable goals.

Implementation schedule: As described above, to the maximum extent practicable, or as otherwise identified for applicable BMPs in the City's Program Plan.

Method to determine effectiveness: Effectiveness will be determined based on the achievement of measurable goals described in this BMP.

BMP SC.1b Roanoke (Staunton) River Watershed PCB TMDL Action Plan Implementation Annual Reporting Form

Description: The City's progress on the implementation of the Roanoke (Staunton) River Watershed PCB TMDL Action Plan measurable goals is reported below. Supporting documentation is not provided with the annual report, but can be provided upon request.

Roanoke (Staunton) River Watershed PCB TMDL Action Plan Practices & Controls

Action Plan BMP*	Implementation Schedule	Progress Towards Measurable Goals
PCB-BMP-1	Ongoing	When applicable, enforcement of City Codes regarding illicit discharges, disposal and storage of PCB sources.
PCB-BMP-2	2016-2017	Identified City-owned buildings where electrical equipment and appliances were installed prior to 1979. Inspections, as determined appropriate, will be scheduled.
PCB-BMP-3	2017-2018	Will develop maintenance, mitigation and/or disposal plan, as applicable, as a result of findings from PCB-BMP-2.
PCB-BMP-4	Ongoing (2018)	Continued implementation of SPCC Plans. Review and update by 2018, including for PCB-specific concerns.
PCB-BMP-5	2017-2018	Reassess electric department properties for PCBs as part of SPCC update per Action Plan schedule.
PCB-BMP-6	2016-2017	City's Good Housekeeping Manual updated to include a section for PCBs (Section 5.20)
PCB-BMP-7	2016-2017	SPCC Plans are provided on the City's Website.
PCB-BMP-8	2016-2017	City's Good Housekeeping Manual updated to include a section for PCBs (Section 5.20)
PCB-BMP-9	2017-2018	PCB information in the Good Housekeeping Manual was provided during 2018 training.
PCB-BMP-10	2016-2017	The City's Public Education & Outreach Plan was updated to include PCB information in material distributed to the public.
PCB-BMP-11	2017-2018	The City has updated outreach material for distribution to the public during the 2017-2018 reporting year.

* See the City's PCB Action Plan for additional detail.

Measure of Effectiveness	
Were measurable goals achieved consistent with the Action Plan and schedules defined in the BMP?	☐ Yes ☐ No ☒ Partially (See Below)

If no, explain how the City plans to achieve Action Plan measurable goals for the permit cycle, consistent with the DEQ-approved Action Plan:
The City is continuing to work towards achieving the BMPs that have not yet been fully implemented, and intends to complete these BMPs in the future.

Action Plan BMP*	**Measurable Goal Achieved* (Yes/No/Partial)**	**If "No" or Partial" Explanation/Discussion**
PCB-BMP-1	Yes	N/A
PCB-BMP-2	Partially	Measurable goals partially met. Buildings identified; 1 site confirmed as PCB source. Building inspections, where appropriate, have yet to be performed.
PCB-BMP-3	No	This item is dependent on BMP-2, and as such will be performed when inspections are completed.
PCB-BMP-4	Yes	SPCC Plans Implemented; Updates scheduled for 2018.
PCB-BMP-5	No	Electric department properties have not yet been inspected for PCBs for updates to SPCC plans.
PCB-BMP-6	Yes	N/A
PCB-BMP-7	Yes	N/A
PCB-BMP-8	Yes	N/A
PCB-BMP-9	Yes	N/A
PCB-BMP-10	Yes	N/A
PCB-BMP-11	Yes	22 brochures were issued with demolition permits.

* See Appendix B of the City's PCB Action Plan for Measurable Goals.

BMP SC.2a Upper Roanoke River Watershed E. coli 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 (available upon request); (2) Salem Program Plan Updates, as necessary.

Responsible individual for implementation: Director of Community Development

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.2a Upper Roanoke River Watershed E. coli TMDL Action Plan Annual Reporting Form	
Upper Roanoke River Watershed Action Plan	
Has the Salem Upper Roanoke River Watershed Action Plan been developed?	☒ 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	
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

BMP SC.2b Upper Roanoke River Watershed E. coli TMDL Action Plan Implementation (Section I B.5.b)

Description: On an annual basis, the City will report progress on the implementation of the Upper Roanoke River Watershed E. coli TMDL Action Plan and associated evaluation. As described in Section 4.1 of the Action Plan, BMPs implemented to address each minimum control measure (MCM) in the City's MS4 Program BMPs are applicable to the reduction of E. coli. To reduce E. coli to the maximum extent practicable, the City's E. coli Action Plan also lists practices and controls to address E. coli beyond those incorporated into the MCM BMPs summarized as:

Upper Roanoke River Watershed E. coli TMDL Action Plan Action Plan Practices & Controls

BMP General Description	Measurable Goals	Schedule
Pet Waste Controls	(1) Prohibition of pets on City properties; (2) Maintenance of the Salem Rotary Dog Park; (3) Educational outreach to registered dog owners.	Ongoing
Sanitary Sewer System Rehabilitation	Continued rehabilitation and repair of the sanitary sewer system in accordance with I&I Corrective Action Plan described in Section 4.2.2 of the Action Plan.	Ongoing
Identification of Septic Systems	Cross reference Roanoke Health Department records with utility data to confirm the number and location of properties that are not connected to the sanitary sewer system.	Prior to July 1, 2018
Elimination of Straight Pipe Connections	(1) Continued annual outfall screening and mapping (as new outfalls are identified); (2) Continued elimination of illicit discharges, as identified; (3) Recognition of straight pipe concerns in staff training.	Ongoing
Source Controls at City-Owned Properties	Conduct review of approach to pet waste as an E. coli source that includes a review of the code and considers additional pet waste stations.	Prior to July 1, 2018
Enhanced Public Education & Outreach Plan	Inclusion of educational information into: (1) Public Education and Outreach Plan and (2) Employee training.	Ongoing

Necessary documentation for implementation: (1) Upper Roanoke River Watershed E. coli TMDL Action Plan; (2) Measurable goal documentation, as necessary.

Responsible individual for implementation: Director of Community Development

Objectives and expected results in meeting measurable goals: The objective is to achieve reductions required by the Upper Roanoke River Watershed E. coli TMDL. The expected result is implementation of the identified measurable goals.

Implementation schedule: As described above, to the maximum extent practicable, or as otherwise identified for applicable BMPs in the City's Program Plan.

Method to determine effectiveness: Effectiveness will be determined based on the achievement of measurable goals described in this BMP.

BMP SC.2b Upper Roanoke River Watershed E. coli TMDL Action Plan Implementation Annual Reporting Form

Description: The City's progress on the implementation of the Upper Roanoke River Watershed E. coli TMDL Action Plan measurable goals is reported below. Supporting documentation is not provided with the annual report, but can be provided upon request.

Upper Roanoke River Watershed E. coli TMDL Action Plan Practices & Controls

BMP General Description	Progress Towards Measurable Goals
Pet Waste Controls	Signage, pet waste bags, and trash receptacles were installed at 6 new sites, and the existing 6 stations maintained at the Salem Rotary Dog park. Pet waste stations were maintained at these 12 stations along the Roanoke River Greenway, East Main Street, and Mason Creek. Educational outreach to registered dog owners was provided as described in BMP 1.2.
Sanitary Sewer System Rehabilitation	This City has continued implementation of the I&I Corrective Action Plan. Specific information is available upon request.
Identification of Septic Systems	The City has developed a GIS dataset for parcels suspected to be served by septic systems.
Elimination of Straight Pipe Connections	(1) Outfall screening was performed (see reporting for BMPs 3.3). Newly identified outfalls mapped and included in outfall database in Appendix B; (2) Any identified/reported illicit discharge eliminated (see reporting BMPs 3.2 and 3.4); (3) Training conducted as reported in BMP 6.3a.
Source Controls at City-Owned Properties	The City reviewed the pet waste approach to the E. Coli Action plan, and added an additional 6 pet waste stations to help meet the E. Coli TMDL.
Enhanced Public Education & Outreach Plan	(1) E. coli as a pollutant of concern is incorporated into the City's PEOP as described in BMP 1.2; (2) E. coli, as a pollutant of concern was incorporated into employee training reported in BMP 6.3a.

Measure of Effectiveness	
Were measurable goals achieved consistent with the Action Plan?	☒ Yes ☐ No
If no, explain how the City plans to achieve Action Plan measurable goals for the permit cycle, consistent with the DEQ-approved Action Plan: N/A since measurable goals achieved per the Action Plan schedule.	

BMP SC.3a Upper Roanoke River Watershed Sediment TMDL Action Plan (Section I B)

Description: Salem has been assigned a waste load allocation (WLA) for sediment in the Upper Roanoke River Watershed Sediment 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 (available upon request); (2) Salem Program Plan Updates, as necessary.

Responsible individual for implementation: Director of Community Development

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.3a Upper Roanoke River Watershed Sediment TMDL Action Plan Annual Reporting Form	
Upper Roanoke River Watershed Action Plan	
Has the Salem Upper Roanoke River Watershed Action Plan been developed?	☒ 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	
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

BMP SC.3b Upper Roanoke River Watershed Sediment TMDL Action Plan Implementation (Section I B.5.b)

Description: On an annual basis, the City will report progress on the implementation of the Upper Roanoke River Watershed Sediment TMDL Action Plan and associated evaluation. In addition to continued implementation of the City's MS4 Program BMPs, the City's Upper Roanoke River Watershed Sediment TMDL Implementation Schedule is summarized below:

Upper Roanoke River Watershed Sediment TMDL Action Plan Implementation Plan

Step	General Description	Measurable Goal	Target Date
-	Continued sweeping	Continue current sweeping efforts with regenerative/vacuum sweeper per the Implementation Plan described in Section 4.2 of the Action Plan.	Annually
1	Tracking and information on areas swept	Supporting materials for tracking documentation	July. 2016
2	Training for applicable staff	Utilize supporting materials for training sweeper operators for collection of sweeping operations data.	July. 2016
3	Conduct collected material sampling and analysis	Conduct street sweeping material sampling and conduct laboratory analysis. Analysis includes particle size distribution, moisture content, total nitrogen and total phosphorus.	Oct. 2016
4	Target area identification and sediment reduction assessment	Written report building on field collected data from Steps 1 and 3 develop to assist estimating pollutant reductions and target areas for sweeping to maximize POC reduction	July. 2017
5	Sweeper evaluation	Assess effectiveness and appropriateness of the City's sweepers. The assessment will be utilized in the consideration of future sweeper purchases.	Jan. 2018
6	Implementation of targeted areas for sweeping	Implementation of the identified target areas resulting from Step 4.	Annually, begin July 2018

Necessary documentation for implementation: (1) Upper Roanoke River Watershed Sediment TMDL Action Plan; (2) Documentation of Measurable Goals described in the Implementation Plan.

Responsible individual for implementation: Director of Community Development

Objectives and expected results in meeting measurable goals: The objective is to achieve reductions required by the Upper Roanoke River Watershed Sediment TMDL. The expected result is implementation of the identified measurable goals.

Implementation schedule: Per the Implementation Plan summarized in the above Table.

Method to determine effectiveness: Effectiveness will be determined by the quantitative computation of sediment reductions using approved or scientifically supportable methods.

BMP SC.3b Upper Roanoke River Watershed Sediment TMDL Action Plan Implementation Annual Reporting Form

Description of progress towards achieving measurable goals: The City's progress on the implementation of the Upper Roanoke River Watershed Sediment TMDL Action Plan measurable goals is reported below. Supporting documentation is not provided with the annual report, but can be provided upon request.

Upper Roanoke River Watershed Sediment TMDL Action Plan Implementation Plan

Step	Measurable Goal(s)	Progress Towards Measurable Goal
-	Continued sweeping	The City's street sweeping schedule continued during the reporting year.
1	Supporting materials for tracking documentation	(1) Sweeping data collection form developed. (2) Sampling protocol developed.
2	Utilize supporting materials for training sweeper operators for collection of sweeping operations data.	Completed
3	Conduct street sweeping material sampling and conduct laboratory analysis.	The City collected 274 tons of swept material and sampled 0 samples for TP, TN, and TSS.
4	Written report building on field collected data from Steps 1 and 3 develop to assist estimating pollutant reductions and potentially targeting areas for sweeping to maximize POC reduction	An internal Guidance report was generated considering sampled material results & DEQ Guidance for developing assessing quantification methods of swept material. Report is available upon request.
5	Assess effectiveness and appropriateness of the City's sweepers. The assessment will be utilized in the consideration of future sweeper purchases.	Completed, collection of 274 tons occurred during the reporting year.
6	Implementation of the identified target areas resulting from Step 4.	Data including lane miles and tonnage and results from BMP-4 have been collected towards implementing this item.

Measure of Effectiveness	
Were measurable goals achieved consistent with the Action Plan schedule?	☒ Yes ☐ No
If no, explain how the City plans to achieve Action Plan measurable goals for the permit cycle, consistent with the DEQ-approved Action Plan: N/A since measurable goals achieved per the Action Plan schedule.	

Appendix A – Documentation of Public Participation Activities

Local Activity	Type of participation	Role of city staff and connection to promoting public participation in	Estimated # of people reached	Documentation of participation
Rain Barrel Workshop	Interactive workshop	Sponsored and promoted by the City of Salem, event put on and ran by library staff with assistance from engineering and streets departments	30	Photos / Presentation *
Info booth at VA Medical Center Earth Day Fair	Q&A, interactive board game, hand out flyers	City of Salem set up as vendor and City of Salem engineering staff manned the info booth, handing out brochures, interacting with public, answering questions	600	Photos*
New outdoor trashcans throughout the City	Installation of new and improved trashcans	Installation of new trashcans to encourage cleanup. Some old open top cans were replaced and additional locations were added	~5000	Photos / Map
New mutt mitt stations in Salem and along greenway	Installation of additional mutt mitt stations	Installation of new mutt mitt stations to encourage cleanup. Doubled the total in the city, originally 6 and now up to 12.	~1500	Map / Photos / (Interactive Virtual Tour Coming Soon)
Dog Park	Place for residents to bring their dogs, dog waste brochures provided	Sponsored, promoted, and ran by the City of Salem; brochures developed and provided by engineering and communications staff	~300	Dog park info and dog waste brochure can be found on website
Movies at Longwood Park	Video promoting picking up dog waste shown before movies in the park	Sponsored, promoted, and ran by the City of Salem; video developed by engineering and communications staff, shown before movies by parks and recreation	~500	Dog waste video - can be found on our website
Good housekeeping training	Presentation	Sponsored and promoted by City of Salem	63	Photos / Materials / Sign in sheet

*Photos from outreach events will be available on the City's website when the 2018 Annual Report is uploaded.

MCM 1: BMP #1.5 Stormwater Educational Programs and Publications for Adult & General Audience

	Date	Location	School or Outreach Group	Program	Grade Level	Total Attendance	Materials Distributed	
							Type	# of Pieces
1	7/15/2017	All	Deschutes Street Pub	Outreach, Information booth	All	25,000	Chip Clips (100), Lanyards (50), Pencils (200)	350
2	8/29/2017	All	Richfield Assisted Living Center	Think Earth	A	25	Chip Clips (25), Lanyard (10)	35
3	9/26/2017	ALL	BANFF	Film Festival	A	650	Funnels, Chip Clips, pencils, Lanyards, magnets	100
4	10/13-15/2017	ALL	GoFest	Outreach, Information booth	A	36000	Chip Clips (80), Lanyards (100),stickers	600
5	3/16/2018	ALL	Homeschool Day at Transportation Museum	Watershed Model	K-12	100	Bookmarks, Pencils, Chip Clips	200
6	3/28/2018	ALL	Cushman & Wakefield - Team Meeting	Plastics in the Watershed	A	20	T-shirts, Brochures	40
7	4/7/2018	ALL	Block Party - After Clean Valley Day Clean Up	Outreach, Information booth	A	130	T-shirts, Brochures	200
8	4/11/2018	ALL	Roanoke College Garden Club	Composting	A	40	Brochures, compost flyer, composter	40
9	4/25/2018	ALL	Veterans Administration Medical Center (VAMC)	Outreach, Information booth	A	600	Cards, Coloring Books, Crayons, Brochures	600
10	4/28/2018	ALL	Blue Ridge Marathon	Outreach, Information booth	A	5000	Cards, Coloring Books, Crayons, Brochures	600
11	5/7/2018	ALL	Watersheds Investigations	Adult Education - BREE Partnership	A	20		
12	5/9/2018	ALL	Kiwanis Speaking Engagement	Outreach, Stormwater, Pollution Prevention	A	100		
13	6/20/2018	ALL	Riverfest	Outreach, Information booth, Education & Activities	A	500	T-shirts, Brochures, stickers, ducks	1,000
	Total Outreach & Adult Education					**68,185**		**3,765**

MCM 1: BMP# 1.3 Stream School Seminars

Date	Location	School or Outreach Group	Program	Grade Level	# Programs	# Students Participants	# Adult Participants	Materials Distributed - Type	Materials Distributed - Quantity	Program (SW,RW, EC ,PO)	CVC Staff
5/23/2018	All	Community School	Stream School	1,2,3,4	2	25	2			SW	Dawn
	TOTAL ALL				**2**	**25**	**2**		**0**		

BMP 2.2 Public Involvement and Participation - Community Wide Public Events

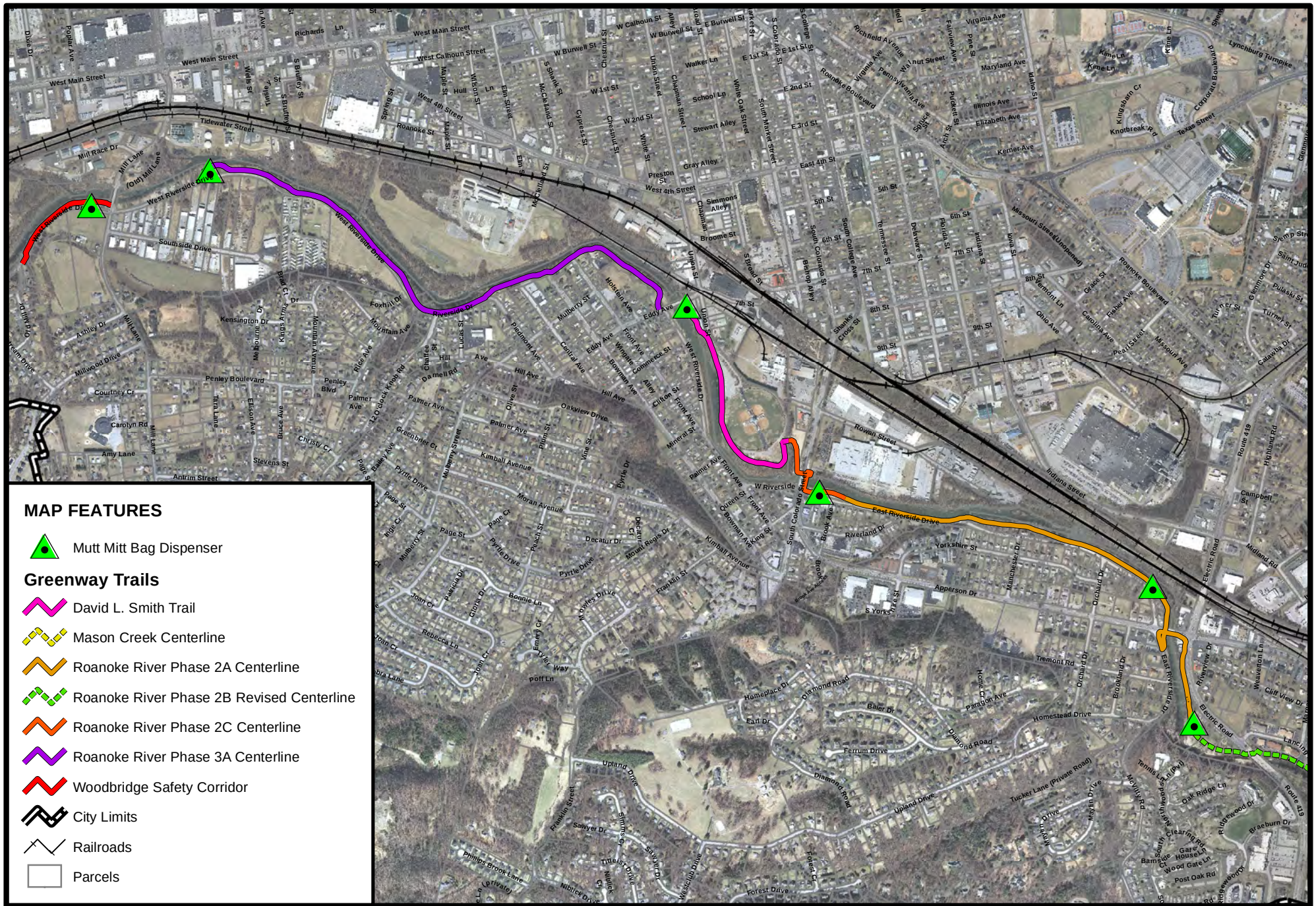
Event & High Priority Issue Addressed	Attendance	Date	Materials Distributed
Fall Waterways Cleanup Excess bacteria, sediments, nutrients	586	10/6/2017	Gloves, Bags, Event T-shirts (Reclaim our Rivers), Safety Kits, Roanoke River Keepers and Citizens Guide to Understanding Stormwater brochures
Go Fest (booth, stream school, program) Excess bacteria, sediments, nutrients	36,000	0/13-15/201	Funnels, Chip Clips, pencils, Lanyards,stickers
Earth Summit Sediments	70	11/9/2017	Lanyards, T-shirts
Clean Valley Day Clean Up Excess bacteria, sediments, nutrients	935	4/7/2018	T-shirts, SW Literature, Gloves, Bags, Safety Kits
Riverfest Excess bacteria, sediments, nutrients	500	6/30/2018	T-shirts, SW Literature, Stickers, Ducks and Candy
Total Public Involvement Events	**38091**		

MCM 1: BMP# 1.4 Stormwater Educational Programs

Date	Location	School or Outreach Group	Program	Grade Level	# Programs	# Students Participants	# Adult Participants	Materials Distributed - Type	Materials Distributed - Quantity	Program (SW,RW, EC ,PO)	CVC Staff
11/1/2017	Salem	Andrew Lewis MS	Groundwater	6	4	100	1	-	-	SW	Grace
11/21/2017	Salem	Andrew Lewis MS	Drains to Rivers	6	8	125	1	pencils	125	SW	Grace
12/12/2017	Salem	Salem HS	Oceans of Trash	12	1	20	1	Stickers	21	SW	Grace
12/13/2017	Salem	Salem HS	Watersheds to Oceans	12	1	20	1			SW	Grace
2/14/2018	Salem	West Salem ES	Groundwater	4	3	78	2			SW	Grace
3/23/2018	Salem	West Salem ES	Lets Recycle	K	1	80	6			RW	Dawn
3/27/2018	Salem	West Salem ES	Lets Recycle	K,1,2,3,4,5		100	75			RW	Dawn
3/28/2018	Salem	West Salem ES	Environmental Bingo	K,1,2,3,4,5		100	75			RW	Dawn
4/7/2018	Salem	Andrew Lewis MS	Chemistry of Plastic	7	3	90	2			RW	Grace
4/11/2018	Salem	West Salem ES	Watersheds to Oceans	4	3	64	5	pencils	67	SW	Dawn
4/12/2018	Salem	West Salem ES	Rigsby	K	1	65	5			RW	Dawn
5/10/2018	Salem	G.W.Carver ES	Rigsby	K	2	72	6			RW	Grace
5/14/2018	Salem	East Salem ES	Rigsby	K	3	59	5			RW	Dawn
	TOTAL SALEM				**30**	**973**	**185**		**213**		

BMP 1.4 Stormwater Education Program

Classroom Program	High Priority Issue Addressed
All About Natural Resources	Pollution Prevention, Sediment
Bag It	Pollution Prevention
Drains to Rivers	Excess bacteria, sediment and nutrients
Green Game	Pollution Prevention
Groundwater	Excess bacteria, sediment and nutrients
Land Use	Excess bacteria, sediment and nutrients
Lorax	Sediment, nutrients
Oceans of Trash	Excess bacteria, sediment and nutrients
Planet in Peril	Sediment, nutrients
Soil: Who Needs it	Sediment, nutrients
Think Earth	Excess bacteria, sediment and nutrients
Water Game	Excess bacteria, sediment and nutrients
Watersheds to Oceans	Excess bacteria, sediment and nutrients
Who Polluted the River	Excess bacteria, sediment and nutrients
Stormdrain Stenciling	Excess bacteria, sediment and nutrients
Rigsby	Pollution Prevention
Environmental Bingo	Pollution Prevention
Environmental Jeopardy	Excess bacteria, sediment and nutrients
Wartville Wizard	Pollution Prevention, nutrients
Trash Train	Pollution Prevention, nutrients
Traveling Trash	Pollution Prevention, excess bacteria, nutrients, sediment
Chemistry of Plastics	Pollution Prevention, nutrients



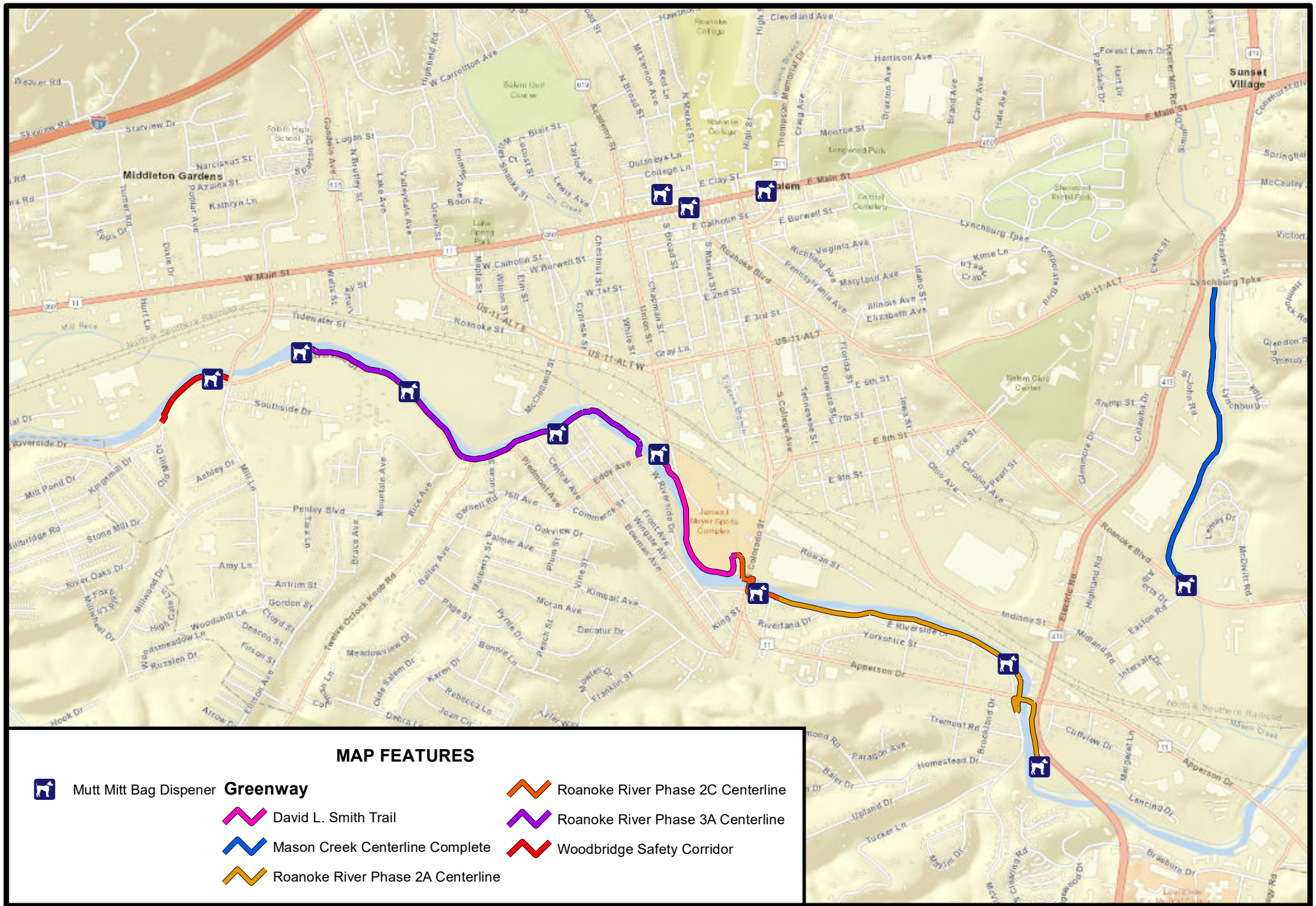
Mutt Mitt Bag Dispenser Locations

September 2013

The City of Salem assumes no liability for damages arising from errors or omissions. The information is deemed accurate, but not warranted. Please notify the City of Salem Engineering Department of any inconsistency.

CITY OF SALEM
Department of Engineering
Geographic Information Systems Division
114 North Broad Street
P.O. Box 869
Salem, Virginia 24153-0869
Phone: (540) 375-3032

Path: N:\GIS\ArcMap_projects\2013\DoggyLitter.mxd



Mutt Mitt Bag Dispenser Locations

August 2018

The City of Salem assumes no liability for damages arising from errors or omissions. The information is deemed accurate, but not warranted. Please notify the City of Salem Engineering Department of any inconsistency.

CITY OF SALEM
Community Development
Geographic Information Systems Division
21 S, Bruffey Street
P.O. Box 869
Salem, Virginia 24153-0869
Phone: (540) 375-3032

Path: N:\GIS\ArcMap_projects\2018\Greenway_MuttMitts_2018.mxd

Trash Can Locations

CITY OF SALEM
COMMUNITY DEVELOPMENT DEPARTMENT
Geographic Information Systems Division
21 S. Bruffey Street
P.O. Box 869
Salem, Virginia 24153-0869
Phone: (540) 375-3032

CanID	Location
TC_16	w main & academy nw
TC_17	w main & academy ne
TC_18	19 w main
TC_19	3 w main
TC_20	farmers market 1
TC_21	farmers market 2
TC_22	farmers market 3
TC_23	farmers market 4
TC_24	farmers market 5
TC_25	farmers market 6
TC_26	farmers market 7
TC_27	farmers market 8
TC_28	city hall 1
TC_29	city hall 2
TC_30	city hall 3
TC_31	farmers market 9
TC_32	15 e main
TC_33	e main & market nw
TC_34	clay & market se
TC_35	103 e main
TC_36	131 e main
TC_37	e clay @ parking
TC_38	clay & college sw
TC_39	9 n college ave
TC_40	e main & college nw
TC_41	e main & college ne
TC_42	305 e main

CanID	Location
TC_43	e main & thompson nw
TC_44	e main @ longwood
TC_45	longwood @ chamver of commerce
TC_46	longwood @ shelter 2
TC_47	salem museum
TC_48	418 e main
TC_49	400 e main
TC_50	316 e main
TC_51	10 s college
TC_52	9 s college
TC_53	e main & college se
TC_54	e main & college sw
TC_55	160 e main
TC_56	calhoun & colorado
TC_57	105 e calhoun
TC_58	100 e main
TC_59	56 e main
TC_60	18 e main
TC_61	library 1
TC_62	library 2
TC_63	library 3
TC_64	library 4
TC_65	e calhoun & s broad se
TC_66	6 e main
TC_67	2 w main
TC_68	14 w main
TC_69	40 w main

CanID	Location
TC_1	hometown bank
TC_5	lake spring 1
TC_6	lake spring 2
TC_7	lake spring 3
TC_8	lake spring 4
TC_9	lake spring 5
TC_10	lake spring 6
TC_11	lake spring 7
TC_12	lake spring 8
TC_13	lake spring 9
TC_14	lake spring 10
TC_15	w main & n shanks
TC_70	404 w main
TC_71	829 w main

CanID	Location
TC_2	4th & union
TC_3	4th @ andrew lewis
TC_4	4th @ school board

0 50 100 200 300
Feet

Scale: 1 inch = 100 feet

Date: June 2018

Project File:
N:\GIS\ArcGISPro_Projects\SalemGIS\SalemGIS.aprx
Project: SalemGIS Layout:TrashCanLocations

The mapped information has been compiled from City Tax map records, USGS census data, Virginia Department of Transportation base mapping and 1992 Aerial Photography. Horizontal control is based on the North American Geodetic Vertical Datum of 1983. It has been computed on the Virginia State Plane NAD 83, South Zone, complying with the National Map Accuarcy Standards. Efforts have been made to verify the information shown hereon. The City of Salem assumes no liability for damages arising from errors or omissions. The information is deemed accurate, but not warranted. Please notify the City of Salem Engineering Department of any inconsistency.

Salem Annual Good Housekeeping and Pollution Prevention Training Documentation Form

Trainer: Jennifer Jones **Date:** June 20, 2018 **Location:** City of Salem

	Print Name	Position	Signature
1	Robert Humphreys	VLT II	
2	Billy Wolfe	Crew Supervisor	
3	Dewayne Belcher	Crew Supervisor	Dwayne Belcher
4	TJ Hyler	MEO	
5	Mark Weinczek	CW1	
6	Edsel Conner	CW1	
7	Tim MELTON	CW II	
8	Donnie Francisco JR	Supervisor	
9	Brad Jordan	Supervisor	
10	Jonathan Hess	driver	
11	Will Shaner	Asst Chief WTP Operator	
12	FRANK YOUNG	Chief WTP Operator	
13	Brandon Bff	Utility maint. Asst. manager	
14	Kevin Wilson	Maint.	
15	Blake Keffer	Mechanic	
16	Nathan Coleman	Equiptment Operator	
17	Brett Simpson	Equipment operator	
18	Scott Hall	PARKS & REC.	
19	Nat Franklin	Parks & Rec.	Nat Franklin
	ROHAN HOLNESS	CW	Rohan Holness

	Print Name	Position	Signature
20	Roger Conner	Sanitation Driver	
21	Richard E Dent	Sanitation	
22	John Wade	Sanitation Supt	
23	James Stafford	Supervisor Water	
24	Nelson Culley	Civic Center Ops	
25	Billy Huffman	Supervisor P&R	
26	Josh Fogle	P&R Worker	
27	Richard Bateman	Football stadium CivicCenter	Richard Bateman
28	Billy Kessinger	Sanitation	Billy Kessinger
29	DAVID McGuinnes	sanitation	
30	Summer Brooks	Street	
31	John Shaner	P+R. Director	
32	Laura Tucker	Exec Executive Secretary	
33	Rodney	Street	
34	Blake Harris	Street	
35	Sam McKinney	Sanitation	
36	Josh Brown	PR Program Super	
37	Brian Shrewsbury	Street	
38	Cameron Taylor	Building Main.	
39	Devin Brannigan	Building Main	
40	Jessi Schmidt	Buildng main	

	Print Name	Position	Signature
41	TRACY DIVERS	Building Maint Supervisor	
42	Mark Meyer	Mechanic	
43	Josh Wilson	Mechanic	
44	Montana Brogan	Mechanic	
45	Jeff Williams	Build Maint Tech 3	
46	JEFF CRANE	B MAINT	
47	Tim Martin	Fleet Supv	
48	TODD SUTPHIN	ASST DIRECTOR STREET	
49	Justin Kuzmicd	REAL Estate Assessor	
50	Jeremy Terry	Build Maint Tech	
51	MARTY Kessinger	Street Dept	
52	Jaime R Viera Tebo	Street Dept	
53	Zac Barton	Street Dept	
54	Joe Harbour	Parks & Rec	
55	James Hodge	Sports office maintenance	
56	Jesse Beck	Street	
57	William A Baker	Street Dept	
58	Brock Carr	Street Dept	
59	Laura Reilly	HORTICULTURIST	
60	April Statom	Sheriff	
	SAM DRISCOLL	COMM. DEV. INSPECTOR	
	JOSH PRATT	I.T. ENGINEER	

Appendix B – Outfall Inventory

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

Outfall ID	Latitude	Longitude	Area Drainage to Outfall (SF)	Area Drainage to Outfall (Acres)	Name of Receiving Water	Virginia HUC6	Is Receiving Water Impaired?	2010 303b/303d Impairment(s)	Applicable TMDL(s)	Date of last Screening	Summary of Screening Results	Details of Any Necessary Followup	Followup Resolution	Comments	# Inspections Completed During Reporting Year
006-01	37° 19' 11.128" N	80° 2' 15.779" W	55446.19	1.27	Mason Creek	Mason Creek (RU10)	Yes	Benthic, Bacteria	Sediment, E-Coli, PCB	6/11/2015	Unlikely	None Needed	N/A		0
006-03	37° 19' 4.304" N	80° 2' 6.717" W	53095.99	1.22	Mason Creek	Mason Creek (RU10)	Yes	Benthic, Bacteria	Sediment, E-Coli, PCB	6/8/2015	Unlikely	None Needed	N/A		0
012-04	37° 19' 3.313" N	80° 2' 7.180" W	1843932.86	42.33	Mason Creek	Mason Creek (RU10)	Yes	Benthic, Bacteria	Sediment, E-Coli, PCB	6/8/2015	Unlikely	None Needed	Spring fed flow, natural	2 24 CONC PIPES	0
016-01	37° 18' 47.201" N	80° 1' 55.643" W	161778.77	3.71	Mason Creek	Mason Creek (RU10)	Yes	Benthic, Bacteria	Sediment, E-Coli, PCB	6/11/2015	Unlikely	None Needed	N/A		0
020-02	37° 18' 44.042" N	80° 3' 11.187" W	9639.68	0.22	Tributary to Mason Creek	Mason Creek (RU10)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	6/17/2015	Unlikely	None Needed	N/A		0
020-04	37° 18' 43.636" N	80° 3' 9.582" W	28822.65	0.66	Tributary to Mason Creek	Mason Creek (RU10)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	6/17/2015	Unlikely	None Needed	N/A	End Damaged	0
020-05	37° 18' 43.483" N	80° 3' 11.064" W	386071.77	8.86	Tributary to Mason Creek	Mason Creek (RU10)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	6/17/2015	Unlikely	None Needed	Spring fed flow, natural		0
020-06	37° 18' 45.576" N	80° 3' 11.855" W	186629.23	4.28	Tributary to Mason Creek	Mason Creek (RU10)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	6/17/2015	Unlikely	None Needed	N/A		0
020-07	37° 18' 45.920" N	80° 3' 12.053" W	31788.19	0.73	Tributary to Mason Creek	Mason Creek (RU10)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	6/17/2015	Unlikely	Consider cleanout	N/A	1/2 Sediment	0
025-03	37° 18' 39.277" N	80° 3' 23.321" W	446245.03	10.24	Snyders Branch	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	9/20/2018	Unlikely	None Needed	N/A		1
025-05	37° 18' 36.998" N	80° 3' 21.998" W	69144.04	1.59	Snyders Branch	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	9/20/2018	Unlikely	None Needed	N/A		1
026-02	37° 18' 42.445" N	80° 3' 9.297" W	31430.09	0.72	Tributary to Mason Creek	Mason Creek (RU10)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	6/17/2015	Unlikely	None Needed	N/A		0
026-04	37° 18' 38.937" N	80° 3' 7.244" W	299067.46	6.87	Tributary to Mason Creek	Mason Creek (RU10)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	5/18/2017	Unlikely	None Needed	N/A		0
026-05	37° 18' 39.297" N	80° 3' 7.278" W	13038.29	0.30	Gish Branch	Mason Creek (RU10)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	5/18/2017	Unlikely	None Needed	N/A		0
030-02	37° 18' 43.919" N	80° 1' 59.217" W	506835.54	11.64	Mason Creek	Mason Creek (RU10)	Yes	Benthic, Bacteria	Sediment, E-Coli, PCB	6/8/2015	Unlikely	None Needed	Spring fed flow, natural		0
030-06	37° 18' 36.302" N	80° 1' 56.561" W	526497.14	12.09	Mason Creek	Mason Creek (RU10)	Yes	Benthic, Bacteria	Sediment, E-Coli, PCB	6/8/2015	Unlikely	None Needed	N/A		0
030-07	37° 18' 36.786" N	80° 1' 56.608" W	164061.59	3.77	Mason Creek	Mason Creek (RU10)	Yes	Benthic, Bacteria	Sediment, E-Coli, PCB	6/8/2015	Unlikely	None Needed	N/A		0
030-08	37° 18' 36.507" N	80° 1' 57.716" W	239126.73	5.49	Mason Creek	Mason Creek (RU10)	Yes	Benthic, Bacteria	Sediment, E-Coli, PCB	6/8/2015	Unlikely	None Needed	N/A		0
030-09	37° 18' 36.040" N	80° 1' 57.496" W	1322937.73	30.37	Mason Creek	Mason Creek (RU10)	Yes	Benthic, Bacteria	Sediment, E-Coli, PCB	6/8/2015	Unlikely	None Needed	Spring fed flow, natural		0
034-01	37° 18' 31.452" N	80° 1' 53.677" W	287763.84	6.61	Mason Creek	Mason Creek (RU10)	Yes	Benthic, Bacteria	Sediment, E-Coli, PCB	6/11/2015	Unlikely	None Needed	N/A		0
034-02	37° 18' 30.346" N	80° 1' 52.998" W	216426.85	4.97	Mason Creek	Mason Creek (RU10)	Yes	Benthic, Bacteria	Sediment, E-Coli, PCB	6/11/2015	Unlikely	None Needed	N/A		0
034-03	37° 18' 32.299" N	80° 1' 55.105" W	1314872.71	30.19	Mason Creek	Mason Creek (RU10)	Yes	Benthic, Bacteria	Sediment, E-Coli, PCB	5/23/2014	Unlikely	None Needed	N/A		0
034-09	37° 18' 25.001" N	80° 1' 50.397" W	144709.98	3.32	Mason Creek	Mason Creek (RU10)	Yes	Benthic, Bacteria	Sediment, E-Coli, PCB	5/23/2014	Unlikely	None Needed	N/A	plastic	0
039-01	37° 18' 31.374" N	80° 3' 17.661" W	30787.70	0.71	Snyders Branch	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	9/20/2018	Unlikely	None Needed	N/A	Partial Sediment	1
039-05	37° 18' 26.506" N	80° 3' 15.778" W	149962.88	3.44	Snyders Branch	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	9/20/2018	Unlikely	Consider repair	N/A		1
039-06	37° 18' 26.539" N	80° 3' 15.308" W	252927.49	5.81	Snyders Branch	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	9/20/2018	Unlikely	None Needed	N/A		1
043-01	37° 18' 18.741" N	80° 4' 24.138" W	425772.98	9.77	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB		Unlikely	None Needed	N/A		0
048-01	37° 18' 19.837" N	80° 2' 42.921" W	1918138.93	44.03	Tributary to Mason Creek	Mason Creek (RU10)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	6/11/2015	Unlikely	None Needed	N/A	Partial Sediment	0
048-04	37° 18' 19.432" N	80° 2' 43.408" W	52009.95	1.19	Tributary to Mason Creek	Mason Creek (RU10)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	6/11/2015	Unlikely	None Needed	N/A		0
051-01	37° 18' 22.522" N	80° 1' 43.976" W	746368.91	17.13	Mason Creek	Mason Creek (RU10)	Yes	Benthic, Bacteria	Sediment, E-Coli, PCB	5/18/2017	Unlikely	None Needed	N/A		0
051-04	37° 18' 17.271" N	80° 1' 44.654" W	901132.92	20.69	Mason Creek	Mason Creek (RU10)	Yes	Benthic, Bacteria	Sediment, E-Coli, PCB	6/11/2015	Unlikely	Consider cleanout/repair	N/A	2/3 Sediment, End Damaged	0
051-05	37° 18' 17.090" N	80° 1' 44.423" W	1088421.63	24.99	Mason Creek	Mason Creek (RU10)	Yes	Benthic, Bacteria	Sediment, E-Coli, PCB	6/11/2015	Unlikely	None Needed	N/A	1/3 Sediment	0
051-06	37° 18' 16.631" N	80° 1' 45.411" W	268129.53	6.16	Mason Creek	Mason Creek (RU10)	Yes	Benthic, Bacteria	Sediment, E-Coli, PCB	5/23/2014	Unlikely	None Needed	N/A		0
055-04	37° 18' 11.721" N	80° 1' 38.871" W	3384424.48	77.70	Mason Creek	Mason Creek (RU10)	Yes	Benthic, Bacteria	Sediment, E-Coli, PCB	5/19/2017	Unlikely	Consider cleanout	N/A	1/2 Sediment	0
056-02	37° 18' 7.693" N	80° 1' 53.974" W	143223.58	3.29	Tributary to Mason Creek	Mason Creek (RU10)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	5/19/2017	Unlikely	None Needed	N/A		0
056-03	37° 18' 7.869" N	80° 1' 53.953" W	1681685.07	38.61	Tributary to Mason Creek	Mason Creek (RU10)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	5/23/2014	Unlikely	None Needed	N/A		0
056-06	37° 18' 10.710" N	80° 1' 41.816" W	28650.11	0.66	Mason Creek	Mason Creek (RU10)	Yes	Benthic, Bacteria	Sediment, E-Coli, PCB	5/19/2017	Unlikely	None Needed	N/A	Partial Sediment	0
057-02	37° 18' 10.621" N	80° 2' 18.030" W	1308173.20	30.03	Tributary to Mason Creek	Mason Creek (RU10)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	6/11/2015	Unlikely	None Needed	N/A		0
057-03	37° 18' 5.479" N	80° 2' 11.198" W	29697.76	0.68	Tributary to Mason Creek	Mason Creek (RU10)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	6/11/2015	Unlikely	None Needed	N/A		0
057-05	37° 18' 5.618" N	80° 2' 8.242" W	1025656.76	23.55	Tributary to Mason Creek	Mason Creek (RU10)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	6/11/2015	Unlikely	None Needed	N/A	End partially submerged in water	0
057-06	37° 18' 7.162" N	80° 2' 6.080" W	523196.94	12.01	Tributary to Mason Creek	Mason Creek (RU10)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	6/11/2015	Unlikely	None Needed	N/A	Into cb	0
057-07	37° 18' 7.137" N	80° 2' 5.587" W	30170.59	0.69	Tributary to Mason Creek	Mason Creek (RU10)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	6/11/2015	Unlikely	None Needed	N/A		0
060-03	37° 18' 12.994" N	80° 3' 7.973" W	119179.75	2.74	Snyders Branch	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	9/20/2018	Unlikely	None Needed	N/A	Open Channel w/ 1/2 pipe on top	1
060-05	37° 18' 9.583" N	80° 3' 5.711" W	593789.66	13.63	Snyders Branch	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	9/20/2018	Unlikely	Consider repair	N/A	Bottom Rusted, Headwall Cut	1
060-08	37° 18' 5.353" N	80° 3' 5.699" W	92840.48	2.13	Snyders Branch	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	9/20/2018	Unlikely	None Needed	N/A		1
060-09	37° 18' 4.449" N	80° 3' 5.668" W	2893147.44	66.42	Snyders Branch	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	9/20/2018	Unlikely	None Needed	N/A	Natural spring flow present	1
060-10	37° 18' 4.461" N	80° 3' 5.816" W	153744.75	3.53	Snyders Branch	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	9/20/2018	Unlikely	None Needed	N/A		1
060-11	37° 18' 4.075" N	80° 3' 5.672" W	23678.03	0.54	Snyders Branch	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	9/20/2018	Unlikely	None Needed	N/A		1
060-12	37° 18' 4.081" N	80° 3' 5.784" W	90025.45	2.07	Snyders Branch	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	9/20/2018	Unlikely	None Needed	N/A		1
061-02	37° 18' 9.238" N	80° 3' 24.396" W	901426.48	20.69	Snyders Branch	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	9/20/2018	Unlikely	None Needed	N/A	End partially submerged in water	1
061-07	37° 18' 4.880" N	80° 3' 29.559" W	69684.93	1.60	Snyders Branch	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	9/20/2018	Unlikely	None Needed	N/A		1
062-05	37° 18' 6.329" N	80° 3' 50.461" W	366543.48	8.41	Snyders Branch	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	9/20/2018	Unlikely	None Needed	N/A	End partially submerged in water	1
062-06	37° 18' 5.212" N	80° 3' 49.182" W	302711.64	6.95	Snyders Branch	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	9/20/2018	Unlikely	None Needed	N/A	End partially submerged in water	1
064-01	37° 18' 9.647" N	80° 4' 17.743" W	645130.47	14.81	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	10/19/2017	Unlikely	None Needed	N/A	*Data loss, reinspect	1
068-01	37° 18' 2.974" N	80° 4' 12.313" W	225076.75	5.17	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	9/20/2018	Unlikely	None Needed	N/A		1
068-04	37° 17' 57.586" N	80° 4' 11.182" W	1087762.14	24.97	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	9/20/2018	Unlikely	None Needed	N/A		1
068-05	37° 17' 54.925" N	80° 4' 11.019" W	55772.28	1.28	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	9/20/2018	Unlikely	None Needed	N/A		1
068-06	37° 17' 55.164" N	80° 4' 10.879" W	1193959.10	27.41	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	9/20/2018	Unlikely	None Needed	N/A	5FTX20FT BOX CULVERT	1
068-07	37° 17' 55.092" N	80° 4' 10.688" W	37469.70	0.86	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	9/20/2018	Unlikely	None Needed	N/A		1
070-01	37° 18' 2.555" N	80° 3' 42.814" W	1389580.31	31.90	Snyders Branch	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	5/19/2017	Unlikely	None Needed	N/A	Trickle flow present, natural spring	0
072-01	37° 18' 1.100" N	80° 3' 3.494" W	2944822.58	67.60	Snyders Branch	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	9/20/2018	Unlikely	None Needed	Spring fed flow, natural	Trickle flow present, natural spring	1
072-02	37° 17' 54.948" N	80° 3' 7.886" W	289244.57	6.64	Snyders Branch	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	9/20/2018	Unlikely	None Needed	N/A		1
072-03	37° 18' 2.440" N	80° 3' 5.230" W	49056.73	1.13	Snyders Branch	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	9/20/2018	Unlikely	None Needed	N/A		1
076-01	37° 18' 2.808" N	80° 1' 48.326" W	175111.77	4.02	Mason Creek	Mason Creek (RU10)	Yes	Benthic, Bacteria	Sediment, E-Coli, PCB	5/23/2014	Unlikely	None Needed	N/A	novozymes	0
076-02	37° 18' 0.495" N	80° 1' 49.552" W	56566.67	1.30	Mason Creek	Mason Creek (RU10)	Yes	Benthic, Bacteria	Sediment, E-Coli, PCB	5/23/2014	Unlikely	None Needed	N/A		0
076-05	37° 18' 2.092" N	80° 1' 48.110" W	799098.78	18.34	Mason Creek	Mason Creek (RU10)	Yes	Benthic, Bacteria	Sediment, E-Coli, PCB	6/18/2014	Unlikely	None Needed	N/A		0
081-01	37° 17' 52.026" N	80° 1' 48.175" W	2361446.87	54.21	Mason Creek	Mason Creek (RU10)	Yes	Benthic, Bacteria	Sediment, E-Coli, PCB	6/18/2014	Unlikely	None Needed	N/A		0
081-02	37° 17' 50.902" N	80° 1' 47.535" W	25496.00	0.59	Mason Creek	Mason Creek (RU10)	Yes	Benthic, Bacteria	Sediment, E-Coli, PCB	5/18/2017	Unlikely	Consider cleanout	TBD	Sediment	0
081-04	37° 17' 50.842" N	80° 1' 49.346" W	4623244.92	106.14	Mason Creek	Mason Creek (RU10)	Yes	Benthic, Bacteria	Sediment, E-Coli, PCB	6/18/2014	Unlikely	None Needed	N/A		0
081-05	37° 17' 48.840" N	80° 1' 47.020" W	51858.59	1.19	Mason Creek	Mason Creek (RU10)	Yes	Benthic, Bacteria	Sediment, E-Coli, PCB	5/23/2014	Unlikely	None Needed	N/A		0
081-06	37° 17' 45.297" N	80° 1' 46.319" W	3609366.16	82.86	Mason Creek	Mason Creek (RU10)	Yes	Benthic, Bacteria	Sediment, E-Coli, PCB	5/23/2014	Unlikely	None Needed	N/A		0
081-07	37° 17' 51.713" N	80° 1' 49.584" W	2758403.73	63.32	Mason Creek	Mason Creek (RU10)	Yes	Benthic, Bacteria	Sediment, E-Coli, PCB	6/18/2014	Unlikely	None Needed	N/A		0
081-08	37° 17' 50.641" N	80° 1' 47.513" W	34683.52	0.80	Mason Creek	Mason Creek (RU10)	Not Assessed	Benthic, Bacteria	Sediment, E-Coli, PCB	5/18/2017	Unlikely	Consider cleanout	TBD	Sediment	0
085-01	37° 17' 51.867" N	80° 3' 8.738" W	85488.59	1.96	Snyders Branch	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	9/20/2018	Unlikely	None Needed	Spring fed flow, natural		1
085-02	37° 17' 52.517" N	80° 3' 8.938" W	65692.71	1.51	Snyders Branch	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	9/20/2018	Unlikely	None Needed	N/A		1
088-01	37° 17' 45.105" N	80° 4' 6.279" W	132537.54	3.04	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	6/25/2015	Unlikely	None Needed	Spring fed flow, natural		0
088-02	37° 17' 43.709" N	80° 4' 5.164" W	1024034.76	23.51	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	6/25/2015	Unlikely	None Needed	N/A		0
089-01	37° 17' 51.117" N	80° 4' 10.401" W	65077.87	1.49	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	6/29/2015	Unlikely	None Needed	N/A		0
089-02	37° 17' 48.869" N	80° 4' 9.141" W	105445.63	2.42	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	6/29/2015	Unlikely	None Needed	N/A		0
090-03	37° 17' 51.534" N	80° 4' 39.507" W	1718191.99	39.44	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	6/18/2014	Unlikely	None Needed	N/A		0

090-04	37° 17' 51.869" N	80° 4' 40.045" W	308027.90	7.07	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	6/15/2016	Unlikely	None Needed	N/A		0
090-05	37° 17' 48.879" N	80° 4' 38.696" W	15528.68	0.36	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	6/18/2014	Unlikely	None Needed	N/A		0
090-06	37° 17' 45.570" N	80° 4' 39.810" W	14603.85	0.34	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB		Unlikely	None Needed	N/A		0
094-01	37° 17' 42.920" N	80° 6' 9.681" W	50117.94	1.15	Horners Branch	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	6/9/2017	Unlikely	None Needed	N/A		0
097-01	37° 17' 41.174" N	80° 6' 9.152" W	34167.71	0.78	Horners Branch	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	6/9/2017	Unlikely	None Needed	N/A		0
097-02	37° 17' 41.394" N	80° 6' 9.220" W	25149.08	0.58	Horners Branch	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	6/9/2017	Unlikely	None Needed	N/A		0
104-01	37° 17' 42.200" N	80° 4' 3.702" W	145942.44	3.35	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	6/29/2015	Unlikely	None Needed	N/A		0
104-02	37° 17' 39.495" N	80° 4' 2.300" W	208090.51	4.78	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	6/29/2015	Unlikely	None Needed	N/A		0
104-03	37° 17' 37.884" N	80° 4' 1.196" W	354226.82	8.13	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	6/29/2015	Unlikely	None Needed	N/A		0
104-04	37° 17' 37.954" N	80° 3' 59.706" W	758632.22	17.42	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	5/18/2017	Unlikely	None Needed	N/A	Partial Sediment	0
106-01	37° 17' 36.911" N	80° 3' 31.014" W	283829.72	6.52	Snyders Branch	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	6/18/2014	Unlikely	None Needed	N/A		0
106-02	37° 17' 39.438" N	80° 3' 29.538" W	59588.86	1.37	Snyders Branch	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	6/18/2014	Unlikely	None Needed	N/A		0
106-03	37° 17' 42.316" N	80° 3' 29.663" W	206068.12	4.73	Snyders Branch	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	6/18/2014	Unlikely	None Needed	N/A		0
107-02	37° 17' 40.906" N	80° 3' 9.577" W	1287394.61	29.55	Snyders Branch	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	10/19/2017	Unlikely	None Needed	N/A	*Data loss, reinspect	1
107-04	37° 17' 40.636" N	80° 3' 9.642" W	340613.17	7.82	Snyders Branch	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	10/19/2017	Unlikely	None Needed	N/A	*Data loss, reinspect	1
107-05	37° 17' 40.425" N	80° 3' 9.651" W	33650.13	0.77	Snyders Branch	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	10/19/2017	Unlikely	None Needed	N/A	*Data loss, reinspect	1
107-06	37° 17' 39.963" N	80° 3' 9.786" W	62038.90	1.42	Snyders Branch	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	10/19/2017	Unlikely	None Needed	N/A	*Data loss, reinspect	1
116-03	37° 17' 34.643" N	80° 1' 43.458" W	1861091.82	42.72	Mason Creek	Mason Creek (RU10)	Yes	Benthic, Bacteria	Sediment, E-Coli, PCB	5/23/2014	Unlikely	None Needed	N/A		0
116-04	37° 17' 30.273" N	80° 1' 44.263" W	19970.47	0.46	Mason Creek	Mason Creek (RU10)	Yes	Benthic, Bacteria	Sediment, E-Coli, PCB	5/19/2017	Unlikely	None Needed	N/A		0
121-05	37° 17' 25.910" N	80° 3' 23.979" W	75023.30	1.72	Snyders Branch	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	6/12/2015	Unlikely	None Needed	N/A		0
122-01	37° 17' 32.563" N	80° 3' 47.765" W	1328038.81	30.49	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	5/27/2016	Unlikely	None Needed	N/A		0
122-02	37° 17' 30.945" N	80° 3' 47.233" W	268126.67	6.16	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	5/27/2016	Unlikely	None Needed	N/A		0
122-03	37° 17' 31.037" N	80° 3' 46.992" W	99917.49	2.29	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	5/27/2016	Unlikely	None Needed	N/A		0
122-04	37° 17' 27.089" N	80° 3' 47.214" W	73880.04	1.70	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	5/27/2016	Unlikely	None Needed	N/A		0
122-05	37° 17' 26.214" N	80° 3' 47.345" W	145825.68	3.35	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	5/27/2016	Unlikely	None Needed	Spring fed flow, natural		0
122-06	37° 17' 25.962" N	80° 3' 47.347" W	39675.70	0.91	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	5/27/2016	Unlikely	None Needed	N/A		0
122-07	37° 17' 25.917" N	80° 3' 47.121" W	17405.54	0.40	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	5/27/2016	Unlikely	None Needed	N/A		0
122-08	37° 17' 25.591" N	80° 3' 47.184" W	231745.42	5.32	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	5/27/2016	Unlikely	None Needed	N/A		0
122-09	37° 17' 25.513" N	80° 3' 46.920" W	122970.82	2.82	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	5/27/2016	Unlikely	None Needed	N/A		0
125-01	37° 17' 32.983" N	80° 4' 38.295" W	1408185.49	32.33	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	6/15/2016	Unlikely	None Needed	N/A		0
125-03	37° 17' 32.500" N	80° 4' 36.441" W	281624.81	6.47	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	6/15/2016	Unlikely	None Needed	N/A		0
125-05	37° 17' 31.945" N	80° 4' 37.901" W	180344.88	4.14	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	6/15/2016	Unlikely	None Needed	N/A	3 - hdpe	0
130-01	37° 17' 31.208" N	80° 6' 1.137" W	2195411.05	50.40	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	5/24/2016	Unlikely	None Needed	N/A	GREEN PLASTIC	0
130-02	37° 17' 31.087" N	80° 6' 0.751" W	30613.06	0.70	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	5/24/2016	Unlikely	None Needed	N/A		0
133-01	37° 17' 14.040" N	80° 7' 4.792" W	36238.58	0.83	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	6/9/2017	Unlikely	None Needed	N/A		0
133-02	37° 17' 14.298" N	80° 7' 3.478" W	149315.41	3.43	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	6/9/2017	Unlikely	None Needed	N/A		0
133-03	37° 17' 11.597" N	80° 7' 0.022" W	197096.01	4.52	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	6/9/2017	Unlikely	None Needed	N/A		0
135-01	37° 17' 21.602" N	80° 6' 26.231" W	935128.48	21.47	Paint Bank Branch	Roanoke River (RU09)	No	None	Sediment, E-Coli, PCB	6/9/2017	Unlikely	None Needed	N/A		0
135-02	37° 17' 19.736" N	80° 6' 20.679" W	649620.93	14.91	Paint Bank Branch	Roanoke River (RU09)	No	None	Sediment, E-Coli, PCB	6/9/2017	Unlikely	None Needed	N/A		0
135-03	37° 17' 18.924" N	80° 6' 21.701" W	35467.08	0.81	Paint Bank Branch	Roanoke River (RU09)	No	None	Sediment, E-Coli, PCB	6/9/2017	Unlikely	None Needed	N/A		0
136-01	37° 17' 16.060" N	80° 6' 13.753" W	349852.24	8.03	Paint Bank Branch	Roanoke River (RU09)	No	None	Sediment, E-Coli, PCB	6/9/2017	Unlikely	None Needed	N/A		0
136-02	37° 17' 14.248" N	80° 6' 7.935" W	122858.11	2.82	Paint Bank Branch	Roanoke River (RU09)	No	None	Sediment, E-Coli, PCB	6/9/2017	Unlikely	None Needed	N/A		0
137-02	37° 17' 17.191" N	80° 5' 44.278" W	57303.32	1.32	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	5/24/2016	Unlikely	None Needed	N/A		0
137-03	37° 17' 15.872" N	80° 5' 42.376" W	1345839.95	30.90	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	5/24/2016	Unlikely	None Needed	N/A		0
137-04	37° 17' 15.955" N	80° 5' 42.199" W	960696.45	22.05	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	5/24/2016	Unlikely	None Needed	N/A		0
137-05	37° 17' 15.078" N	80° 5' 41.945" W	271487.95	6.23	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	5/24/2016	Unlikely	None Needed	N/A		0
137-06	37° 17' 15.141" N	80° 5' 41.682" W	79206.76	1.82	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	5/24/2016	Unlikely	None Needed	N/A		0
137-07	37° 17' 19.369" N	80° 5' 46.164" W	16692.67	0.38	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	5/24/2016	Unlikely	None Needed	N/A		0
139-01	37° 17' 15.140" N	80° 5' 20.673" W	1044296.99	23.97	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	5/24/2016	Unlikely	None Needed	N/A		0
139-02	37° 17' 15.039" N	80° 5' 20.719" W	39739.70	0.91	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	5/24/2016	Unlikely	None Needed	N/A		0
139-03	37° 17' 13.275" N	80° 5' 20.207" W	1526244.12	35.04	Horners Branch	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	10/20/2017	Unlikely	None Needed	N/A	*Data loss, reinspect	1
140-10	37° 17' 14.666" N	80° 4' 49.267" W	795165.25	18.25	Paint Bank Branch	Roanoke River (RU09)	No	None	Sediment, E-Coli, PCB	6/18/2014	Unlikely	None Needed	N/A		0
140-12	37° 17' 13.945" N	80° 4' 50.007" W	57354.45	1.32	Paint Bank Branch	Roanoke River (RU09)	No	None	Sediment, E-Coli, PCB	5/25/2016	Unlikely	None Needed	N/A		0
140-13	37° 17' 15.067" N	80° 4' 53.698" W	114248.61	2.62	Paint Bank Branch	Roanoke River (RU09)	No	None	Sediment, E-Coli, PCB	5/25/2016	Unlikely	None Needed	N/A		0
141-02	37° 17' 13.286" N	80° 4' 37.348" W	20715.60	0.48	Roanoke River	Roanoke River (RU09)	Yes	Bacteria, Temperature, PCBs	Sediment, E-Coli, PCB	9/20/2018	Unlikely	None Needed	N/A	Partial Sediment	1
144-01	37° 17' 19.900" N	80° 3' 48.540" W	302704.62	6.95	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	5/27/2016	Unlikely	None Needed	N/A		0
145-01	37° 17' 16.110" N	80° 3' 21.420" W	1054051.76	24.20	Snyders Branch	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	5/18/2017	Unlikely	None Needed	N/A		0
150-02	37° 17' 24.224" N	80° 1' 41.716" W	967278.74	22.21	Mason Creek	Mason Creek (RU10)	Yes	Benthic, Bacteria	Sediment, E-Coli, PCB	4/11/2014	Unlikely	None Needed	N/A		0
150-03	37° 17' 23.630" N	80° 1' 41.655" W	128387.67	2.95	Mason Creek	Mason Creek (RU10)	Yes	Benthic, Bacteria	Sediment, E-Coli, PCB	4/11/2014	Unlikely	None Needed	N/A		0
150-04	37° 17' 24.261" N	80° 1' 43.170" W	111471.97	2.56	Mason Creek	Mason Creek (RU10)	Yes	Benthic, Bacteria	Sediment, E-Coli, PCB	4/11/2014	Unlikely	None Needed	N/A		0
150-05	37° 17' 23.678" N	80° 1' 43.214" W	4661644.54	107.02	Mason Creek	Mason Creek (RU10)	Yes	Benthic, Bacteria	Sediment, E-Coli, PCB	4/11/2014	Unlikely	None Needed	N/A		0
160-01	37° 17' 11.596" N	80° 3' 20.930" W	187522.20	4.30	Snyders Branch	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	6/15/2016	Unlikely	None Needed	N/A		0
160-02	37° 17' 11.032" N	80° 3' 20.946" W	65416.00	1.50	Snyders Branch	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	10/19/2017	Unlikely	None Needed	N/A	*Data loss, reinspect	1
160-03	37° 17' 14.207" N	80° 3' 21.050" W	45888.34	1.05	Snyders Branch	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	6/15/2016	Unlikely	None Needed	N/A		0
161-02	37° 17' 11.633" N	80° 3' 49.668" W	509108.32	11.69	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	5/27/2016	Unlikely	None Needed	Spring fed flow, natural		0
162-01	37° 17' 12.510" N	80° 3' 49.995" W	1369550.89	31.44	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	5/27/2016	Unlikely	None Needed	N/A	3 outfalls	0
162-02	37° 17' 11.780" N	80° 3' 50.175" W	21723.47	0.50	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	5/27/2016	Unlikely	None Needed	N/A		0
163-01	37° 17' 5.198" N	80° 4' 20.584" W	357570.33	8.21	Roanoke River	Roanoke River (RU09)	Yes	Benthic, Bacteria, Temperature, PCBs	Sediment, E-Coli, PCB	9/29/2011	Unlikely	None Needed	N/A		0
163-04	37° 17' 12.945" N	80° 4' 17.390" W	5140609.36	118.01	Roanoke River	Roanoke River (RU09)	Yes	Benthic, Bacteria, Temperature, PCBs	Sediment, E-Coli, PCB		Unlikely	None Needed	N/A		0
164-01	37° 17' 8.935" N	80° 4' 29.583" W	1364380.11	31.32	Roanoke River	Roanoke River (RU09)	Yes	Benthic, Bacteria, Temperature, PCBs	Sediment, E-Coli, PCB	9/29/2011	Unlikely	None Needed	N/A		0
164-02	37° 17' 10.365" N	80° 4' 44.347" W	264639.53	6.08	Roanoke River	Roanoke River (RU09)	Yes	Bacteria, Temperature, PCBs	Sediment, E-Coli, PCB	9/29/2011	Unlikely	None Needed	N/A		0
164-03	37° 17' 12.748" N	80° 4' 44.389" W	117136.04	2.69	Roanoke River	Roanoke River (RU09)	Yes	Bacteria, Temperature, PCBs	Sediment, E-Coli, PCB	9/20/2018	Unlikely	None Needed	N/A		1
164-04	37° 17' 13.068" N	80° 4' 42.364" W	27579.86	0.63	Roanoke River	Roanoke River (RU09)	Yes	Bacteria, Temperature, PCBs	Sediment, E-Coli, PCB	9/20/2018	Unlikely	None Needed	N/A	Partial Sediment	1
164-05	37° 17' 13.043" N	80° 4' 40.532" W	108981.83	2.50	Roanoke River	Roanoke River (RU09)	Yes	Bacteria, Temperature, PCBs	Sediment, E-Coli, PCB	9/20/2018	Unlikely	None Needed	N/A	Partial Sediment	1
164-07	37° 17' 13.270" N	80° 4' 36.971" W	29297.01	0.67	Roanoke River	Roanoke River (RU09)	Yes	Bacteria, Temperature, PCBs	Sediment, E-Coli, PCB	9/20/2018	Unlikely	None Needed	N/A	Partial Sediment	1
164-08	37° 17' 13.251" N	80° 4' 34.777" W	41799.45	0.96	Roanoke River	Roanoke River (RU09)	Yes	Bacteria, Temperature, PCBs	Sediment, E-Coli, PCB	9/20/2018	Unlikely	None Needed	N/A		1
165-01	37° 17' 8.237" N	80° 4' 59.777" W	229147.70	5.26	Roanoke River	Roanoke River (RU09)	Yes	Bacteria, Temperature, PCBs	Sediment, E-Coli, PCB	9/29/2011	Unlikely	None Needed	N/A		0
165-03	37° 17' 6.467" N	80° 4' 55.049" W	85218.38	1.96	Roanoke River	Roanoke River (RU09)	Yes	Bacteria, Temperature, PCBs	Sediment, E-Coli, PCB	9/29/2011	Unlikely	None Needed	N/A		0
165-04	37° 17' 8.279" N	80° 4' 55.531" W	170547.39	3.92	Roanoke River	Roanoke River (RU09)	Yes	Bacteria, Temperature, PCBs	Sediment, E-Coli, PCB	9/29/2011	Unlikely	None Needed	N/A		0
165-05	37° 17' 8.313" N	80° 4' 54.890" W	53284.67	1.22	Roanoke River	Roanoke River (RU09)	Yes	Bacteria, Temperature, PCBs	Sediment, E-Coli, PCB	9/29/2011	Unlikely	None Needed	N/A		0
165-06	37° 17' 6.478" N	80° 4' 56.249" W	5300870.51	121.69	Roanoke River	Roanoke River (RU09)	Yes	Bacteria, Temperature, PCBs	Sediment, E-Coli, PCB	9/29/2011	Unlikely	None Needed	N/A		0
166-01	37° 17' 11.080" N	80° 5' 16.608" W	4248164.72	97.52	Paint Bank Branch	Roanoke River (RU09)	No	None	Sediment, E-Coli, PCB	5/24/2016	Unlikely	None Needed	Spring fed flow, natural		0
168-01	37° 17' 9.967" N	80° 5' 54.587" W	31754.35	0.73	Paint Bank Branch	Roanoke River (RU09)	No	None	Sediment, E-Coli, PCB	5/24/2016	Unlikely	None Needed	N/A		0

168-02	37° 17' 9.277" N	80° 5' 54.126" W	53054.55	1.22	Paint Bank Branch	Roanoke River (RU09)	No	None	Sediment, E-Coli, PCB	5/24/2016	Unlikely	None Needed	N/A	2 outfalls	0
168-03	37° 17' 9.852" N	80° 5' 54.668" W	125864.78	2.89	Paint Bank Branch	Roanoke River (RU09)	No	None	Sediment, E-Coli, PCB	5/24/2016	Unlikely	None Needed	N/A		0
169-01	37° 17' 11.443" N	80° 6' 1.788" W	399285.63	9.17	Paint Bank Branch	Roanoke River (RU09)	No	None	Sediment, E-Coli, PCB		Unlikely	None Needed	N/A		0
169-02	37° 17' 11.349" N	80° 6' 0.225" W	57283.33	1.32	Paint Bank Branch	Roanoke River (RU09)	No	None	Sediment, E-Coli, PCB	6/9/2017	Unlikely	None Needed	N/A		0
171-02	37° 17' 2.123" N	80° 6' 36.725" W	713494.49	16.38	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	6/9/2017	Unlikely	None Needed	N/A		0
171-03	37° 17' 4.860" N	80° 6' 50.843" W	196950.73	4.52	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	6/9/2017	Unlikely	None Needed	N/A	Partial Sediment	0
171-04	37° 17' 5.196" N	80° 6' 51.767" W	455210.91	10.45	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	6/9/2017	Unlikely	None Needed	N/A	Corrosion	0
173-01	37° 16' 59.918" N	80° 6' 46.072" W	979453.09	22.49	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	6/9/2017	Unlikely	None Needed	N/A	Partial Sediment	0
173-02	37° 16' 53.801" N	80° 6' 39.891" W	79499.83	1.83	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	6/9/2017	Unlikely	None Needed	N/A		0
173-03	37° 16' 53.842" N	80° 6' 39.494" W	43050.61	0.99	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	6/9/2017	Unlikely	None Needed	N/A	Partial Sediment	0
173-04	37° 16' 52.224" N	80° 6' 39.179" W	118402.34	2.72	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	6/9/2017	Unlikely	None Needed	N/A		0
173-05	37° 16' 53.683" N	80° 6' 39.424" W	273291.50	6.27	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	6/9/2017	Unlikely	None Needed	N/A		0
175-01	37° 17' 0.306" N	80° 6' 8.405" W	3252783.57	74.67	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	6/9/2017	Unlikely	None Needed	N/A	Beginning of channel conveyance	0
177-01	37° 16' 57.455" N	80° 5' 23.404" W	494372.52	11.35	Roanoke River	Roanoke River (RU09)	Yes	Bacteria, Temperature, PCBs	Sediment, E-Coli, PCB	5/24/2016	Potential	None Needed	N/A	ssible previous concrete washout wa	0
177-02	37° 16' 57.728" N	80° 5' 27.349" W	45509.07	1.04	Roanoke River	Roanoke River (RU09)	Yes	Bacteria, Temperature, PCBs	Sediment, E-Coli, PCB	5/24/2016	Unlikely	None Needed	N/A		0
178-02	37° 16' 59.954" N	80° 5' 8.230" W	153080.05	3.51	Roanoke River	Roanoke River (RU09)	Yes	Bacteria, Temperature, PCBs	Sediment, E-Coli, PCB	9/29/2011	Unlikely	None Needed	N/A	HDPE	0
178-04	37° 16' 55.220" N	80° 5' 17.801" W	336357.13	7.72	Roanoke River	Roanoke River (RU09)	Yes	Bacteria, Temperature, PCBs	Sediment, E-Coli, PCB		Unlikely	None Needed	N/A		0
181-02	37° 16' 56.357" N	80° 4' 10.161" W	46388.24	1.06	Roanoke River	Roanoke River (RU09)	Yes	Benthic, Bacteria, Temperature, PCBs	Sediment, E-Coli, PCB	9/29/2011	Unlikely	None Needed	N/A		0
182-01	37° 16' 54.305" N	80° 4' 7.729" W	91253.43	2.09	Roanoke River	Roanoke River (RU09)	Yes	Benthic, Bacteria, Temperature, PCBs	Sediment, E-Coli, PCB	9/29/2011	Unlikely	None Needed	N/A		0
182-03	37° 16' 56.538" N	80° 4' 0.508" W	246339.79	5.66	Roanoke River	Roanoke River (RU09)	Yes	Benthic, Bacteria, Temperature, PCBs	Sediment, E-Coli, PCB	9/29/2011	Unlikely	None Needed	N/A		0
182-04	37° 16' 57.039" N	80° 4' 0.355" W	6179774.24	141.87	Roanoke River	Roanoke River (RU09)	Yes	Benthic, Bacteria, Temperature, PCBs	Sediment, E-Coli, PCB	9/29/2011	Unlikely	None Needed	N/A		0
182-08	37° 16' 55.194" N	80° 4' 4.112" W	243334.82	5.59	Roanoke River	Roanoke River (RU09)	Yes	Benthic, Bacteria, Temperature, PCBs	Sediment, E-Coli, PCB		Unlikely	None Needed	N/A	hdpe	0
183-02	37° 17' 1.484" N	80° 3' 48.622" W	709038.22	16.28	Roanoke River	Roanoke River (RU09)	Yes	Benthic, Bacteria, Temperature, PCBs	Sediment, E-Coli, PCB	9/29/2011	Unlikely	None Needed	N/A		0
183-03	37° 17' 1.470" N	80° 3' 48.413" W	23327.45	0.54	Roanoke River	Roanoke River (RU09)	Yes	Benthic, Bacteria, Temperature, PCBs	Sediment, E-Coli, PCB	9/29/2011	Unlikely	None Needed	N/A		0
183-04	37° 16' 54.993" N	80° 3' 34.120" W	393779.68	9.04	Roanoke River	Roanoke River (RU09)	Yes	Benthic, Bacteria, Temperature, PCBs	Sediment, E-Coli, PCB	10/19/2012	Unlikely	None Needed	N/A		0
183-05	37° 17' 1.623" N	80° 3' 35.028" W	1498501.85	34.40	Roanoke River	Roanoke River (RU09)	Yes	Benthic, Bacteria, Temperature, PCBs	Sediment, E-Coli, PCB	6/15/2016	Suspect	Do Field Investigation	Complete	Spring fed flow, natural	0
184-06	37° 16' 58.257" N	80° 3' 16.797" W	565790.81	12.99	Snyders Branch	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB		Unlikely	None Needed	N/A		0
189-03	37° 16' 57.151" N	80° 1' 42.558" W	394620.44	9.06	Mason Creek	Mason Creek (RU10)	Yes	Benthic, Bacteria	Sediment, E-Coli, PCB	10/20/2017	Unlikely	None Needed	N/A	*Data loss, reinspect	1
195-02	37° 16' 52.491" N	80° 1' 45.552" W	2518998.39	57.83	Mason Creek	Mason Creek (RU10)	Yes	Benthic, Bacteria	Sediment, E-Coli, PCB	10/20/2017	Unlikely	None Needed	N/A	hannel from pond water, *Data loss,	1
195-03	37° 16' 49.872" N	80° 1' 46.987" W	32656.37	0.75	Mason Creek	Mason Creek (RU10)	Yes	Benthic, Bacteria	Sediment, E-Coli, PCB	10/20/2017	Unlikely	None Needed	N/A	*Data loss, reinspect	1
195-04	37° 16' 55.778" N	80° 1' 44.019" W	39907.53	0.92	Mason Creek	Mason Creek (RU10)	Yes	Benthic, Bacteria	Sediment, E-Coli, PCB	10/20/2017	Unlikely	None Needed	N/A	*Data loss, reinspect	1
200-02	37° 16' 46.762" N	80° 3' 26.345" W	105268.41	2.42	Roanoke River	Roanoke River (RU09)	Yes	Benthic, Bacteria, Temperature, PCBs	Sediment, E-Coli, PCB	10/19/2012	Unlikely	None Needed	N/A		0
200-03	37° 16' 48.428" N	80° 3' 29.138" W	133436.53	3.06	Roanoke River	Roanoke River (RU09)	Yes	Benthic, Bacteria, Temperature, PCBs	Sediment, E-Coli, PCB	10/19/2012	Unlikely	None Needed	N/A		0
203-01	37° 16' 51.865" N	80° 4' 14.501" W	391285.34	8.98	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB		Unlikely	None Needed	N/A		0
206-01	37° 16' 47.599" N	80° 5' 4.728" W	775222.83	17.80	Roanoke River	Roanoke River (RU09)	Yes	Bacteria, Temperature, PCBs	Sediment, E-Coli, PCB	6/18/2014	Unlikely	None Needed	N/A		0
206-03	37° 16' 44.815" N	80° 5' 8.802" W	196951.86	4.52	Roanoke River	Roanoke River (RU09)	Yes	Bacteria, Temperature, PCBs	Sediment, E-Coli, PCB	5/24/2016	Unlikely	None Needed	N/A		0
214-01	37° 16' 38.229" N	80° 4' 20.959" W	397733.91	9.13	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	5/19/2017	Unlikely	None Needed	N/A	End slightly crushed/corroded	0
214-02	37° 16' 36.633" N	80° 4' 23.471" W	69456.14	1.59	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	5/19/2017	Unlikely	None Needed	N/A	Sediment	0
217-01	37° 16' 40.557" N	80° 3' 25.400" W	130016.00	2.98	Roanoke River	Roanoke River (RU09)	Yes	Benthic, Bacteria, Temperature, PCBs	Sediment, E-Coli, PCB	10/19/2012	Unlikely	None Needed	N/A		0
217-02	37° 16' 36.841" N	80° 3' 17.564" W	195852.24	4.50	Roanoke River	Roanoke River (RU09)	Yes	Benthic, Bacteria, Temperature, PCBs	Sediment, E-Coli, PCB	10/19/2012	Unlikely	None Needed	N/A		0
217-03	37° 16' 34.887" N	80° 3' 14.758" W	734174.48	16.85	Roanoke River	Roanoke River (RU09)	Yes	Benthic, Bacteria, Temperature, PCBs	Sediment, E-Coli, PCB	10/19/2012	Unlikely	None Needed	N/A		0
217-04	37° 16' 41.223" N	80° 3' 27.780" W	1479100.65	33.96	Roanoke River	Roanoke River (RU09)	Yes	Benthic, Bacteria, Temperature, PCBs	Sediment, E-Coli, PCB	10/19/2012	Unlikely	None Needed	N/A		0
217-05	37° 16' 40.651" N	80° 3' 27.860" W	107202.51	2.46	Roanoke River	Roanoke River (RU09)	Yes	Benthic, Bacteria, Temperature, PCBs	Sediment, E-Coli, PCB	10/19/2012	Unlikely	None Needed	N/A		0
217-06	37° 16' 34.933" N	80° 3' 21.602" W	138444.53	3.18	Roanoke River	Roanoke River (RU09)	Yes	Benthic, Bacteria, Temperature, PCBs	Sediment, E-Coli, PCB	10/19/2012	Unlikely	None Needed	N/A		0
217-07	37° 16' 36.144" N	80° 3' 14.491" W	113844.94	2.61	Roanoke River	Roanoke River (RU09)	Yes	Benthic, Bacteria, Temperature, PCBs	Sediment, E-Coli, PCB	10/19/2012	Unlikely	None Needed	N/A	Open Ditch trapezoid	0
217-09	37° 16' 36.317" N	80° 3' 13.151" W	103694.55	2.38	Roanoke River	Roanoke River (RU09)	Yes	Benthic, Bacteria, Temperature, PCBs	Sediment, E-Coli, PCB	10/19/2012	Unlikely	None Needed	N/A		0
218-01	37° 16' 35.738" N	80° 3' 10.934" W	96623.67	2.22	Roanoke River	Roanoke River (RU09)	Yes	Benthic, Bacteria, Temperature, PCBs	Sediment, E-Coli, PCB	10/19/2012	Unlikely	None Needed	N/A		0
222-01	37° 16' 40.662" N	80° 1' 51.526" W	5608892.68	128.76	Mason Creek	Mason Creek (RU10)	Yes	Benthic, Bacteria	Sediment, E-Coli, PCB	10/20/2017	Potential	Do Field Investigation	TBD	w present, green growth, *Data loss	1
222-02	37° 16' 38.602" N	80° 1' 50.217" W	37367.86	0.86	Mason Creek	Mason Creek (RU10)	Yes	Benthic, Bacteria	Sediment, E-Coli, PCB	10/20/2017	Unlikely	None Needed	N/A	*Data loss, reinspect	1
229-04	37° 16' 33.544" N	80° 1' 44.503" W	7435206.36	170.69	Mason Creek	Mason Creek (RU10)	Yes	Benthic, Bacteria	Sediment, E-Coli, PCB	10/20/2017	Unlikely	None Needed	N/A	*Data loss, reinspect	1
229-05	37° 16' 26.228" N	80° 1' 44.190" W	166423.58	3.82	Mason Creek	Mason Creek (RU10)	Yes	Benthic, Bacteria	Sediment, E-Coli, PCB	10/20/2017	Unlikely	None Needed	N/A	*Data loss, reinspect	1
231-02	37° 16' 28.626" N	80° 2' 32.829" W	436378.32	10.02	Roanoke River	Roanoke River (RU09)	Yes	Benthic, Bacteria, Temperature, PCBs	Sediment, E-Coli, PCB	10/19/2012	Unlikely	None Needed	N/A		0
231-03	37° 16' 29.286" N	80° 2' 29.884" W	11311467.61	259.68	Roanoke River	Roanoke River (RU09)	Yes	Benthic, Bacteria, Temperature, PCBs	Sediment, E-Coli, PCB	4/20/2016	Unlikely	None Needed	N/A	culvert rr 88"	0
231-07	37° 16' 27.598" N	80° 2' 29.141" W	615849.25	14.14	Roanoke River	Roanoke River (RU09)	Yes	Benthic, Bacteria, Temperature, PCBs	Sediment, E-Coli, PCB	10/19/2012	Unlikely	None Needed	N/A	HDPE PIPE	0
232-02	37° 16' 29.533" N	80° 2' 36.881" W	19159.40	0.44	Roanoke River	Roanoke River (RU09)	Yes	Benthic, Bacteria, Temperature, PCBs	Sediment, E-Coli, PCB	9/28/2011	Unlikely	None Needed	N/A	hdpe	0
232-03	37° 16' 28.921" N	80° 2' 34.867" W	10144.94	0.23	Roanoke River	Roanoke River (RU09)	Yes	Benthic, Bacteria, Temperature, PCBs	Sediment, E-Coli, PCB	9/28/2011	Unlikely	None Needed	N/A	hpde	0
233-01	37° 16' 29.160" N	80° 2' 54.161" W	218764.18	5.02	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	5/25/2016	Unlikely	None Needed	N/A		0
233-02	37° 16' 31.730" N	80° 2' 58.675" W	133989.23	3.08	Roanoke River	Roanoke River (RU09)	Yes	Benthic, Bacteria, Temperature, PCBs	Sediment, E-Coli, PCB	9/28/2011	Unlikely	None Needed	N/A	hdpe	0
233-03	37° 16' 33.292" N	80° 3' 6.501" W	95081.38	2.18	Roanoke River	Roanoke River (RU09)	Yes	Benthic, Bacteria, Temperature, PCBs	Sediment, E-Coli, PCB	9/28/2011	Unlikely	None Needed	N/A	outlet	0
233-04	37° 16' 34.262" N	80° 3' 11.811" W	344954.74	7.92	Roanoke River	Roanoke River (RU09)	Yes	Benthic, Bacteria, Temperature, PCBs	Sediment, E-Coli, PCB	9/28/2011	Unlikely	None Needed	N/A		0
233-05	37° 16' 34.842" N	80° 3' 7.591" W	487667.46	11.20	Roanoke River	Roanoke River (RU09)	Yes	Benthic, Bacteria, Temperature, PCBs	Sediment, E-Coli, PCB	10/19/2012	Unlikely	None Needed	N/A		0
233-06	37° 16' 33.523" N	80° 3' 3.277" W	397491.83	9.13	Roanoke River	Roanoke River (RU09)	Yes	Benthic, Bacteria, Temperature, PCBs	Sediment, E-Coli, PCB	10/19/2012	Unlikely	None Needed	N/A		0
234-01	37° 16' 34.557" N	80° 3' 12.351" W	18138.82	0.42	Roanoke River	Roanoke River (RU09)	Yes	Benthic, Bacteria, Temperature, PCBs	Sediment, E-Coli, PCB	9/28/2011	Unlikely	None Needed	N/A	hdpe	0
238-01	37° 16' 32.701" N	80° 4' 34.300" W	168922.12	3.88	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	5/19/2017	Unlikely	None Needed	N/A	End rusted, partial blockage	0
238-02	37° 16' 30.050" N	80° 4' 37.081" W	201659.98	4.63	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	5/19/2017	Unlikely	None Needed	N/A		0
238-03	37° 16' 26.201" N	80° 4' 40.688" W	143952.86	3.30	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	5/19/2017	Unlikely	None Needed	N/A		0
240-01	37° 16' 20.902" N	80° 4' 44.548" W	137990.21	3.17	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	5/19/2017	Unlikely	None Needed	N/A	Partial Sediment	0
240-02	37° 16' 16.511" N	80° 4' 47.120" W	332023.08	7.62	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	5/19/2017	Unlikely	None Needed	N/A	Spalling, cracking, or chipping	0
241-01	37° 16' 23.646" N	80° 4' 42.768" W	126991.09	2.92	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	5/19/2017	Unlikely	None Needed	N/A		0
244-01	37° 16' 16.497" N	80° 3' 39.901" W	329980.87	7.58	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	5/25/2016	Unlikely	None Needed	N/A		0
245-01	37° 16' 18.192" N	80° 3' 28.182" W	152830.92	3.51	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	4/11/2014	Unlikely	None Needed	N/A		0
245-02	37° 16' 19.110" N	80° 3' 22.310" W	1506826.04	34.59	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	4/11/2014	Unlikely	None Needed	N/A		0
248-01	37° 16' 18.679" N	80° 2' 18.713" W	25511.54	0.59	Roanoke River	Roanoke River (RU09)	Yes	Benthic, Bacteria, Temperature, PCBs	Sediment, E-Coli, PCB	9/28/2011	Unlikely	None Needed	N/A		0
248-02	37° 16' 17.900" N	80° 2' 18.806" W	319563.20	7.34	Roanoke River	Roanoke River (RU09)	Yes	Benthic, Bacteria, Temperature, PCBs	Sediment, E-Coli, PCB	9/28/2011	Unlikely	None Needed	N/A		0
248-04	37° 16' 18.725" N	80° 2' 18.756" W	143183.13	3.29	Roanoke River	Roanoke River (RU09)	Yes	Benthic, Bacteria, Temperature, PCBs	Sediment, E-Coli, PCB	9/28/2011	Unlikely	None Needed	N/A		0
248-05	37° 16' 18.197" N	80° 2' 20.927" W	17173.52	0.39	Roanoke River	Roanoke River (RU09)	Yes	Benthic, Bacteria, Temperature, PCBs	Sediment, E-Coli, PCB	9/28/2011	Unlikely	None Needed	N/A		0
248-06	37° 16' 17.544" N	80° 2' 20.512" W	158308.20	3.63	Roanoke River	Roanoke River (RU09)	Yes	Benthic, Bacteria, Temperature, PCBs	Sediment, E-Coli, PCB	9/28/2011	Unlikely	None Needed	N/A		0
250-01	37° 16' 25.103" N	80° 1' 44.450" W	546903.95	12.56	Mason Creek	Mason Creek (RU10)	Yes	Benthic, Bacteria	Sediment, E-Coli, PCB	10/20/2017	Unlikely	None Needed	N/A	*Data loss, reinspect	1
255-01	37° 16' 12.526" N	80° 1' 9.607" W	291863.29	6.70	Roanoke River	Roanoke River (RU09)	Yes	Benthic, Bacteria, PCBs	Sediment, E-Coli, PCB	10/23/2012	Unlikely	None Needed	N/A		0
257-01	37° 16' 16.191" N	80° 1' 44.346" W	464634.82	10.67	Mason Creek	Mason Creek (RU10)	Yes	Benthic, Bacteria	Sediment, E-Coli, PCB		Unlikely	None Needed	N/A		0
259-01	37° 16' 10.436" N	80° 2' 17.372" W	204798.71	4.70	Roanoke River	Roanoke River (RU09)	Yes	Benthic, Bacteria, PCBs	Sediment, E-Coli, PCB	9/28/2011	Unlikely	None Needed	N/A		0
259-02	37° 16' 11.948" N	80° 2' 19.343" W	210884.26	4.84	Roanoke River	Roanoke River (RU09)	Yes	Benthic, Bacteria, PCBs	Sediment, E-Coli, PCB	9/28/2011	Unlikely	None Needed	N/A		0
259-03	37° 16' 15.343" N	80° 2' 20.011" W	67454.60	1.55	Roanoke River	Roanoke River (RU09)	Yes	Benthic, Bacteria, PCBs	Sediment, E-Coli, PCB	9/28/2011	Unlikely	None Needed	N/A		0

260-01	37° 16' 8.008" N	80° 2' 42.241" W	409099.17	9.39	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	5/17/2017	Unlikely	None Needed	N/A		0
261-02	37° 16' 6.481" N	80° 3' 8.329" W	269567.57	6.19	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	5/19/2017	Unlikely	None Needed	N/A	PLASTIC	0
261-03	37° 16' 6.554" N	80° 3' 4.517" W	288072.05	6.61	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	5/19/2017	Unlikely	None Needed	N/A	PLASTIC	0
263-01	37° 16' 14.115" N	80° 3' 46.494" W	52059.10	1.20	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	5/25/2016	Unlikely	None Needed	N/A		0
263-02	37° 16' 14.215" N	80° 3' 44.400" W	2100106.13	48.21	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	5/25/2016	Unlikely	None Needed	N/A		0
264-02	37° 16' 11.901" N	80° 3' 51.521" W	245310.48	5.63	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	5/25/2016	Unlikely	None Needed	N/A		0
270-01	37° 16' 0.747" N	80° 4' 7.105" W	213000.00	4.89	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	5/17/2017	Unlikely	None Needed	N/A	Mowles Spring Park	0
270-02	37° 15' 49.544" N	80° 4' 14.777" W	29000.00	0.67	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	5/17/2017	Unlikely	None Needed	N/A	Mowles Spring Park	0
270-03	37° 15' 48.019" N	80° 4' 16.774" W	30000.00	0.69	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	5/17/2017	Unlikely	None Needed	N/A	Mowles Spring Park	0
270-04	37° 15' 48.827" N	80° 4' 21.071" W	54000.00	1.24	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	5/17/2017	Obvious	None Needed	N/A	Mowles Spring, natual spring flow	0
271-01	37° 16' 2.209" N	80° 3' 48.326" W	985180.82	22.62	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	5/25/2016	Unlikely	None Needed	N/A		0
273-01	37° 16' 4.412" N	80° 3' 15.044" W	2516964.59	57.78	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	5/17/2017	Unlikely	None Needed	N/A		0
274-01	37° 16' 4.715" N	80° 2' 56.534" W	371648.77	8.53	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB		Unlikely	None Needed	N/A		0
274-02	37° 16' 4.740" N	80° 2' 56.379" W	298857.46	6.86	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	5/17/2017	Unlikely	None Needed	N/A		0
274-04	37° 16' 4.401" N	80° 2' 55.330" W	28894.96	0.66	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	5/17/2017	Suspect	Contact homeowner	Complete	Sump pump tied into roof leader	0
275-01	37° 16' 4.679" N	80° 2' 50.946" W	107185.77	2.46	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	5/17/2017	Unlikely	None Needed	N/A		0
275-03	37° 15' 59.231" N	80° 2' 37.938" W	574003.60	13.18	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	5/17/2017	Unlikely	None Needed	N/A		0
276-01	37° 16' 1.944" N	80° 2' 16.716" W	144146.26	3.31	Roanoke River	Roanoke River (RU09)	Yes	Benthic, Bacteria, PCBs	Sediment, E-Coli, PCB	5/17/2017	Unlikely	None Needed	N/A		0
276-04	37° 15' 58.065" N	80° 2' 27.219" W	405681.61	9.31	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	5/17/2017	Unlikely	None Needed	N/A		0
278-09	37° 15' 57.027" N	80° 1' 49.207" W	151731.79	3.48	Roanoke River	Roanoke River (RU09)	Yes	Benthic, Bacteria, PCBs	Sediment, E-Coli, PCB	5/17/2017	Unlikely	None Needed	N/A		0
278-10	37° 15' 57.071" N	80° 1' 49.090" W	142860.43	3.28	Roanoke River	Roanoke River (RU09)	Yes	Benthic, Bacteria, PCBs	Sediment, E-Coli, PCB	5/17/2017	Potential	Reinspect when very dry	TBD	Trickle flow, likely storm (slow drain	0
277-01	37° 16' 2.790" N	80° 1' 59.615" W	326299.17	7.49	Roanoke River	Roanoke River (RU09)	Yes	Benthic, Bacteria, PCBs	Sediment, E-Coli, PCB	10/24/2012	Unlikely	None Needed	N/A		0
277-02	37° 16' 4.220" N	80° 2' 5.302" W	126357.53	2.90	Roanoke River	Roanoke River (RU09)	Yes	Benthic, Bacteria, PCBs	Sediment, E-Coli, PCB	10/24/2012	Unlikely	None Needed	N/A		0
277-03	37° 15' 59.775" N	80° 1' 57.491" W	2708157.84	62.17	Roanoke River	Roanoke River (RU09)	Yes	Benthic, Bacteria, PCBs	Sediment, E-Coli, PCB	10/29/2013	Unlikely	None Needed	N/A		0
277-07	37° 16' 1.204" N	80° 2' 9.618" W	145447.27	3.34	Roanoke River	Roanoke River (RU09)	Yes	Benthic, Bacteria, PCBs	Sediment, E-Coli, PCB	4/11/2014	Unlikely	None Needed	N/A		0
277-09	37° 16' 1.158" N	80° 2' 6.381" W	67001.48	1.54	Roanoke River	Roanoke River (RU09)	Yes	Benthic, Bacteria, PCBs	Sediment, E-Coli, PCB	4/11/2014	Unlikely	None Needed	N/A		0
277-10	37° 16' 0.173" N	80° 2' 4.573" W	81773.71	1.88	Roanoke River	Roanoke River (RU09)	Yes	Benthic, Bacteria, PCBs	Sediment, E-Coli, PCB	4/11/2014	Unlikely	None Needed	N/A		0
278-01	37° 15' 59.791" N	80° 1' 54.678" W	136309.18	3.13	Roanoke River	Roanoke River (RU09)	Yes	Benthic, Bacteria, PCBs	Sediment, E-Coli, PCB	10/23/2012	Unlikely	None Needed	N/A		0
278-02	37° 15' 59.179" N	80° 1' 53.100" W	112237.51	2.58	Roanoke River	Roanoke River (RU09)	Yes	Benthic, Bacteria, PCBs	Sediment, E-Coli, PCB	10/23/2012	Unlikely	None Needed	N/A		0
278-03	37° 15' 59.624" N	80° 1' 48.238" W	438163.03	10.06	Roanoke River	Roanoke River (RU09)	Yes	Benthic, Bacteria, PCBs	Sediment, E-Coli, PCB	10/23/2012	Unlikely	None Needed	N/A		0
278-04	37° 15' 59.316" N	80° 1' 41.898" W	342188.61	7.86	Roanoke River	Roanoke River (RU09)	Yes	Benthic, Bacteria, PCBs	Sediment, E-Coli, PCB	10/23/2012	Unlikely	None Needed	N/A		0
278-05	37° 16' 1.490" N	80° 1' 38.484" W	37424.90	0.86	Roanoke River	Roanoke River (RU09)	Yes	Benthic, Bacteria, PCBs	Sediment, E-Coli, PCB	10/23/2012	Unlikely	None Needed	N/A	plastic	0
279-02	37° 16' 2.504" N	80° 1' 32.478" W	137303.21	3.15	Roanoke River	Roanoke River (RU09)	Yes	Benthic, Bacteria, PCBs	Sediment, E-Coli, PCB	10/23/2012	Unlikely	None Needed	N/A		0
279-03	37° 16' 1.309" N	80° 1' 32.325" W	566240.47	13.00	Roanoke River	Roanoke River (RU09)	Yes	Benthic, Bacteria, PCBs	Sediment, E-Coli, PCB	10/23/2012	Unlikely	None Needed	N/A		0
279-04	37° 16' 3.846" N	80° 1' 35.202" W	104094.93	2.39	Roanoke River	Roanoke River (RU09)	Yes	Benthic, Bacteria, PCBs	Sediment, E-Coli, PCB	10/23/2012	Unlikely	None Needed	N/A		0
279-07	37° 15' 56.679" N	80° 1' 35.586" W	458752.78	10.53	Roanoke River	Roanoke River (RU09)	Yes	Benthic, Bacteria, PCBs	Sediment, E-Coli, PCB	10/29/2013	Unlikely	None Needed	N/A		0
279-10	37° 16' 3.668" N	80° 1' 36.483" W	85163.08	1.96	Roanoke River	Roanoke River (RU09)	Yes	Benthic, Bacteria, PCBs	Sediment, E-Coli, PCB	10/23/2012	Unlikely	None Needed	N/A		0
280-02	37° 16' 4.737" N	80° 1' 4.787" W	467525.84	10.73	Roanoke River	Roanoke River (RU09)	Yes	Benthic, Bacteria, PCBs	Sediment, E-Coli, PCB	10/23/2012	Unlikely	None Needed	N/A		0
280-05	37° 16' 1.148" N	80° 1' 7.746" W	152314.38	3.50	Roanoke River	Roanoke River (RU09)	Yes	Benthic, Bacteria, PCBs	Sediment, E-Coli, PCB		Unlikely	None Needed	N/A		0
280-06	37° 15' 57.100" N	80° 1' 8.073" W	306950.19	7.05	Roanoke River	Roanoke River (RU09)	Yes	Benthic, Bacteria, PCBs	Sediment, E-Coli, PCB	10/23/2012	Unlikely	None Needed	N/A		0
280-07	37° 15' 56.939" N	80° 1' 8.025" W	216239.26	4.96	Roanoke River	Roanoke River (RU09)	Yes	Benthic, Bacteria, PCBs	Sediment, E-Coli, PCB	10/23/2012	Unlikely	None Needed	N/A		0
282-01	37° 15' 56.407" N	80° 1' 35.153" W	185523.08	4.26	Roanoke River	Roanoke River (RU09)	Yes	Benthic, Bacteria, PCBs	Sediment, E-Coli, PCB	10/29/2013	Unlikely	None Needed	N/A		0
283-01	37° 15' 54.989" N	80° 1' 42.514" W	1442098.34	33.11	Roanoke River	Roanoke River (RU09)	Yes	Benthic, Bacteria, PCBs	Sediment, E-Coli, PCB	10/29/2013	Unlikely	None Needed	N/A		0
283-02	37° 15' 55.129" N	80° 1' 48.725" W	596129.10	13.69	Roanoke River	Roanoke River (RU09)	Yes	Benthic, Bacteria, PCBs	Sediment, E-Coli, PCB		Unlikely	None Needed	N/A		0
287-03	37° 15' 50.149" N	80° 3' 0.803" W	3191123.86	73.26	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	5/17/2017	Unlikely	None Needed	N/A	2 24 CMP	0
290-01	37° 15' 48.209" N	80° 3' 52.630" W	157585.96	3.62	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	5/25/2016	Unlikely	None Needed	N/A		0
290-02	37° 15' 48.227" N	80° 3' 52.660" W	239564.03	5.50	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	5/25/2016	Unlikely	None Needed	N/A		0
290-04	37° 15' 47.238" N	80° 3' 53.787" W	295876.31	6.79	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	5/25/2016	Unlikely	None Needed	N/A		0
290-08	37° 15' 45.536" N	80° 3' 54.783" W	221969.59	5.10	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	5/19/2017	Potential	None Needed	Complete	Natural spring seepage, iron rich	0
296-02	37° 15' 41.535" N	80° 3' 53.694" W	235936.34	5.42	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB		Unlikely	None Needed	N/A		0
299-01	37° 15' 43.819" N	80° 2' 55.550" W	249080.30	5.72	Tributary to Roanoke River	Roanoke River (RU09)	Not Assessed	Not Assessed	Sediment, E-Coli, PCB	5/19/2017	Unlikely	None Needed	N/A		0

Appendix C – IDDE Follow-up Information

IDDE Tracker						
Findings				**Follow-up**		
Date	Location	Issue	Reported by:	Date	Action	Resolved
8/22/2017	1215 W Main St (K&W Cafeteria)	Cooking oil spill	Fire Marshall	9/7/2018	WEL cleaned up, K&W educated employees and improved grease trap system	Yes
1/24/2018	1830 Tucker Lane	Sewer lateral leak	Salem Water & Sewer Department	18-May	Homeowner hired contractor to repair, had to get permission from adjacent property owner first, lawyers hired b/c no easement found. Finally resolved in May, 2018	Yes
5/18/2018	Conehurst Blvd	Motor oil spill (found in leaves that were blocking storm drain)	Salem Streets Department	5/18/2018	Streets Department put down filter socks when spill was found, disposed of leaves, dug out channel and disposed of contaminated soil as well	Yes
6/8/2018	1340 W Main St (Sheetz)	Car wash overflow	Salem GIS Department	6/29/2018	Soapy water was flowing into the storm drain, Sheetz cleaned the sediment out of their car wash drain and problem was solved	Yes
6/21/2018	813 W Main St (Burger King)	Pressure washing with chemicals	Public	6/21/2018	Contractor (not local) was pressure washing sidewalk and parking lot with chemicals and not containing/filtering runoff, they stopped immediately when confronted, started using filter and stopped using chemicals	Yes

Appendix D – ESC/SWM land Disturbance Activity Database

ESC/SWM Additional Data for all sites subject to ESC Ordinance (Exceeding 5,000 SF): Reporting period from July 1, 2017 - June 30, 2018

Project	Construction Start Date	Construction End Date	Disturbed Area (AC)	ESC Plan Approved?	SWM Plan Approved?	# of Inspections	# of Enforcements	VSMP Permit Obtained	SWPPP on site?	SWM BMP included?	SWM BMP inspection/ maintenance plan?	SWM BMP recorded maintenance agreement?	# of Illicit discharges	# of Public complaints
Aztec Rental	March, 2017	September 22, 2017	0.90	Yes	Yes	6	-	-	-	Yes	Yes	Yes	-	-
Blue Ridge Health & Wellness	May, 2018	-	1.64	Yes	Yes	4	4	Yes	Yes	-	-	-	-	-
Chestnut Manor	July, 2017	-	0.90	Yes	Yes	23	3	-	-	Yes	Yes	Yes	-	-
Cliffview	February, 2015	-	6.20	Yes	Yes	44	25	Yes	Yes	-	-	-	-	-
Craig Ave Subdivision	August, 2016	May 9, 2017	0.80	Yes	Yes	-	-	-	-	Yes	Yes	Yes	-	-
El Rodeo	July, 2017	-	1.31	Yes	Yes	23	2	Yes	Yes	Yes	Yes	Yes	-	-
East Salem Elementary School	May, 2018	-	2.58	Yes	Yes	6	3	Yes	Yes	Yes	-	-	-	-
Fairfield Inn	January, 2016	December 12, 2017	3.20	Yes	Yes	11	1	Yes	Yes	Yes	Yes	No	-	-
Heritage Downs	June, 2014	-	7.64	Yes	Yes	37	19	Yes	Yes	Yes	Yes	Yes	-	-
Mount Regis	March, 2016	September 13, 2017	5.87	Yes	Yes	5	0	Yes	Yes	Yes	Yes	No	-	-
Mowles Spring Park	-	-	5.60	Yes	Yes	29	12	Yes	Yes	Yes	Yes	No	-	-
Roanoke College: Cregger Center	May, 2014	June 15, 2017	13.50	Yes	Yes	-	-	Yes	Yes	Yes	Yes	No	-	-
Roanoke College: Elizabeth Campus	May, 2014	June 15, 2017	2.50	Yes	Yes	-	-	Yes	Yes	-	-	-	-	-
Rotary Park	May, 2016	January 22, 2018	1.10	Yes	Yes	13	-	Yes	Yes	Yes	Yes	No	-	-
Salem Montessori	March, 2016	August 23, 2017	1.58	Yes	Yes	4	-	Yes	Yes	Yes	Yes	Yes	-	-
Village at North Mill	June, 2014	-	27.60	Yes	Yes	33	18	Yes	Yes	Yes	Yes	Yes	-	-
Virginia Varsity	October, 2017	-	0.90	Yes	Yes	15	1	-	-	-	-	-	-	-
Waffle House	October, 2017	March 22, 2018	0.51	Yes	Yes	11	-	-	-	-	-	-	-	-
West Main Auto Spa	July, 2017	April 10, 2018	0.93	Yes	Yes	17	-	-	-	Yes	Yes	Yes	-	-
2720 W Main St	January, 2016	May 1, 2018	0.46	Yes	Yes	19	-	-	-	Yes	Yes	Yes	-	-

Project that is new for the current reporting period

Appendix E – SWM Facility Tracking Database

(Electronic Database Provided as Enclosure)

City of Salem - Stormwater Facility Inventory

Facility ID	Latitude	Longitude	Location Description	Type of Facility	Total Drainage (Acres)	Pervious Area (Acres)	Impervious Area (Acres)	Date Built (MM/YYYY)	HUC6	Receiving Water	2010 303(d)/305(b) Impairment(s)	Publically or Privately Owned?	Inspection Schedule	Maintenace Agreement Exists?	Courthouse Instrument Number	Date of Last Inspection	Notes & Necessary Maintenance Resulting from Inspection	Necessary Maintenance Schedule	Active
1	37.296961	-80.037605	East Main - Rod Shop	Detention	0.945	0.215	0.730	1995 -1996	RU10	Mason Creek	Benthic, E. coli	Private	Annually	No	N/A	6/8/2018			Y
2	37.302011	-80.068385	Academy St. - Emerald Hills	Detention	8.490	3.390	5.100	pre 1998	RU09	Roanoke River	Benthic, E. coli, Temperature, PCBs	Private	Annually	No	N/A	6/6/2018			Y
3	37.306188	-80.073866	Wildwood Rd - Wildwood Forest	Detention	6.240	3.750	2.490	pre 1998	RU09	Roanoke River	Benthic, E. coli, Temperature, PCBs	Private	Annually	No	N/A	6/6/2018			Y
4	37.297729	-80.075129	West Carrollton - The Hill	Detention	22.830	10.300	12.530	pre 1998	RU09	Roanoke River	Benthic, E. coli, Temperature, PCBs	Private	Annually	No	N/A	6/6/2018			Y
5	37.272538	-80.047836	Apperson Dr - city pond	Detention	12.100	9.650	2.450	pre 1998	RU09	Roanoke River	Benthic, E. coli, Temperature, PCBs	Public	Annually	No	N/A	6/22/2018	None	N/A	Y
6	37.272305	-80.048372	Yorkshire St - city pond	Detention	14.360	5.580	8.780	pre 1998	RU09	Roanoke River	Benthic, E. coli, Temperature, PCBs	Public	Annually	No	N/A	6/22/2018	None	N/A	Y
7	37.268009	-80.047774	Diamond Rd/Baier Dr - Homplace	Detention	115.660	37.160	78.500	pre 1998	RU09	Roanoke River	Benthic, E. coli, Temperature, PCBs	Private	Annually	No	N/A	6/8/2018			Y
8	37.263879	-80.050504	Forest Dr - Orchard Heights/Hidden Valley Forest	Detention	10.330	3.630	6.700	06/1985	RU09	Roanoke River	Benthic, E. coli, Temperature, PCBs	Public	Annually	No	N/A	6/28/2018	Inlet pipe replacement, establish vegetation, add rip rap	ASAP (2018-2019 FY)	Y
10	37.267926	-80.018468	Apperson Dr - Varsity Storage	Detention	29.600	11.240	18.360	06/2006	RU14	Roanoke River	Benthic, E. coli, Temperature, PCBs	Private	Annually	No	N/A	8/30/2018			Y
11	37.273721	-80.07125	Meadowrun Ct - Meadowrun/Olde Salem Estates	Detention	88.400	41.300	47.100	pre 1998	RU09	Roanoke River	Benthic, E. coli, Temperature, PCBs	Private	Annually	No	N/A	6/8/2018			Y
12	37.301723	-80.04784	Poage Ln - city pond	Detention	19.670	6.450	13.220	pre 1998	RU09	Roanoke River	Benthic, E. coli, Temperature, PCBs	Public	Annually	No	N/A	6/22/2018	None	N/A	Y
13	37.311581	-80.056144	High St - Emerson Pond Estates- pond 1	Detention	8.700	3.170	5.530	pre 1998	RU09	Roanoke River	Benthic, E. coli, Temperature, PCBs	Private	Annually	No	N/A	6/6/2018			Y
14	37.307934	-80.053271	North Ridge Cr - North Ridge	Detention	3.050	1.260	1.790	06/2006	RU09	Roanoke River	Benthic, E. coli, Temperature, PCBs	Private	Annually	No	N/A	6/6/2018			Y
15	37.310959	-80.053366	Bird Ln - Covenant Comm Church	Detention	12.720	5.780	6.940	pre 1998	RU10	Mason Creek	Benthic, E. coli	Private	TBD	No	N/A	TBD			Y
16	37.306864	-80.038835	North Woods Ct - North Mill	Detention	9.300	4.720	4.580	06/1994	RU10	Mason Creek	Benthic, E. coli	Private	Annually	Yes	DB 187 PG 796	6/6/2018			Y
17	37.308153	-80.033654	North Mill Rd - Kesler Mill Place	Detention	20.200	8.250	11.950	06/1995	RU10	Mason Creek	Benthic, E. coli	Private	Annually	No	N/A	6/6/2018			Y
19	37.318379	-80.03239	971 Russell Dr - Shelton Witt	Detention	7.710	2.510	5.200	1999 - 2000	RU10	Mason Creek	Benthic, E. coli	Private	TBD	No	N/A	6/28/2018	Easement		Y
20	37.31392	-80.028156	901 Russell Dr - M & V Assoc	Detention	2.400	0.850	1.550	pre 1998	RU10	Mason Creek	Benthic, E. coli	Private	Annually	No	N/A	6/28/2018			Y
21	37.316479	-80.029907	951 Russell Dr - SPH Corp	Detention	2.190	1.860	0.330	pre 1998	RU10	Mason Creek	Benthic, E. coli	Private	TBD	No	N/A	6/28/2018	Easement		Y
22	37.290495	-80.023319	Salem Commons Ln - Salem Commons Apts	Detention	7.100	2.150	4.950	pre 1998	RU10	Mason Creek	Benthic, E. coli	Private	Annually	No	N/A	6/8/2018			Y
23	37.281745	-80.037325	Roanoke Blvd/Turner St - Summerfield - u/g storage tank	Detention	5.730	1.880	3.850	06/2001	RU10	Mason Creek	Benthic, E. coli	Private	TBD	No	N/A	TBD			Y
24	37.293361	-80.029078	307 Electric Rd - Northern Hydraulics	Detention	10.700	3.600	7.100	pre 1998	RU10	Mason Creek	Benthic, E. coli	Private	Annually	No	N/A	6/8/2018			Y
25	37.279394	-80.0148	2383 Roanoke Blvd - DAV Store	Infiltration	1.300	0.420	0.880	pre 1998	RU10	Mason Creek	Benthic, E. coli	Private	Annually	No	N/A	6/8/2018			Y
26	37.277348	-80.020556	2000 Roanoke Blvd - @ Reavis Lane	Detention	4.090	0.880	3.210	1998 - 2002	RU10	Mason Creek	Benthic, E. coli	Private	Annually	No	N/A	6/8/2018			Y
27	37.267014	-80.070794	Mowles Spring Park	Detention	80.000	76.000	4.000	06/1994	RU09	Roanoke River	Benthic, E. coli, Temperature, PCBs	Public	Annually	No	N/A	6/13/2018	None	N/A	Y
28	37.28126	-80.074643	Kings Arms Dr - Victoria Estates sump	Other	8.970	3.770	5.200	pre 1998	RU09	Roanoke River	Benthic, E. coli, Temperature, PCBs	Private	TBD	No	N/A	TBD			Y
29	37.283645	-80.078826	1340 Southside Dr - Stripe-A-Lot site	Detention	2.300	0.870	1.430	1998 - 2002	RU09	Roanoke River	Benthic, E. coli, Temperature, PCBs	Private	Annually	No	N/A	6/8/2018			Y
30	37.285525	-80.078863	1351 Southside Dr - Blue Ridge Imaging - pond 1	Detention	1.430	0.540	0.890	06/2002	RU09	Roanoke River	Benthic, E. coli, Temperature, PCBs	Private	Annually	No	N/A	6/8/2018			Y
31	37.285641	-80.078623	1351 Southside Dr - Blue Ridge Imaging - pond 2	Detention	1.580	0.630	0.950	06/2002	RU09	Roanoke River	Benthic, E. coli, Temperature, PCBs	Private	Annually	No	N/A	6/8/2018			Y
32	37.28725	-80.081706	Mill Race Dr - Commonwealth Builders	Detention	5.140	1.880	3.260	1998 - 2002	RU09	Roanoke River	Benthic, E. coli, Temperature, PCBs	Private	Annually	No	N/A	6/8/2018			Y
34	37.291018	-80.087816	Turner Rd/1801 Epps Dr - Grape Vine Estates	Detention	4.700	1.610	3.090	pre 1998	RU09	Roanoke River	Benthic, E. coli, Temperature, PCBs	Private	Annually	No	N/A	6/6/2018			Y
35	37.29114	-80.090047	Harrogate Dr / Murrell Ave - Harrogate	Detention	7.230	1.440	5.790	pre 1998	RU09	Roanoke River	Benthic, E. coli, Temperature, PCBs	Private	TBD	No	N/A	TBD			Y
36	37.28241	-80.11061	Butt Hollow Rd - Cline Electric	Detention	1.130	0.280	0.850	06/2001	RU09	Roanoke River	Benthic, E. coli, Temperature, PCBs	Private	Annually	No	N/A	6/6/2018			Y
37	37.293427	-80.086355	1600 Narcissus St - West Salem Baptist Church	Detention	9.040	3.640	5.400	06/1997	RU09	Roanoke River	Benthic, E. coli, Temperature, PCBs	Private	Annually	No	N/A	6/6/2018			Y
38	37.297806	-80.081194	Salem High School / Brushy Mountain	Detention	192.000	134.000	58.000	1998 - 2002	RU09	Roanoke River	Benthic, E. coli, Temperature, PCBs	Public	Annually	No	N/A	6/29/2017	Remove any large trees from embankment and seed/straw necessary areas on far side slope	2017-2018 reporting year	Y
39	37.294418	-80.091763	1887 Woodmere Ct - Woodmere	Detention	4.400	1.650	2.750	06/1995	RU09	Roanoke River	Benthic, E. coli, Temperature, PCBs	Private	TBD	No	N/A	TBD			Y
40	37.299119	-80.070742	Highfield Rd - The Lawn	Detention	19.720	11.700	8.020	pre 1998	RU09	Roanoke River	Benthic, E. coli, Temperature, PCBs	Private	Annually	No	N/A	10/16/2015	None		Y
41	37.274704	-80.080483	1445 Deacon St - Woodshill	Detention	5.930	1.650	4.280	06/1996	RU09	Roanoke River	Benthic, E. coli, Temperature, PCBs	Private	TBD	No	N/A	TBD			Y
42	37.28716	-80.064824	425 West 4th St - Cuz's Auto Body	Detention	0.930	0.250	0.680	06/2000	RU09	Roanoke River	Benthic, E. coli, Temperature, PCBs	Private	Annually	No	N/A	6/8/2018			Y
43	37.313015	-80.044798	Evergreen Ct - Salem Woods	Detention	22.450	8.870	13.580	06/1995	RU10	Mason Creek	Benthic, E. coli	Private	Annually	No	N/A	6/28/2018	Easement		Y
44	37.30503	-80.027567	Electric Road @ Green Ridge Rd	Detention	2.130	1.600	0.530	1998 - 2002	RU10	Mason Creek	Benthic, E. coli	Public	Annually	No	N/A	6/8/2018	None	N/A	Y
45	37.31237	-80.057971	High St - Emerson Pond Estates - pond 2	Detention	5.300	3.870	1.430	06/2008	RU09	Roanoke River	Benthic, E. coli, Temperature, PCBs	Private	TBD	No	N/A	TBD			Y
46	37.316059	-80.046744	Polar Ln - Booker	Detention	5.720	1.620	4.100	06/2000	RU10	Mason Creek	Benthic, E. coli	Private	Annually	No	N/A	6/28/2018			Y
47	37.310863	-80.029173	800 Dalewood Ave - Olde Mill Estates (Alta Cr)	Detention	3.890	1.590	2.300	pre 1998	RU10	Mason Creek	Benthic, E. coli	Private	Annually	No	N/A	6/6/2018			Y
48	37.277904	-80.066039	736 Palmer Ave - Kimball Heights	Detention	9.260	2.760	6.500	pre 1998	RU09	Roanoke River	Benthic, E. coli, Temperature, PCBs	Private	Annually	No	N/A	6/8/2018			Y
49	37.262472	-80.027443	Lewis Gale Hospital - east parking lot	Detention	2.600	0.390	2.210	pre 1998	RU09	Roanoke River	Benthic, E. coli, Temperature, PCBs	Private	Annually	No	N/A	6/8/2018			Y
50	37.271319	-80.032192	1865 Dillard Dr - Thunder Valley/Valley Printers	Detention	0.550	0.140	0.410	06/2003	RU10	Mason Creek	Benthic, E. coli	Private	TBD	No	N/A	TBD			Y
51	37.270938	-80.030166	1871 Dillard Dr - Lighting Galleries	Detention	0.550	0.720	0.980	06/1995	RU10	Mason Creek	Benthic, E. coli	Private	Annually	No	N/A	6/8/2018			Y
52	37.267693	-80.030728	Apperson Dr - Valley Commons Shopping Center	Detention	1.700	2.010	3.790	1998 - 2002	RU09	Roanoke River	Benthic, E. coli, Temperature, PCBs	Private	Annually	No	N/A	6/8/2018			Y
53	37.266874	-80.036152	Oak Ridge Ln - Northwoods Sec 4 - u/g storage tank	Other	2.890	1.310	1.580	1998 - 2002	RU09	Roanoke River	Benthic, E. coli, Temperature, PCBs	Private	TBD	No	N/A	TBD			Y
54	37.317383	-80.04539	Northern Tr - Rivendell	Detention	9.700	2.340	7.360	06/2007	RU10	Mason Creek	Benthic, E. coli	Private	Annually	Yes	# 080000507	9/23/2015			Y
55	37.289654	-80.036173	Texas St - East Pond (One Beacon)	Detention	27.500	8.300	19.200	06/2005	RU10	Mason Creek	Benthic, E. coli	Public	Annually	No	N/A	6/22/2018	None	N/A	Y
56	37.298949	-80.046054	Harrison Avenue Parking	Detention	4.300	0.460	3.840	06/2011	RU10	Mason Creek	Benthic, E. coli	Private	Annually	Yes	# 110001029	TBD			Y
57	37.281803	-80.109244	2821 West Main Street Primatives Front	Detention	0.327	0.037	0.290	06/2012	RU09	Roanoke River	Benthic, E. coli, Temperature, PCBs	Private	Annually	Yes	# 110000839	TBD			Y
58	37.282435	-80.109171	2821 West Main Street Primatives Back	Detention	0.240	0.060	0.180	06/2012	RU09	Roanoke River	Benthic, E. coli, Temperature, PCBs	Private	Annually	Yes	# 110000839	TBD			Y
59	37.30025	-80.057283	Roanoke College Hawthorn Lot Pond 1	BioRetention	2.290	0.730	1.560	06/2012	RU09	Roanoke River	Benthic, E. coli, Temperature, PCBs	Private	Annually	Yes	# 100002272	TBD			Y
60	37.300946	-80.056356	Roanoke College Hawthorn Lot Pond 2	BioRetention	0.730	0.280	0.450	06/2012	RU09	Roanoke River	Benthic, E. coli, Temperature, PCBs	Private	Annually	Yes	Duplicate	TBD			Y
61	37.27835	-80.084039	South Salem Elem. School - Carolyn Rd. pond 1	Detention	43.230	13.650	29.580	06/2013	RU09	Roanoke River	Benthic, E. coli, Temperature, PCBs	Public	Annually	No	N/A	6/29/2018	Consider adding riprap to inlet area, some channelization developing in bottom of pond	2018-2019 FY	Y
62	37.278538	-80.082979	South Salem Elem. School - Carolyn Rd. pond 2	ed Swale (w/ check	2.350	1.610	0.740	06/2013	RU09	Roanoke River	Benthic, E. coli, Temperature, PCBs	Public	Annually	No	N/A	6/29/2018	None	N/A	Y
63	37.277102	-80.082753	South Salem Elem. School - Carolyn Rd. pond 3	BioRetention	7.240	4.790	2.450	06/2013	RU09	Roanoke River	Benthic, E. coli, Temperature, PCBs	Public	Annually	No	N/A	6/29/2018	None	N/A	Y
64	37.263124	-80.065203	Phillips Brook storm pond	Detention	8.560	3.260	5.300	06/2009	RU09	Roanoke River	Benthic, E. coli, Temperature, PCBs	Private	Annually	No	N/A	6/18/2018	Phillips Brook HOA / Lewis Armistead (treasurer) 540-320-5170 louie		Y
65	37.318008	-80.035505	1100 Kesler Mill - Kesslerwood Townhomes	Detention	2.010	0.480	0.640	06/2012	RU10	Mason Creek	Benthic, E. coli	Private	Annually	Yes	# 120003019	TBD			Y
66	37.281765	-80.109784	2839 West Main Street - Family Dollar	Retention	0.610	0.280	0.330	06/2013	RU09	Roanoke River	Benthic, E. coli, Temperature, PCBs	Private	Annually	Yes	# 130001974	TBD			Y
67	37.288701	-80.084438	1618 W Main St - HNRGI Dental Office	Infiltration	0.750	0.350	0.400	06/2011	RU09	Roanoke River	Benthic, E. coli, Temperature, PCBs	Private	Annually	Yes	# 090000958	3/25/2016			Y
68	37.286028	-80.059299	101 W 4th St - Invision Eye Care Area 1	Infiltration	0.560	0.360	0.200	06/2011	RU09	Roanoke River	Benthic, E. coli, Temperature, PCBs	Private	Annually	Yes	# 090000374	4/22/2016			Y
69	37.285989	-80.059868	101 W 4th St - Invision Eye Care Area 2	Infiltration	0.280	0.170	0.110	06/2011	RU09	Roanoke River	Benthic, E. coli, Temperature, PCBs	Private	Annually	Yes	Duplicate	4/22/2016			Y
70	37.320384	-80.033301	119 Sheraton Dr - Creative Family Soultions	Detention	0.470	0.150	0.320	06/2012	RU10	Mason Creek	Benthic, E. coli	Private	Annually	Yes	# 110001951	TBD			Y
71	37.280817	-80.106825	2720 W Main St - David Brown Property	Detention	0.470	0.150	0.320	TBD	RU10	Mason Creek	Benthic, E. coli	Private	Annually	Yes	# 110000235	TBD			Y
72	37.297914	-80.041122	Carey Ave Subdivision Pond	Detention	3.360	1.160	2.200	06/2012	RU10	Mason Creek	Benthic, E. coli	Private	Annually	Yes	N/A	TBD			Y
73	37.297072	-80.041698	108 Carey Avenue	Infiltration	0.090	0.020	0.070	06/2010	RU10	Mason Creek	Benthic, E. coli	Private	Annually	Yes	# 100000813	TBD			Y
74	37.29728	-80.041706	110 Carey Avenue	Infiltration	0.180	0.080	0.100	06/2011	RU10	Mason Creek	Benthic, E. coli	Private	Annually	Yes	# 100000814	TBD			Y
76	37.293171	-80.053096	407 E Calhoun St - Mac & Bob's Parking	BioRetention	0.130	0.050	0.080	06/2005	RU09	Roanoke River	Benthic, E. coli, Temperature, PCBs	Private*	Annually	Yes	# 090002997	9/25/2015			Y
77	37.292139	-80.060941	112 W Main St - Salem VA Medical Credit Union	Other	0.805	0.225	0.580	06/2012	RU09	Roanoke River	Benthic, E. coli, Temperature, PCBs	Private	Annually	Yes	# 090002821	4/21/2015			Y
78	37.285698	-80.078393	1331 Southside Dr - DQ Properties	Retention Basin	1.331	0.381	0.950	06/2010	RU09	Roanoke River	Benthic, E. coli, Temperature, PCBs	Private	Annually	Yes	# 090002822	4/6/2016			Y
79	37.289639	-80.058658	309 S Broad St - Salem 1st Baptist Parking Lot (226 S Broad	Infiltration	1.130	0.250	0.880	06/2010	RU09	Roanoke River	Benthic, E. coli, Temperature, PCBs	Private	Annually	Yes	# 090002111	6/16/2016			Y
80	37.272069	-80.041787	904 Apperson Dr - Blue and Gold Area 1	Detention	0.490	0.160	0.330	06/2010	RU09	Roanoke River	Benthic, E. coli, Temperature, PCBs	Private	Annually	Yes	# 090000375	4/21/2016			Y
81	37.271985	-80.041298	912 Apperson Dr - Blue and Gold Area 2	Detention	0.290	0.100	0.190	06/2010	RU09	Roanoke River	Benthic, E. coli, Temperature, PCBs	Private	Annually	Yes	Duplicate	4/21/2016			Y

Facility ID	Latitude	Longitude	Location Description	Type of Facility	Total Drainage (Acres)	Pervious Area (Acres)	Impervious Area (Acres)	Date Built (MM/YYYY)	HUC6	Receiving Water	2010 303(d)/305(b) Impairment(s)	Publically or Privately Owned?	Inspection Schedule	Maintenace Agreement Exists?	Courthouse Instrument Number	Date of Last Inspection	Notes & Necessary Maintenance Resulting from Inspection	Necessary Maintenance Schedule	Active
82	37.287389	-80.071757	840 W Main St - Lowes	Detention	22.680	8.420	14.260	06/2010	RU09	Roanoke River	Benthic, E. coli, Temperature, PCBs	Private	Annually	Yes	# 080003663	9/23/2015			Y
83	37.300657	-80.0297	Ross Street Townhomes	Detention	0.780	0.280	0.500	06/2010	RU10	Mason Creek	Benthic, E. coli	Private	Annually	Yes	# 080002555	9/4/2015			Y
84	37.279136	-80.015156	2321 Roanoke Boulevard - Adult Day Care	Infiltration	2.200	0.600	1.600	06/2008	RU10	Mason Creek	Benthic, E. coli	Private	Annually	Yes	# 080002210	8/3/2015			Y
85	37.269718	-80.035143	Cliff View Townhomes	Detention	4.300	0.740	3.560	06/2010	RU09	Roanoke River	Benthic, E. coli, Temperature, PCBs	Private	Annually	Yes	# 080001890	TBD			Y
86	37.294998	-80.047543	801 E Main St - Salem Museum	Detention	0.460	0.240	0.220	06/2008	RU09	Roanoke River	Benthic, E. coli, Temperature, PCBs	Private	Annually	Yes	# 080001760	5/29/2015			Y
87	37.304965	-80.063797	1001 Mt Vernon Ln - Hopetree Baptist Home	Detention	9.000	4.700	4.300	06/2010	RU09	Roanoke River	Benthic, E. coli, Temperature, PCBs	Private	Annually	Yes	# 080001638	5/20/2015			Y
88	37.284861	-80.090641	m Frame/Rowe Furniture - Salem Industrial Drive (1950/1	Detention	1.230	0.580	0.650	06/2009	RU09	Roanoke River	Benthic, E. coli, Temperature, PCBs	Private	Annually	Yes	# 080001435	6/6/2016			Y
89	37.282498	-80.107888	Keesling Court Townhomes	Detention	0.530	0.130	0.400	06/2010	RU09	Roanoke River	Benthic, E. coli, Temperature, PCBs	Private	Annually	Yes	# 080000820	4/15/2015			Y
90	37.287444	-80.042679	Texas St - West Pond	Detention	39.400	26.300	13.100	pre 1998	RU10	Mason Creek	Benthic, E. coli	Public	Annually	No	N/A	6/22/2018	None	N/A	Y
91	37.265426	-80.064381	Heritage Downs Pond 2 (Front)	Detention	3.630	3.280	0.350	06/2014	RU09	Roanoke River	Benthic, E. coli, Temperature, PCBs	Private	Annually	Pending	TBD	TBD			Y
92	37.26656	-80.067219	Heritage Downs Pond 1 (Rear)	Detention	5.150	4.640	0.510	06/2014	RU09	Roanoke River	Benthic, E. coli, Temperature, PCBs	Private	Annually	Pending	TBD	TBD			Y
93	37.291258	-80.087086	Missile Baits - 170 Turner Road	Infiltration Basin	0.997	0.337	0.660	12/2015	RU09	Roanoke River	Benthic, E. coli, Temperature, PCBs	Private	Annually	Yes	# 150001106	TBD			Y
94	37.290156	-80.084529	HomestayInn/Salon - 29 Poplar Ave	Infiltration Basin	0.620	0.450	0.170	06/2016	RU09	Roanoke River	Benthic, E. coli, Temperature, PCBs	Private	Annually	No	N/A	TBD			Y
95	37.319257	-80.03228	997 Russell Dr - (Holiday Inn Express)	Detention	2.600	0.850	1.750	06/2008	RU10	Mason Creek	Benthic, E. coli	Private	Annually	Yes	# 080000506	12/11/2015			Y
96	37.274531	-80.055164	6 Front Avenue - Bethel Baptist Church	Infiltration	0.430	0.140	0.290	12/2016	RU09	Roanoke River	Benthic, E. coli, Temperature, PCBs	Private	Annually	Yes	# 150002010	TBD			Y
97	37.282956	-80.104136	2537 W Main St - Salem Specialities	Infiltration	1.166	0.848	0.318	06/2016	RU09	Roanoke River	Benthic, E. coli, Temperature, PCBs	Private	Annually	Yes	# 160000945	TBD			Y
98	37.290072	-80.036892	vd - Salem Montessori School - Sand Filter w/ pre-treatme	Other	1.080	0.390	0.690	08/2017	RU10	Mason Creek	Benthic, E. coli	Private	Annually	Yes	# 160000946	TBD			Y
99	37.309211	-80.038241	Village at North Mill - Pond 1	Detention	7.600	2.650	4.950	TBD	RU10	Mason Creek	Benthic, E. coli	Private	Annually	Yes	# 150002786	TBD			P
100	37.310946	-80.036146	Village at North Mill - Pond 2	Detention	6.400	2.250	4.150	TBD	RU10	Mason Creek	Benthic, E. coli	Private	Annually	Yes	Duplicate	TBD			P
101	37.305433	-80.046993	Craig Avenue Subdivision	Detention	4.490	4.060	0.430	05/2017	RU10	Mason Creek	Benthic, E. coli	Private	Annually	Yes	# 160000947	TBD			Y
102	37.29723	-80.055705	Roanoke College Cregger Center - ConTech Storm Filter	Manufactured BMP	2.300	0.250	2.050	06/2017	RU09	Roanoke River	Benthic, E. coli, Temperature, PCBs	Private	Annually	Yes	# 180001794	TBD			Y
103	37.320714	-80.033246	Fairfield Inn - Sand Filter w/ U.G. Detention	Other	2.420	0.930	1.490	12/2017	RU10	Mason Creek	Benthic, E. coli	Private	Annually	Yes	# 180000108	TBD			Y
104	37.287829	-80.042132	Mount Regis - U/G storage to control SWM release	Other	3.240	1.250	1.990	09/2017	RU10	Mason Creek	Benthic, E. coli	Private	Annually	Pending	TBD	TBD			Y
105	37.309524	-80.033282	Parkway Brewery - Permeable Pavement	Other	1.240	1.090	0.150	06/2015	RU10	Mason Creek	Benthic, E. coli	Private	Annually	Pending	TBD	TBD			Y
106	37.282072	-80.022236	CLI - North Pond	Detention	5.020	0.520	4.500	06/2009	RU10	Mason Creek	Benthic, E. coli	Private	Annually	No	N/A	TBD			Y
107	37.278817	-80.021736	CLI - South Pond	Detention	17.270	15.750	1.520	06/2009	RU10	Mason Creek	Benthic, E. coli	Private	Annually	No	N/A	TBD			Y
108	37.269297	-80.037758	419 Rotary Park	Bioretention	3.070	1.070	2.000	01/2018	RU09	Roanoke River	Benthic, E. coli, Temperature, PCBs	Public	Annually	No	N/A	6/22/2018	Cut down invasive species & trim back understory	Complete	Y
109	37.266217	-80.021737	Aztec Rental: U/G Storage Tank/Rainwater Harvesting	Other	0.207	0.000	0.207	09/2017	RU09	Roanoke River	Benthic, E. coli, Temperature, PCBs	Private	Annually	Yes	# 170000800	TBD			Y
110	37.289156	-80.063281	Chestnut Manor Parking Improvements	Detention	0.540	0.180	0.360	TBD	RU09	Roanoke River	Benthic, E. coli, Temperature, PCBs	Private	Annually	Yes	# 170001518	TBD			P
111	37.266963	-80.078099	Mowles Spring Park Upper Pond	Detention	15.700	15.000	0.700	TBD	RU09	Roanoke River	Benthic, E. coli, Temperature, PCBs	Public	Annually	No	N/A	6/29/2018	Under construction	Establish vegetation	P
112	37.27053	-80.037813	Riverview Dr - Compost-Amended Filter Path (x3) Pizza Pa	Other	0.170	0.070	0.100	TBD	RU09	Roanoke River	Benthic, E. coli, Temperature, PCBs	Private	Annually	Yes	# 170001670	TBD			P
113	37.285972	-80.09691	West Main Auto Spa	Infiltration	0.421	0.337	0.084	04/2018	RU09	Roanoke River	Benthic, E. coli, Temperature, PCBs	Private	Annually	Yes	# 170001671	TBD			Y
114	37.283434	-80.077464	1280 Southside Drive	Detention	0.370	0.290	0.800	TBD	RU09	Roanoke River	Benthic, E. coli, Temperature, PCBs	Private	Annually	Yes	# 180002125				P
Total															**110**			**14**	

* 407 E Calhoun St: Parcel is owned by the City of Salem but the Leasee/Developer is responsible for SWM BMP maintenance per agreement dated 10/01/200

SWM BMPs that came online during current reporting year

SWM BMPs scheduled to come online in the future, most of these are still in the planning phase or under construction and are not yet used to treat stormwate