

**TOWN OF BLACKSBURG STORMWATER MANAGEMENT  
PROGRAM**

**VPDES PERMIT NO. VAR 040019**

(Effective July 1, 2013)

**Municipal Separate Storm Sewer System  
(MS4)**

**YEAR 4 ANNUAL REPORT**



**Coverage Issued: July 1, 2013**

**Reporting Period: July 1, 2016 through June 30, 2017**

**Contact: Kafi Howard, Town Engineer**

**Date: October 1, 2017**

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## Introduction

Regulatory compliance related to stormwater management and the Municipal Separate Storm Sewer System (MS4) program is part of a town wide program. This document serves as the annual report for the reporting period of **July 1, 2016** through **June 30, 2017** for the **Town of Blacksburg** (TOB), General Permit No. **VAR040019** (effective July 1, 2013 – June 30, 2018). In this past permit year there have been no significant modifications to any department's roles and responsibilities as described in the TOB Program Plan, but the document has been updated to include all of the policies and procedures referenced in this annual report. Minor revisions to BMPs are described in the body of the annual report based upon evaluations made upon the end of the reporting period.

## Compliance with Objectives of General Permit

### ***Permit Condition: II.E.3.a***

- 1) Name and permit number
- 2) Annual report year
- 3) Modifications to any operator's departments roles and responsibilities
- 4) Number of new MS4 outfalls and associated acreage by HUC added during the permit year.
- 5) Signed Certification

The name, permit number and annual report year are located on the coversheet of the Town of Blacksburg MS4 Annual Report. There have been no modifications to operator's department's roles and responsibilities. There were three new MS4 outfalls added during this permit year. Details regarding the new outfalls are identified in Appendix 3.A Storm Drain System Map Summary and Evaluation. The signed certification is included on the final page of this annual report.

### ***Permit Condition: II.E.3.b***

The status of compliance with state permit conditions, an assessment of the appropriateness of the identified best management practices and progress towards achieving the identified measurable goals for each of the minimum control measures are discussed below and in the following sections.

In review of this stormwater program, the Town finds itself in compliance with the objectives of the General Permit. The Town review finds the identified best management practices (BMPs) successful in achieving the measurable goals for each of the minimum control measures (MCMs) as outlined in the Program Plan. The BMPs are found to be appropriate for addressing the discharges to impaired waterways and for meeting the objectives of the permit. The documentation to support this review is more specifically identified in the "Minimum Control Measure" section of this report for each BMP as:

- Measurable Goals Identified and Achieved,
- Appropriateness of BMP for Addressing Impaired Discharges,
- Progress Towards Meeting Objectives of the Permit,
- Consistency with Public Outreach and Education Plan, and
- Proposed Changes to the BMP or Measurable Goals

**Permit Condition: II.E.3.c**

Results of information collected and analyzed including monitoring data, if any, during the reporting period.

*No monitoring is required as part of the implementation and evaluation of the TMDL action plan. Field screening monitoring results is included in this annual report in Appendix 3.A, Outfall Reconnaissance Collected Data.*

**Permit Condition: II.E.3.d**

A summary of the stormwater activities the Town plans to undertake during the next reporting cycle.

*Under each BMP the “Next Reporting Period Activities Planned” section discusses all plans for the next reporting period.*

**Permit Condition: II.E.3.e**

A change in any identified best management practices or measurable goals for any of the minimum control measures including steps to be taken to address any deficiencies.

*No changes have been planned for the best management practices or measurable goals.*

**Permit Condition: II.E.3.f**

Notice that the operator is relying on another government entity to satisfy some of the state permit obligations (if applicable).

*The Town of Blacksburg is not relying on any other government entity to satisfy any permit obligations.*

**Permit Condition: II.E.3.g**

Documentation of the approval status of any programs pursuant to Section IIC (if appropriate), or document the progress towards achieving full approval of these programs.

*This does not apply to the Town of Blacksburg.*

**Permit Condition: II.E.3.h**

Information required for any applicable TMDL special condition contained in Section I.

*The Town of Blacksburg has included all applicable TMDL special condition requirements in the TMDL Special Condition Requirements section of the annual report. During the last reporting period (years 2015 – 2016), the TMDL Action Plan was updated to reflect the special conditions for TMDLs approved between July 2008 and June 2013. The Roanoke River PCB TMDL was approved during this time period. The TMDL Action Plan is included in the Program Plan.*

## TMDL Special Condition Requirements

TMDLs for both the Stroubles Creek and Upper Roanoke River watersheds were approved prior to the July 9, 2008 effective date of the General Permit. Therefore, special condition requirements (Section 1 B) apply to the Town during the current permit cycle. The TMDL for PCBs in the Roanoke River was approved in April 2010 and for the first time has been included in Blacksburg's TMDL Special Condition Requirements in this annual report. The TOB currently has the following WLAs associated with a TMDL:

- 211 tons/year sediment to Stroubles Creek (aggregate WLA)
- 102 tons/year sediment to Upper Roanoke River watershed
- 3.15E+09 cfu/year bacteria (E coli) to Wilson Creek/ Upper Roanoke River watershed
- 7.8 mg/yr of polychlorinated biphenyl to the Roanoke River watershed

### List of TMDL Special Condition BMP's:

- A. Maintain an Updated Program Plan that includes a TMDL Action Plan.
- B. Maintain a List of Legal Authorities, Permits, and Agreements Applicable to Reducing the WLA.
- C. Maintain a List of Additional Management Practices & Methods Beyond MCMs 1-6 Applicable to Reduce WLA.
- D. Enhance the PEOP and Employee Training to Address Reducing WLA.
- E. Assess all Significant Sources of Pollutants from Municipal Facilities.
- F. Develop a Method to Assess TMDL Action Plans for Effectiveness in Reducing WLAs

### **A. Maintain an Updated Program Plan that includes a TMDL Action Plan**

The Town of Blacksburg will maintain an updated MS4 Program Plan that includes a specific TMDL Action Plan for pollutants associated to the MS4 in approved TMDLs. The TMDL Action Plans may be implemented in multiple phases over more than one permit cycle using the adaptive iterative approach provided adequate progress to reduce the pollutant discharge in a manner consistent with the assumptions and requirements of the specific TMDL WLA is demonstrated in accordance with the General Permit.

<b>Measurable Goals Identified and Achieved:</b>	<b>Years Planned</b>					<b>Years Achieved</b>
Development of TMDL Action Plan	2014	2015	2016	2017	2018	<b>2015 - 2017</b>
Evaluate TMDL Action Plan			2016	2017	2018	<b>2016 - 2017</b>
<b>Progress Toward Meeting Objectives of Permit</b>						
TMDL Action Plan was completed in the 2015 permit year as outlined in General Permit Table 1: Schedule of MS4 Plan Updates Required in this Permit and has been updated for the PCB TMDL in this reporting year. This revised document is included with the submittal of this current Annual Report.						
<b>PEOP Consistency</b>						
Currently there is no education or outreach component to this BMP.						
<b>Proposed Changes to BMP or Measurable Goals</b>						
No changes proposed. The Action Plan has been completed and updated with PCB requirements.						
<b>Next Reporting Period Activities Planned (YEAR 5)</b>						
The town plans to continue to include information regarding local TMDLs in the Public Outreach and Education Plan.						

**B. Maintain a List of Legal Authorities and Agreements Applicable to Reducing the WLA**

The Town of Blacksburg will maintain a list of its legal authorities such as ordinances, state and other permits, orders, specific contract language, and inter-jurisdictional agreements applicable to reducing the pollutant identified in each applicable waste load allocation.

<b>Measurable Goals Identified and Achieved:</b>	<b>Years Planned</b>					<b>Years Achieved</b>
Development of List of Legal Authorities	2014	2015	2016	2017	2018	<b>2014 - 2017</b>
Evaluate List of Legal Authorities		2015	2016	2017	2018	<b>2015 - 2017</b>
<b>Progress Toward Meeting Objectives of Permit</b>						
The current list is located in the Program Plan document. The Town has evaluated these legal authorities and finds them effective in meeting the objectives of this permit.						
<b>PEOP Consistency</b>						
Currently there is no education or outreach component to this BMP.						
<b>Proposed Changes to BMP or Measurable Goals</b>						
The Town reviewed the legal authorities and found that our legal authorities are adequate. A complete list has been included in the <b>updated Program Plan</b> . One item that was identified was the Town’s Erosion and Sediment Control Ordinance needs to have the state code reference updated. This will reflect the new state code section in 9VAC25-840.						
<b>Next Reporting Period Activities Planned (YEAR 5)</b>						
The town will continue to review legal authorities and update the Erosion and Sediment Control ordinance accordingly.						

**C. Maintain a List of Additional Methods beyond MCMs 1-6 Applicable to Reduce WLA**

The Town of Blacksburg will maintain a list of additional management practices, control techniques and system design and engineering methods, beyond those included in the Minimum Control Measures 1-6 that are being implemented as part of the Program Plan, but are still applicable in reducing the pollutant identified in each waste load allocation

<b>Measurable Goals Identified and Achieved:</b>	<b>Years Planned</b>					<b>Years Achieved</b>
Develop a List of Supplemental Methods beyond BMPs	2014	2015	2016	2017	2018	<b>2014 – 2017</b>
Evaluate List of Supplemental Methods		2015	2016	2017	2018	<b>2015 - 2017</b>
<b>Progress Toward Meeting Objectives of Permit</b>						
Currently all methods used to reducing the WLA are included in the MCM measures and TMDL Action Plan. Beyond those included in the Action Plan, no additional methods were included this reporting year.						
<b>PEOP Consistency</b>						
Currently there is no education or outreach component to this BMP.						
<b>Proposed Changes to BMP or Measurable Goals</b>						
None proposed.						
<b>Next Reporting Period Activities Planned (YEAR 5)</b>						
The town plans to continue to review methods beyond those in MCMs and Action Plan. If additional opportunities for management practices, techniques or design & engineering methods are incorporated, they will be included.						

**D. Enhance the PEOP and Employee Training to Address Reducing WLA**

The Town of Blacksburg will enhance its public education and outreach and employee training programs to also promote methods to eliminate and reduce discharges of the pollutants identified in the WLA.

<b>Measurable Goals Identified and Achieved:</b>	<b>Years Planned</b>	<b>Years Achieved</b>
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Enhance PEO to Address WLA	2014	2015	2016	2017	2018	<b>2014 - 2017</b>
Enhance Employee Training to Address WLA		2015	2016	2017	2018	<b>2015 - 2017</b>
<b>Progress Toward Meeting Objectives of Permit</b>						
Currently the Public Education and Outreach Program has identified two of the three pollutants of concern for local TMDLs (sediment and bacterial) as priority water quality issues that are addressed in the PEO. The third pollutant of concern (PCBs) has been incorporated into employee training protocols to increase awareness of this issue and educate staff on WLA reduction and elimination methods. This is detailed in BMP 6.E.						
<b>PEOP Consistency</b>						
<ul style="list-style-type: none"> <li>High Priority Issue: <b>Bacteria and Sediment</b></li> <li>Targeted Group(s): <b>not applicable (Employee Impacts Only)</b></li> </ul>						
<b>Proposed Changes to BMP or Measurable Goals</b>						
None proposed.						
<b>Next Reporting Period Activities Planned (YEAR 5)</b>						
The Town plans to continue to incorporate these WLA strategies in employee training and SOPs and evaluate their effectiveness.						

### E. Assess all Significant Sources of Pollutants from Municipal Facilities

The Town of Blacksburg will assess all significant sources of pollutant(s) from facilities of concern owned or operated by the Town of Blacksburg that are not covered under a separate VPDES permit. A significant discharge is a discharge where the expected pollutant loading is greater than the average pollutant loading for the land use identified in the TMDL. The Town will identify all municipal facilities that may be a significant source of the identified pollutant.

<b>Measurable Goals Identified and Achieved:</b>	<b>Years Planned</b>					<b>Years Achieved</b>
Identify Facilities of Concern	2014	2015	2016	2017	2018	<b>2014 - 2017</b>
Assess Facilities Potential Sources of Pollutants		2015	2016	2017	2018	<b>2015 - 2017</b>
<b>Progress Toward Meeting Objectives of Permit</b>						
Currently the Town has completed the list of facilities of concern which are those municipal facilities that are located in watersheds with TMDL WLAs and are not covered under a separate permit. Inspections of these facilities have been performed for evidence of pollutants of concern (sediment and bacteria). The Town Public Works site has been identified as having the potential to discharge pollutants. A site-specific Stormwater Pollution Prevent Plan is has been completed for the Public Works site and it addresses all potential pollution sources. The Town has begun to evaluate a schedule for installing best management practices to mitigate the items identified in the Public Works SWPPP. A complete list of all evaluated Town facilities as well as the Public Works SWPPP is included in the <b>updated Program Plan</b> .						
<b>PEOP Consistency</b>						
Currently there is no public education or outreach component to this BMP.						
<b>Proposed Changes to BMP or Measurable Goals</b>						
None proposed.						
<b>Next Reporting Period Activities Planned (YEAR 5)</b>						
Now that the SWPPP is complete, Town staff is planning for implementation of best management practices identified in the SWPPP. Training regarding site specific recommendations will be initiated.						

### F. Develop a Method to Assess TMDL Action Plans for Effectiveness in Reducing WLAs

The Town of Blacksburg will develop and implement a method to assess TMDL Action Plans for their effectiveness in reducing the pollutants identified in the WLAs. The evaluation shall use any newly available information, representative and adequate water monitoring results, or modeling tools to estimate pollutant reductions for the pollutants of concern from implementation of the

MS4 Program Plan. The methodology used for assessment shall be described in the TMDL Action Plan.

<b>Measurable Goals Identified and Achieved:</b>	<b>Years Planned</b>				<b>Years Achieved</b>
Develop Evaluation Method	2015	2016	2017	2018	<b>2015 - 2017</b>
Implement Evaluation Method		2016	2017	2018	<b>2017</b>
<b>Progress Toward Meeting Objectives of Permit</b>					
The method to assess the TMDL Action plan is identified in the TMDL Action Plan. The Town plans to use the Watershed Treatment Model to estimate pollutant reductions to assess water quality improvements in the Action Plan.					
<b>PEOP Consistency</b>					
Currently there is no education or outreach component to this BMP.					
<b>Proposed Changes to BMP or Measurable Goals</b>					
None proposed.					
<b>Next Reporting Period Activities Planned (YEAR 5)</b>					
The town plans to continue to assess TMDL Action Plans for effectiveness in reducing WLAs.					

## MCM 1: Public Education & Outreach on Stormwater Impacts

Continue to implement a public education program to distribute educational materials to the community or conduct equivalent outreach activities about the impacts of storm water discharges on water bodies and the steps that the public can take to reduce pollutants in storm water runoff. Measures described below are intended to meet public outreach and measurable goals as described 9VAC25-890-40, Section II B (1) and Section I B (2) C.

### List of Minimum Control Measure #1 BMP's:

- A. Public Education and Outreach Plan (PEOP) Development.
- B. Storm Drain Marking Program Implementation.
- C. Demonstration Projects Enhancement.
- D. Household Waste, Business Waste, Universal and Hazardous Waste Education and Minimization.
- E. Grease Program Enforcement.
- F. Illicit Discharge Education.
- G. Town Stormwater Page Maintenance.

### **Appropriateness of the Minimum Control Measure One BMPs:**

These BMPs increase awareness of the Town's local water quality issues by engaging the public in a variety of formats, introducing them to local impairments and ways in which they may be able to have some positive effect on the discharge to the Town's impaired waters. In the chart below, it illustrates how each of our BMPs addresses the specific impairments of our local waters.

2010 305(b)/303(d) Water Quality Assessment Report - Impairments				
MINIMUM CONTROL MEASURE ONE BMPs	<i>Sediment</i>	<i>Bacteria</i>	<i>Temperature</i>	<i>PCBs</i>
BMP 1.A (Public Education and Outreach Plan Development)	✓	✓	✓	✓
BMP 1.B (Storm Drain Marking Program)	✓	✓		
BMP 1.C (Demonstration Projects Enhancement)	✓	✓	✓	
BMP 1.D (Household, Business and Hazardous Waste)		✓		✓
BMP 1.E (Grease Program Enforcement)		✓		
BMP 1.F ( Illicit Discharge Education)	✓	✓	✓	✓
BMP 1.G (Town Stormwater Page Maintenance)	✓	✓	✓	✓

### **A. Public Education and Outreach Plan (PEOP) Development and Implementation**

The Town will develop a public education and outreach plan (PEOP) to coordinate all outreach efforts into one campaign.

Measurable Goals Identified and Achieved:	Years Planned				Years Achieved
Identify three high-priority Issues	2014				2014 - 2017
Identify population size of the Target Audience	2014				2014 - 2017
Develop a Relevant Message	2014				2014 - 2017
Conduct Activities to Reach 20% of Target Audience	2015	2016	2017	2018	2015 - 2017
Evaluate Plan for Appropriateness and Effectiveness	2015	2016	2017	2018	2015 - 2017

Evaluate Audience Selection and High Priority Issues	2015	2016	2017	2018	<b>2015 – 2017</b>
Provide Participation Opportunities	2015			2018	-
<b>Progress Toward Meeting Objectives of Permit</b>					
The Town has continued to conduct activities and evaluate the program in this permit year. Below is a summary of the cumulative impact from all activities conducted as part of the Public Education and Outreach Plan during this reporting period. Details on the breakdown of all activities conducted and persons targeted is located in <b>Appendix 1.A (Summary of PEOB Implementation)</b> .					
<b>PEOB Consistency</b>					
<ul style="list-style-type: none"> <li>• High Priority Issue(s): <b>Oil &amp; Grease, Bacteria and Sediment</b></li> <li>• Targeted Group(s) and Total number in group: <ul style="list-style-type: none"> <li>- <b>Commercial Restaurant Employees (CRE) – 300 TOTAL</b></li> <li>- <b>Young Residents (YR) – 17,474 TOTAL</b></li> <li>- <b>Homeowners &amp; Families (H&amp;F) – 13,162 TOTAL</b></li> </ul> </li> <li>• # People Reached: <b>CRE:300 (100%), YR: 42,795 (100%), H&amp;F: 29,640 (100%)</b></li> </ul>					
<b>Proposed Changes to BMP or Measurable Goals</b>					
No significant changes are proposed. Additional outreach opportunities will be performed to keep the program implementation flexible and varying. The Town’s goal is to keep citizens interested in listening to the message so that they are open and receptive to future messages.					
<b>Next Reporting Period Activities Planned (YEAR 5)</b>					
The town plans to continue to implement the Public Education and Outreach Plan and effectively reach a minimum of 20% of each target audience will the activities detailed in it. The planned activities include: <ul style="list-style-type: none"> <li>• Continue to expand the storm drain marking by marking more student areas and monitoring repairs to existing markings. (Estimated target audience 4,000 young residents, 23% of target)</li> <li>• Continue to send out electronic flyers several times a year to address illicit discharges and pollution prevention to residents. (Estimated target audience, 6,000 homeowners and families, 45% of target)</li> <li>• Target different outreach media such as bus advertisements and local print media. (target audience not yet known)</li> </ul>					

## B. Storm Drain Marking Program Implementation

The town plans to mark all storm drains within town limits with information regarding the storm drain system. A combination of painted storm drain stencils and the placement of permanent storm drain curb markers will be utilized for this program. Painted storm drain stencils will be used in areas where high traffic could dislodge a permanent curb marker. A permanent high visibility curb marker will be used in more pedestrian areas.

<b>Measurable Goals Identified and Achieved:</b>	<b>Years Planned</b>					<b>Years Achieved</b>
Create and Update Storm Drain Marking Inventory	2014	2015	2016	2017	2018	<b>2014 - 2017</b>
Mark Storm Drains with Faded Markings	2014	2015	2016	2017	2018	<b>2014 &amp; 2015</b>
Mark Storm Drains with Permanent Marker	2014	2015	2016	2017	2018	<b>2014 – 2017</b>
Evaluate BMP for Appropriateness and Effectiveness	2015	2016	2017	2018		<b>2015 - 2017</b>
<b>Progress Toward Meeting Objectives of Permit</b>						
The Town completed the marking of <b>240</b> high visibility metal markers on the highly pedestrian streets of downtown, Main Street and Prices Fork Road. A GIS map is being used to inventory marked locations and plan for future marking areas. A Downtown Market Analysis and Marketing Plan for Blacksburg was performed in 2007 and estimated that the downtown area receives 75,000 visits per year based upon surveys of downtown businesses. This number is what is used to estimate the impact to the target groups. Additionally, the survey breaks down the visits by type (i.e. 54% students, 34% residents and 12% visitors from out of town).						
<b>PEOB Consistency</b>						
<ul style="list-style-type: none"> <li>• High Priority Issue(s): <b>Oil &amp; Grease, Bacteria and Sediment</b></li> </ul>						

<ul style="list-style-type: none"> <li>Targeted Group(s): <b>Commercial Restaurant Employees, Young Residents, and Homeowners &amp; Families</b></li> <li># People Reached: <b>Young Residents (40,000), Commercial Restaurant Employees (300), and Homeowners and Families (25,500).</b></li> </ul>
<b>Proposed Changes to BMP or Measurable Goals</b>
No changes are proposed for the BMP. The Town is continuing to look for ways to increase the locations of marking to those in other commercial areas in town.
<b>Next Reporting Period Activities Planned (YEAR 4)</b>
The town will continue to expand the installation of high visibility metal mark in highly visible areas, primarily in shopping centers and apartment complexes where foot traffic is heavy. The storm drain markers target all three high priority issues: oil & grease, bacteria and sediment. The Town goal is to continue to reach a minimum of 3500 students, which is 20% of the target audience through these efforts.

**C. Demonstration Projects Enhancement**

The town will continue utilizing Demonstration Projects on Town property as examples and educational resources for citizens:

- Wong Park Bioretention and Urban Forestry Area
- Recreation Building Bioretention (research partnership with Virginia Tech)
- Aquatic Center Bioretention (Bioretention retrofit)
- Blacksburg Motor Company (Bioretention, porous concrete, rain gardens, and rain barrels)
- South End Fire Station LID practices
- Farmer’s Market (Redevelopment, reduction of impervious cover, Urban beautification)
- College Avenue Promenade (Urban streetscape Bioretention)
- Storm Drain Arts Program on Public Storm drain Infrastructure
- 16 Frogs Watershed Initiative

<b>Measurable Goals Identified and Achieved:</b>	<b>Years Planned</b>					<b>Years Achieved</b>
Conduct tour(s) of Stormwater Demonstration Projects	2014	2015	2016	2017	2018	<b>2014 – 2017</b>
Evaluate BMP for Appropriateness and Effectiveness		2015	2016	2017	2018	<b>2015 - 2017</b>
New Demonstration Projects/Initiatives					2018	-
<b>Progress Toward Meeting Objectives of Permit</b>						
Two tours were performed during this reporting period. One tour was provided for the current class of Master Naturalists on 6/22/2017. They tours the Blacksburg Motor Company, discussed the challenges of an urban brownfield site and discussed the bioretention, porous concrete, and rain barrels. Another tour was provided for the 16 Squares Initiative on 4/11/2017. This tour traveled through Downtown Blacksburg learning about the Town of Blacksburg’s Freshwater Heritage.						
<b>PEOP Consistency</b>						
<ul style="list-style-type: none"> <li>High Priority Issue: <b>Bacteria and Sediment</b></li> <li>Targeted Group(s): <b>Young Residents (YR), and Homeowners &amp; Families (H&amp;F)</b></li> <li># People Reached: <b>Young Residents (21), Homeowners &amp; Families (8)</b></li> </ul>						
<b>Proposed Changes to BMP or Measurable Goals</b>						
None proposed. The evaluation shows that this is an effective method of reaching our target audience.						
<b>Next Reporting Period Activities Planned (YEAR 4)</b>						
Continue to provide tours of water quality initiatives and utilize them as educational resources. These tours are provided upon request and not initiated by the Town. The demonstration projects target two of the three high priority issues: bacteria and sediment. For this BMP, young residents and homeowners and families are the target audience because they have the ability to reduce sediment and bacteria inputs to the MS4 by installing BMP similar to the demonstration projects.						

## D. Household Waste, Business Waste, Universal and Hazardous Waste Education and Minimization

The Town’s Office of Waste Minimization and Recycling employs two full time positions dedicated to addressing municipal solid waste, universal waste, and hazardous waste issues. Staff also addresses employee awareness and community education regarding these topics.

<b>Measurable Goals Identified and Achieved:</b>	<b>Years Planned</b>					<b>Years Achieved</b>
Conduct Household Hazardous Waste Days	2014	2015	2016	2017	2018	<b>2014 – 2017</b>
Record HHHW date, attendance & weight of collection.	2014	2015	2016	2017	2018	<b>2014 – 2017</b>
Town Sponsored Electronics Recycling	2014	2015	2016	2017	2018	<b>2014 – 2017</b>
Evaluate BMP for Appropriateness and Effectiveness		2015	2016	2017	2018	<b>2015 - 2017</b>
<b>Progress Toward Meeting Objectives of Permit</b>						
The Household Hazardous Waste Days are now being scheduled once a month. The events are described in Appendix 1-C, Household Hazardous Waste Days Summary and Evaluation. One of the events this year was snowed out, but eleven events were held which reached 324 households.						
<b>PEOP Consistency</b>						
<ul style="list-style-type: none"> <li>• High Priority Issue: <b>Sediment &amp; Bacteria</b></li> <li>• Targeted Group(s): <b>Homeowners &amp; Families (H&amp;F)</b></li> <li>• # People Reached: <b>H&amp;F (401)</b></li> </ul>						
<b>Proposed Changes to BMP or Measurable Goals</b>						
None proposed. The evaluation shows that this is an effective method of reaching our target audience.						
<b>Next Reporting Period Activities Planned (YEAR 5)</b>						
The town will continue to sponsor monthly Household Hazardous Waste Collection days. Additional advertisement for the HHHW days will be incorporated into the PEOP. The Household hazardous waste days target two of the three high priority issues: sediment and bacteria. The homeowners and family target group was chosen for this BMP because they have the most likelihood of utilizing a household hazardous waste event. It is estimated that a total of 500 households will be served, which is 19% of the target audience. Household hazardous waste events are scheduled for the third Saturday of each month, for a total of 12 events.						

## E. Grease Program Enforcement

The Town “grease program” has established education, inspection, and enforcement guidelines. The Town has identified gas station and food service businesses that use or generate grease and/or oils. The businesses are targeted for education and outreach concerning BMPs that address the storage, disposal, and spills annually. The Town also sends an annual reminder to all historic violators. The Town maintains a database of violations that is utilized in the geographical informational systems to track trends in the system.

<b>Measurable Goals Identified and Achieved:</b>	<b>Years Planned</b>					<b>Years Achieved</b>
Send Educational Brochures to Restaurants	2014		2016	2017		<b>2014, 2017</b>
Send Educational Brochures to Fuel Centers		2015	2016		2018	<b>2016</b>
Send a reminder to businesses historic violations	2014		2016		2018	<b>2014, 2016</b>
Maintain database of oil & grease violators	2014	2015	2016	2017	2018	<b>2014 – 2017</b>
Evaluate BMP for Appropriateness and Effectiveness		2015	2016	2017	2018	<b>2015 – 2017</b>
<b>Progress Toward Meeting Objectives of Permit</b>						

During this reporting year, a copy of the Stormwater Best Management Practices for Restaurants was sent out to all food purveyors in Blacksburg, a total of 88. A copy of the brochure is located in Appendix 1E – Educational Brochures for Restaurants in Blacksburg 2016/17. The brochures target the high priority issue of oil and grease from restaurant practices and other illicit discharges. For this BMP, restaurants are the target audience due to the high risk of oil and grease discharges.

**PEOP Consistency**

- High Priority Issue: Oil & Grease
- Targeted Group: **Commercial Restaurant Employees (CRE 300)**
- # People Reached: **CRE (300)**

**Proposed Changes to BMP or Measurable Goals**

None proposed. The evaluation shows that this is an effective method of reaching our target audience.

**Next Reporting Period Activities Planned (YEAR 5)**

The illicit discharge brochures target the high priority issue of oil and grease. For this next reporting period, the Town plans on sending literature to fuel centers and historic violators which will reach a target group of 35.

**F. Illicit Discharge Education**

The Town continues to research and update the BMPs, alternative options, and proper disposal techniques for non-stormwater discharges.

<b>Measurable Goals Identified and Achieved:</b>	<b>Years Planned</b>					<b>Years Achieved</b>
Send Illicit Discharge Educational Information to Businesses and Residents	2014	2015	2016	2017	2018	<b>2014 – 2017</b>
Send out Non-stormwater discharger survey	2015					<b>2015</b>
Evaluate BMP for Appropriateness and Effectiveness	2015	2016	2017	2018		<b>2015 – 2017</b>
<b>Progress Toward Meeting Objectives of Permit</b>						
The Town sent out the Flyer for Stormwater Management Best Management Practices for Residential Neighborhoods flyer to the Citizens Alert system. This email list has a distribution of <b>1765</b> of homeowners and families. A copy of the flyer is included in Appendix 1-F, Illicit Discharge Education Summary and Evaluation.						
<b>PEOP Consistency</b>						
<ul style="list-style-type: none"> <li>• High Priority Issue: <b>Oil &amp; Grease, Bacteria and Sediment</b></li> <li>• Targeted Group(s): <b>Commercial Restaurant Employees, Homeowners and Families, Young Residents</b></li> <li>• # People Reached: <b>CRE (0), H&amp;F (1765), YR (0)</b></li> </ul>						
<b>Proposed Changes to BMP or Measurable Goals</b>						
None proposed. The evaluation shows that this is an effective method of reaching our target audience.						
<b>Next Reporting Period Activities Planned (YEAR 5)</b>						
In the next reporting period, the goal is to reach out to Businesses as a target audience. The town has a database of all permitted businesses of about 1200. This coming year the audience will not be one of the target groups. Other BMPs in this section shall sufficiently meet the required outreach for those audiences.						

**G. Town Stormwater Page Maintenance**

Stormwater related information is available on the Town’s website for the general public.

<b>Measurable Goals Identified and Achieved:</b>	<b>Years Planned</b>					<b>Years Achieved</b>
Update Stormwater webpage	2014	2015	2016	2017	2018	<b>2014 – 2017</b>
Review Stormwater webpage for Appropriate Content	2014	2015	2016	2017	2018	<b>2014 – 2017</b>
Evaluate BMP for Appropriateness and Effectiveness	2015	2016	2017	2018		<b>2015 – 2017</b>
<b>Progress Toward Meeting Objectives of Permit</b>						
The Town Stormwater page was updated to include information regarding the new Stormwater Utility ordinance, the Stormwater VSMP Program ordinance, and associated documents such as: the stormwater covenant, construction general permit, registration statement, termination form, fee table, single family SWPPP, and link to the BMP Clearinghouse. This past year the webpage was updated with the most current MS4 information.						

<b>PEOP Consistency</b>
<ul style="list-style-type: none"> <li>• High Priority Issue: Oil &amp; Grease, Bacteria and Sediment (ALL)</li> <li>• Targeted Group(s): <b>Commercial Restaurant Employees, Young Residents, and Homeowners &amp; Families</b></li> <li>• # People Reached: <b>Unknown – data on website usage is unknown at this time.</b></li> </ul>
<b>Proposed Changes to BMP or Measurable Goals</b>
The Town is continuing to look into ways to better quantify the website usage to better quantify the impact this BMP is having on the target audiences. The website provider has changed and statistics may be available for Year 5 reporting period.
<b>Next Reporting Period Activities Planned (YEAR 5)</b>
The Town will continue to add content to the webpage that is appropriate for the Stormwater Program and local water quality information. Statistics should be available for this following reporting period, so estimates for target audiences may be submitted.

## MCM 2: Public Involvement and Participation

The Town must, at a minimum, comply with state, tribal, and local public notice requirements when implementing a public involvement/participation program. The goal is to increase public notice, involvement and participation in the Town’s stormwater program by doing the following:

- a. Promote the availability of the Towns MS4 Program Plan and any modifications for public review and comment and by providing access to the MS4 Program Plan upon request of interested parties,
- b. Provide access to or copies of the annual report upon request, and
- c. Participate through promotion, sponsorship, or other involvement in local activities aimed at increasing public participation to reduce stormwater pollutant loads and improve water quality.

Measures described below are intended to meet these goals as described 9VAC25-890-40, Section II B (2).

### List of Minimum Control Measure #2 BMP’s:

- A. Conduct Stakeholder Meetings for Watershed Management and Stormwater Quality Improvement.
- B. TMDL Implementation Planning and Participation.
- C. Participate and Support Stream Clean-up Efforts.
- D. Posting of Program Plan and Annual Reports Online for General Public.
- E. Outreach Event Participation.

### **Appropriateness of the BMPs:**

These BMPs in conjunction succeed in increasing public involvement and participation in the Town’s stormwater program. Participation and citizen support for stormwater measures increases citizen advocacy and provides for more successful stormwater program. Below shows how each of our program plan BMPs addresses the specific impairments of our local waters.

2010 305(b)/303(d) Water Quality Assessment Report - Impairments				
MINIMUM CONTROL MEASURE TWO BMPs	<i>Sediment</i>	<i>Bacteria</i>	<i>Temperature</i>	<i>PCBs</i>
BMP 2.A (Stakeholder Meetings)	✓	✓	✓	
BMP 2.B (TMDL Implementation Planning and Participation)	✓	✓	✓	✓
BMP 2.C (Participate and support stream clean-up efforts)	✓	✓	✓	✓
BMP 2.D (Web Posting of Program Plan and Annual Reports)	✓	✓		
BMP 2.E (Outreach Event Participation)	✓	✓	✓	

## A. Conduct Stakeholder Meetings for Watershed Management and Stormwater Quality Improvement

Measurable Goals Identified and Achieved:	Years Planned					Years Achieved
Staff attends community meetings and public hearings for new projects with stormwater concerns.	2014	2015	2016	2017	2018	2014 – 2017
Document Citizen Comments	2014	2015	2016	2017	2018	2014 – 2017
Update Stormwater Goals in Comprehensive Plan			2016		2018	-
Meet w/ Local Stormwater Interest Groups and HOAs		2015	2016	2017	2018	2015 – 2017
Evaluate BMP for Appropriateness and Effectiveness		2015	2016	2017	2018	2015 – 2017
<b>Progress Toward Meeting Objectives of Permit</b>						
The Town had 6 community meetings and 5 public hearings in which stormwater issues were discussed. A total of 168 citizens attended these meetings. There were 2 stormwater stakeholders interest groups met this reporting year. No updates were made to the comprehensive plan. The meetings are described in Appendix 2-A, Stormwater Stakeholders Meetings.						
<b>PEOP Consistency</b>						
<ul style="list-style-type: none"> <li>• High Priority Issue: <b>Sediment &amp; Bacteria</b></li> <li>• Targeted Group(s): <b>Homeowners &amp; Families</b></li> <li>• # People Reached: <b>H&amp;F (176)</b></li> </ul>						
<b>Proposed Changes to BMP or Measurable Goals</b>						
None proposed.						
<b>Next Reporting Period Activities Planned (YEAR 5)</b>						
None proposed. The community meetings and public hearings are dependent on proposed development and the resulting community concerns. These are not initiated by the Town. The Town will also attend as many conferences and other stormwater related events as possible. The evaluation suggests having stormwater meetings that address a larger audience so more impacts can be seen.						

## B. TMDL Implementation Planning and Participation

Measurable Goals Identified and Achieved:	Years Planned					Years Achieved
Attend Stroubles Creek TMDL IP Meetings	2014	2015	2016	2017	2018	2014 - 2016
Attend Roanoke River TMDL IP Meetings	2014	2015	2016	2017	2018	2014 - 2016
Attend New River PCB TMDL Imp. Meetings			2016	2017		2017
Evaluate BMP for Appropriateness and Effectiveness		2015	2016	2017	2018	2015 - 2017
<b>Progress Toward Meeting Objectives of Permit</b>						
Town staff attended 1 meeting concerning the planning or implementation of TMDLs for the Stroubles Creek and Roanoke River watersheds as well as the initiation of the New River PCB TMDL. The meeting conducted in this reporting period focused on the results of the draft TMDL for PCBs in the New River watershed. The meeting is described in Appendix 2-B, TMDL Implementation Planning Activities. The Town did not attend any TMDL planning meetings for Stroubles Creek or the Roanoke River.						
<b>PEOP Consistency</b>						
<ul style="list-style-type: none"> <li>• High Priority Issue: <b>PCBs</b></li> <li>• Targeted Group(s): <b>Commercial Restaurant Employees, Young Residents, and Homeowners &amp; Families</b></li> <li>• # Target People Reached: <b>H&amp;F(25)</b></li> </ul>						
<b>Proposed Changes to BMP or Measurable Goals</b>						
None proposed.						
<b>Next Reporting Period Activities Planned (YEAR 5)</b>						
Four additional meetings concerning the Stroubles Creek and Roanoke River TMDL planning and participation are expected to occur during the next reporting period.						

### C. Participate and Support Stream Clean-up Efforts

The Town will participate and assist local groups for stream clean-up efforts, including assistance with funding, trash collection, mapping and documentation for determining stream stretches, drainage ways, channels and other areas in need of clean-up and record keeping of these activities.

Measurable Goals Identified and Achieved:	Years Planned					Years Achieved
Participate Local Stream Clean-up Efforts	2014	2015	2016	2017	2018	2014, 2015
Assist in Local Stream Clean-up Efforts		2015	2016	2017	2018	2015
Evaluate BMP for Appropriateness and Effectiveness		2015	2016	2017	2018	2017
Progress Toward Meeting Objectives of Permit						
The Town did not participate in any stream clean-ups this reporting period.						
PEOP Consistency						
<ul style="list-style-type: none"> <li>High Priority Issue: <b>Bacteria, Sediment</b></li> <li>Targeted Group(s): <b>Young Residents, Homeowners and Families</b></li> <li># People Reached: <b>YR (0), H&amp;R(0)</b></li> </ul>						
Proposed Changes to BMP or Measurable Goals						
None proposed.						
Next Reporting Period Activities Planned (YEAR 5)						
Assist in stream clean-ups (dates to be determined) and reach our target audience “Young Residents”. The Town plans to begin the planning efforts for annual stream clean-ups with local youth groups and student greek associations. Our goal for next reporting period is to reach <b>100</b> young residents in this practice.						

### D. Posting of Program Plan and Annual Reports Online for General Public

Measurable Goals Identified and Achieved:	Years Planned					Years Achieved
Post Program Plan or Updates on Website	2014	2015	2016	2017	2018	2014 - 2017
Post Annual Report on Website by November 1	2014	2015	2016	2017	2018	2014 - 2017
Evaluate BMP for Appropriateness and Effectiveness		2015	2016	2017	2018	2015 - 2017
Progress Toward Meeting Objectives of Permit						
The Town posted Year 3 Annual report on the <a href="http://www.blacksburg.gov/stormwater">www.blacksburg.gov/stormwater</a> webpage on October 24, 2016. The activity is described and evaluated in Appendix 2-D, Posting of Program Plan and Annual Report Summary and Evaluation.						
PEOP Consistency						
<ul style="list-style-type: none"> <li>High Priority Issue: Oil &amp; Grease, Bacteria and Sediment (ALL)</li> <li>Targeted Group(s): <b>Commercial Restaurant Employees, Young Residents, and Homeowners &amp; Families</b></li> <li># People Reached: <b>Unknown – data on website usage is unknown at this time.</b></li> </ul>						
Proposed Changes to BMP or Measurable Goals						
None proposed.						
Next Reporting Period Activities Planned (YEAR 5)						
Post the Year 4 annual report and TMDL Action Plan on the Blacksburg Stormwater webpage by October 31, 2017.						

### E. Outreach Event Participation

Measurable Goals Identified and Achieved:	Years Planned					Years Achieved
Sponsor or Participate in at least 4 Outreach Events	2014	2015	2016	2017	2018	2014, 2015, 2017
Evaluate BMP for Appropriateness and Effectiveness		2015	2016	2017	2018	2015 - 2017
Progress Toward Meeting Objectives of Permit						
Town staff participated in “Steppin’ Out”, the New River Homebuilders Expo, The Big Event and a Stormwater Day with Christiansburg Middle School. These events occurred on 8/5/16, 9/16/15, and 3/10/17, 4/8/17 and 4/12/17. Staff had direct engagement with approximately 1666 people.						

<b>PEOP Consistency</b>
<ul style="list-style-type: none"> <li>• High Priority Issue: <b>Sediment, Oil and Grease, Bacteria</b></li> <li>• Targeted Group(s): <b>Commercial Restaurant Employees, Young Residents, and Homeowners &amp; Families</b></li> <li>• # People Reached: <b>YR (25), H&amp;F (205)</b></li> </ul>
<b>Proposed Changes to BMP or Measurable Goals</b>
None proposed.
<b>Next Reporting Period Activities Planned (YEAR 5)</b>
Participate in the following events: Steppin' Out, The Big Event and Community Association meetings. The Town has scheduled a primary school event with the Izaak Walton League of Montgomery County. If this is successful, it may become one of the Town's annual events. The target audience continues to be Young Residents and Homeowners and Families and our target goal is to reach <b>700</b> people.

### MCM 3: Illicit Discharge Detection and Elimination

Develop a comprehensive map of the storm drain system, establish and carry out procedures to identify and remove illicit discharges, establish legal authority for enforcement actions, and encourage public education and involvement in eliminating illicit discharges. Measures described below are intended to meet public outreach and measurable goals as described 9VAC25-890-40, Section II B (3).

#### List of Minimum Control Measure #3 BMP's:

- A. Develop a Storm Drain System Map
- B. Develop Procedures for Identifying Areas with High Potential for Introducing Illicit Discharges to the Storm System
- C. Enforce an Ordinance Prohibiting Illegal Dumping and Non-storm Water Discharges
- D. Enforce an Ordinance Prohibiting Diverted Stream Flows in Environmentally Sensitive Areas and Encouraging Buffering Around Creeks
- E. Establish a Plan to Identify and Remove Illicit Discharges by Utilizing Public Involvement, Education, and Enforcement of Illicit Discharge Ordinance.
- F. Estimate Volume of Stormwater Discharged and Quantity of WLA Pollutant.
- G. Develop Written Procedures to Detect, Identify, and Address Discharges Including Illegal Dumping
- H. Notify, in Writing, any Downstream Regulated MS4 to which the Small Regulated MS4 is Physically Interconnected of the Small Regulated MS4's Connection to that System.

#### Appropriateness of the BMPs:

These BMPs in conjunction succeed in establish legal authority for enforcement actions, and encourage public education and involvement in eliminating illicit discharges. Enforcement and awareness are critical to identify and eliminate illicit discharged to the storm drain network. Below shows how each of our BMPs addresses the specific impairments of our local waters.

2010 305(b)/303(d) Water Quality Assessment Report - Impairments				
MINIMUM CONTROL MEASURE THREE BMPs	<i>Sediment</i>	<i>Bacteria</i>	<i>Temp.</i>	<i>PCBs</i>
BMP 3.A (Develop a Storm Drain System Map)	✓	✓	✓	✓
BMP 3.B (Procedures for Identifying Illicit Discharge Potential)	✓	✓	✓	✓
BMP 3.C (Enforce Non-Stormwater Discharge Ordinance)	✓	✓	✓	✓
BMP 3.D (Enforce Ordinance Preventing Diverted Streams/Overlays)	✓	✓	✓	
BMP 3.E (Plan to Identify and Remove Illicit Discharges)	✓	✓	✓	✓
BMP 3.F (Estimate Volume discharged and quantity of WLA pollutant)	✓	✓		✓
BMP 3.G (Develop written procedures to detect, identify, and address stormwater discharges including illegal dumping)	✓	✓	✓	✓
BMP 3.H (Notification of Downstream Regulated MS4)	✓	✓		✓

## A. Develop and Update a Storm Drain System Map

<b>Measurable Goals Identified and Achieved:</b>	<b>Years Planned</b>					<b>Years Achieved</b>
Storm Sewer Inventory Mapping Update	2014	2015	2016	2017	2018	<b>2014 – 2017</b>
Report number of new structures and channels mapped	2014	2015	2016	2017	2018	<b>2014 – 2017</b>
Report number of new outfalls, acreage and HUC	2014	2015	2016	2017	2018	<b>2014 – 2017</b>
Evaluate BMP for Appropriateness and Effectiveness	2015	2016	2017	2018		<b>2015 - 2017</b>
<b>Progress Toward Meeting Objectives of Permit</b>						
In the past year the Town has mapped <b>43</b> new structures and <b>0</b> new channels. The Town is still continuing to map the results of the past year construction. The Town has mapped 3 new outfalls and has added the associated HUCs and drainage area to the database. The details regarding the update to the storm sewer system is discussed in Appendix 3.A Storm Drain System Map Summary and Evaluation.						
<b>Proposed Changes to BMP or Measurable Goals</b>						
None proposed.						
<b>Next Reporting Period Activities Planned (YEAR 5)</b>						
Continue to update and correct the storm drain system map.						

## B. Develop Procedures for Identifying Areas with High Potential for Illicit Discharge

<b>Measurable Goals Identified and Achieved:</b>	<b>Years Planned</b>					<b>Years Achieved</b>
Develop Illicit Discharge Potential Assessment	2014	2015	2016	2017	2018	<b>2014 - 2017</b>
Develop Outfall Reconnaissance Inventory	2015	2016	2017	2018		<b>2015 - 2017</b>
Perform screening for 20% of Outfalls	2014	2015	2016	2017	2018	<b>2014 - 2017</b>
Evaluate BMP for Appropriateness and Effectiveness	2015	2016	2017	2018		<b>2015 - 2017</b>
<b>Progress Toward Meeting Objectives of Permit</b>						
The Town has completed its Discharge Potential assessment and Outfall Reconnaissance Inventory as part of the Comprehensive Illicit Discharge Detection and Elimination Program (revised June 17, 2014) which outlines all details of the program. The Town has also screened 51 outfalls in reporting year 4, which is 26% of the total number of outfalls within the Town. Details regarding the outfalls screened and the evaluation of the illicit discharge program is discussed in Appendix 3.B Illicit Discharge Protocol and Procedures Summary and Evaluation. The Illicit Discharge Protocol has been added to the Program Plan this year.						
<b>Proposed Changes to BMP or Measurable Goals</b>						
None proposed.						
<b>Next Reporting Period Activities Planned (YEAR 5)</b>						
Continue to perform screening for a minimum of 20% of outfalls and evaluate BMP for effectiveness.						

## C. Enforce an Ordinance Prohibiting Illegal Dumping and Illicit Discharges

<b>Measurable Goals Identified and Achieved:</b>	<b>Years Planned</b>					<b>Years Achieved</b>
Enforce Illicit Discharge Ordinance	2014	2015	2016	2017	2018	<b>2014 - 2017</b>
Track all known illicit discharges and illegal dumping	2015	2016	2017	2018		<b>2015 - 2017</b>
Evaluate BMP for Appropriateness and Effectiveness	2015	2016	2017	2018		<b>2015 - 2017</b>
<b>Progress Toward Meeting Objectives of Permit</b>						
The Town has adopted the Illicit Discharges ordinance (sec. 18-624) of the new stormwater ordinance on June 10, 2014. This ordinance is an update to the previous Illicit Discharges section 18-622 of the stormwater ordinance. The Town recorded 20 illicit discharge or dumping complaints last reporting year, all of which were determined to be true illicit discharges. These incidents were tracked and eliminated according to the program procedures. The discharges are described in Appendix 3C, Illicit Discharges and Enforcement 2016 Summary and Evaluation.						
<b>Proposed Changes to BMP or Measurable Goals</b>						
None proposed.						
<b>Next Reporting Period Activities Planned (YEAR 5)</b>						

Continue to enforce, eliminate, and track illicit discharges.

#### D. Enforce an Ordinance Prohibiting Diverted Stream Flows and Encouraging Buffering Around Creeks

<b>Measurable Goals Identified and Achieved:</b>	<b>Years Planned</b>					<b>Years Achieved</b>
Enforce Creek Valley Overlay and Floodplain Districts	2014	2015	2016	2017	2018	<b>2014 – 2017</b>
Evaluate BMP for Appropriateness and Effectiveness	2015	2016	2017	2018		<b>2015 - 2017</b>
<b>Progress Toward Meeting Objectives of Permit</b>						
The Town continues to enforce the Creek Valley and Floodplain overlay districts. The Town reviewed one subdivision/site plans where the Floodplain Overlay was enforced. The details are described in Appendix 3D, Creek Valley and Floodplain Overlay Activities Summary and Evaluation.						
<b>Proposed Changes to BMP or Measurable Goals</b>						
None proposed.						
<b>Next Reporting Period Activities Planned (YEAR 5)</b>						
Continue to enforce the Creek Valley and Floodplain overlay districts.						

#### E. Establish an Illicit Discharge Plan to Eliminate Discharges through Outreach

<b>Measurable Goals Identified and Achieved:</b>	<b>Years Planned</b>					<b>Years Achieved</b>
Develop a Public Involvement Plan for Illicit Discharges	2014					<b>2014</b>
Outline Public Involvement & Education for Ill. Discharges	2014					<b>2014</b>
Outline the enforcement methodology	2014					<b>2014</b>
Document the methods used in outfall screening	2014					<b>2014</b>
Identify the outfall reconnaissance frequency	2014					<b>2014</b>
Detail actions required if a suspected discharge is found	2014					<b>2014</b>
Identify source identification, enforcement methods and reporting requirements.	2014					<b>2014</b>
Attend citizen event & distribute Information	2015	2016	2017	2018		<b>2015 - 2017</b>
Evaluate BMP for Appropriateness and Effectiveness	2015	2016	2017	2018		<b>2015 - 2017</b>
<b>Progress Toward Meeting Objectives of Permit</b>						
The Town has completed the Comprehensive Illicit Discharge Detection and Elimination Program (revised June 17, 2014) which outlines all details of the program. This year's activities include sending out flyers to 1765 residences, 88 restaurants and O&M training for municipal staff. Details are described in Appendix 3-E, Elimination of Discharges through Outreach Summary and Evaluation.						
<b>Proposed Changes to BMP or Measurable Goals</b>						
None proposed.						
<b>Next Reporting Period Activities Planned (YEAR 5)</b>						
Continue to attend citizen events, distribute information and evaluate BMP.						

#### F. Estimate Volume of Stormwater discharged and Quantity of WLA Pollutant

The TOB currently has the following WLAs associated with a TMDL:

- 211 tons/year sediment to Stroubles Creek
- 102 tons/year sediment to Upper Roanoke River watershed
- 3.15E+09 cfu/year bacteria (E coli) to Wilson Creek
- **7.8 mg/yr of polychlorinated biphenyl to the Roanoke River watershed**

<b>Measurable Goals Identified and Achieved:</b>	<b>Years Planned</b>					<b>Years Achieved</b>
Estimate Volume of Water Discharged from each watershed	2014	2015	2016	2017	2018	<b>2014 - 2017</b>

Estimate Amounts of WLA pollutants	2014	2015	2016	2017	2018	<b>2014 – 2017</b>
Evaluate BMP for Appropriateness and Effectiveness		2015	2016	2017	2018	<b>2015 – 2017</b>
<b>Progress Toward Meeting Objectives of Permit</b>						
The Town has estimated the volume and quantity of pollutants in prior years using the LTHIA Basic Spreadsheet. With the creation of the TMDL action plan, the Watershed Treatment Model has been utilized to estimate the volumes of stormwater and quantities of WLA pollutants. These results are discussed in detail in Appendix 3-F, Estimation of Volume and WLA for Town watersheds.						
<b>Proposed Changes to BMP or Measurable Goals</b>						
The only change proposed is to utilize the Watershed Treatment Model to continue to estimate the volume and quantities of pollutants of concern to be consistent with the Blacksburg TMDL Action Plan.						
<b>Next Reporting Period Activities Planned (YEAR 5)</b>						
Continue to estimate volume of water discharges, estimate pollutants and evaluate BMP.						

## G. Develop Written Procedures to Detect, Identify, and Address Illegal Stormwater Discharges

Measurable Goals Identified and Achieved:	Years Planned	Years Achieved			
Identify and document written dry weather screening methodologies.	2014	<b>2014</b>			
Develop a prioritized schedule of field screening.	2014	<b>2014</b>			
Describe how discharge rate and visual observations will be described.	2014	<b>2014</b>			
Identify a timeframe for follow-up.	2014	<b>2014</b>			
Establish a database for tracking.	2014	<b>2014</b>			
Expand outreach methods for public reporting.	2014	<b>2014</b>			
Evaluate BMP for Appropriateness and Effectiveness	2015	2016	2017	2018	<b>2015 - 2017</b>
<b>Progress Toward Meeting Objectives of Permit</b>					
The Town has completed the Comprehensive Illicit Discharge Detection and Elimination Program (revised June 17, 2014) which outlines all details of the program. An evaluation of this program is contained in Appendix 3-G, Evaluation of Procedures to Detect, Identify, and Address Illegal Stormwater Discharges. This document has been added to the Program Plan this reporting period.					
<b>Proposed Changes to BMP or Measurable Goals</b>					
None proposed.					
<b>Next Reporting Period Activities Planned (YEAR 5)</b>					
Continue to evaluate procedures for effectiveness.					

## H. Notify in Writing all Downstream MS4 of any Known Physical Interconnections

Measurable Goals Identified and Achieved:	Years Planned	Years Achieved				
Notify All Downstream MS4s of Interconnections	2014	2015	2016	2017	2018	<b>2014 – 2017</b>
Evaluate BMP for Appropriateness and Effectiveness		2015	2016	2017	2018	<b>2015 - 2017</b>
<b>Progress Toward Meeting Objectives of Permit</b>						
The Town notified Virginia Tech and VDOT in writing on 10/15/2013 and notified Montgomery County in writing on 4/13/2015 of all known physical interconnections. An evaluation of this program is contained in Appendix 3-H, Notify in Writing all Downstream MS4 of any Known Physical Interconnections Summary and Evaluation. There have been no new connections; therefore no new letters have been sent.						
<b>Proposed Changes to BMP or Measurable Goals</b>						
None proposed.						
<b>Next Reporting Period Activities Planned (YEAR 5)</b>						
There is the potential for a new connection to Virginia Tech MS4 as proposed with new development. Continue to monitor this new connection and notify Virginia Tech if this connection is constructed. Additionally note of any new known physical interconnections and update them on PCBs.						

## MCM 4: Construction Site Runoff Control

Develop, implement, and enforce a program to reduce pollutants in storm water runoff to the MS4 from construction activities that is compliant with the Virginia Erosion and Sediment Control program administered by the Department of Environmental Quality. Additionally, reduction of stormwater discharges from construction activity disturbing less than 5000 feet must be included in the program if that construction activity is part of a larger common plan of development or sale that would disturb 5000 square feet or more. Measures described below are intended to meet public outreach and measurable goals as described 9VAC25-890-40, Section II B (4).

The operator shall track regulated land-disturbance activities and submit the following information annually in accordance to Section II (E) (3) of 4VAC50-60

1. Total number of regulated land disturbing activities
2. Total disturbed acreage

### List of Minimum Control Measure #4 BMP's:

- A. Erosion and Sediment Control Ordinance, Certification and Land Disturbing Activities.
- B. Respond To Erosion and Sediment Control Complaints.
- C. Require construction site operators to control waste.
- D. Require acknowledgement from agent (design engineer) or owner when a VSMP permit is needed for a plan under review.
- E. E&S Inspection Protocol (July 2014)
- F. Pollution Prevention Plan Enforcement Protocol (July 2015)

### **Appropriateness of the BMPs:**

These BMPs provide the Town with an E&S program that can successfully reduce pollutants in storm water runoff to the MS4 from construction. Sediment from construction sites can act as a vehicle for bacteria and sediment transport into the regulated MS4. The chart below shows how each BMP successfully targets the impairments of the Town's local streams.

2010 305(b)/303(d) Water Quality Assessment Report - Impairments				
MINIMUM CONTROL MEASURE ONE BMPs	<i>Sediment</i>	<i>Bacteria</i>	<i>Temperature</i>	<i>PCBs</i>
BMP 4.A (Erosion and Sediment Control Ordinance)	✓	✓		
BMP 4.B (Respond To Erosion and Sediment Control Complaints)	✓	✓		
BMP 4.C (Require Construction Site Operators to Control Waste)		✓		✓
BMP 4.D (Measures to Assure Owners Acquire VSMP Permit)	✓	✓	✓	
BMP 4.E (E&S Inspection Protocol)	✓	✓		
BMP 4.F (Pollution Prevention Plan Enforcement Protocol) JULY 2015	✓	✓	✓	✓

## A. Erosion and Sediment Control Ordinance, Certification and Land Disturbing Activities

Measurable Goals Identified and Achieved:	Years Planned					Years Achieved
Erosion and Sediment Control Ordinance Review for State Compliance	2015					2015
Document number of E&S Inspections	2014	2015	2016	2017	2018	2015 – 2017
Document number and type of enforcement actions	2014	2015	2016	2017	2018	2015 – 2017
<b>Document number of exceptions granted</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>		<b>2016 - 2017</b>
Certify that all staff has appropriate certification(s)	2014	2015	2016	2017	2018	2015 – 2017
Track the number of land disturbances	2014	2015	2016	2017	2018	2015 – 2017
Track the total area of disturbed land	2014	2015	2016	2017	2018	2015 – 2017
Evaluate BMP for Appropriateness and Effectiveness	2015	2016	2017	2018		2015 – 2017
<b>Progress Toward Meeting Objectives of Permit</b>						
<ul style="list-style-type: none"> <li>The Erosion and Sediment Control Ordinance has been reviewed for compliance with the most current state Erosion and Sediment Control (FY2014) ordinance and updates to this ordinance are in progress. It is anticipated that completion of the ordinance update will occur during Year5 of the permit.</li> <li>A total of <b>767</b> erosion and sediment control inspections were conducted last reporting term, <b>35</b> Notices of Violation, <b>23</b> Notices to Comply <b>1</b> stop work orders.</li> <li>A total of zero exceptions were granted during the fiscal year.</li> <li>The Town employs <b>11</b> staff members that require Erosion and Sediment control certificates. Currently all employees have kept current on their certifications. Two staff members are in the process of achieving certificates because they are new hires.</li> <li>In this reporting year, the Town approved <b>51</b> single family residences and <b>12</b> site plans and subdivisions. A total of <b>32.5</b> acres were disturbed.</li> </ul>						
<b>Proposed Changes to BMP or Measurable Goals</b>						
No changes are proposed to this BMP.						
<b>Next Reporting Period Activities Planned (YEAR 5)</b>						
During the Reporting year 5, all three new staff will achieve their required certifications.						

## B. Respond To Erosion and Sediment Control Complaints

Measurable Goals Identified and Achieved:	Years Planned					Years Achieved
Respond to E&S control complaints	2014	2015	2016	2017	2018	2014 – 2017
Evaluate BMP for Appropriateness and Effectiveness	2015	2016	2017	2018		2015 – 2017
<b>Progress Toward Meeting Objectives of Permit</b>						
The Town received <b>9</b> erosion and sediment control complaints in the past reporting period. All complaints were responded to within 24 business hours of reporting. All concerns were resolved in a timely manner.						
<b>Proposed Changes to BMP or Measurable Goals</b>						
It is recommended that the Town advertise the ESC reporting options to allow for more citizens to have access. We have seen some increase in notification due to increased advertising of our ESC program. We will continue to advertise this service so citizens know who to contact when they see E&S concerns.						
<b>Next Reporting Period Activities Planned (YEAR 5)</b>						
During the Reporting year 5, the Town plans to advertise ESC reporting options to allow greater access for citizens.						

## C. Require Construction Site Operators to Control Waste

Measurable Goals Identified and Achieved:	Years Planned					Years Achieved
Respond to Trash and Debris complaints	2014	2015	2016	2017	2018	2014 – 2017

Evaluate BMP for Appropriateness and Effectiveness	2015	2016	2017	2018	<b>2015 – 2017</b>
<b>Progress Toward Meeting Objectives of Permit</b>					
All trash and debris control complaints were responded to within 24 hours of reporting. Since all debris was cleared immediately, no trash and debris reports were issued.					
<b>Proposed Changes to BMP or Measurable Goals</b>					
None proposed.					
<b>Next Reporting Period Activities Planned (YEAR 5)</b>					
During the Reporting year 5, the Town plans to continue to address debris control on construction sites.					

#### D. Require a VSMP Permit or VSMP Authority Land Disturbance Permit for all Plans

Measurable Goals Identified and Achieved:	Years Planned				Years Achieved
Provide a VSMP comment in site plan review letter to all disturbances >1acre ( <b>ELIMINATED</b> )	2014				<b>2014</b>
Verify VSMP permit coverage at pre-con meeting ( <b>ELIMINATED</b> )	2014				<b>2014</b>
Track all disturbances covered under a VSMP permit	2015	2016	2017	2018	<b>2015 – 2017</b>
Track all disturbances covered under a VSMP Authority permit	2015	2016	2017	2018	<b>2015 – 2017</b>
Evaluate BMP for Appropriateness and Effectiveness		2016	2017	2018	<b>2017</b>
<b>Progress Toward Meeting Objectives of Permit</b>					
All land disturbances over 1 acre is required to obtain a VSMP permit. These site provided confirmation of coverage prior to receiving a land disturbance permit. A total of 12 site plans were approved and only 3 of those required a VSMP permit or was associated with an active VSMP permit. A list of all new VSMP permitted sites is located in Appendix 4-D, VSMP Disturbances and VSMP Authority Permits.					
<b>Proposed Changes to BMP or Measurable Goals</b>					
This BMP has been evaluated and found to be effective. The Town should continue the program of requiring VSMP coverage for all necessary sites prior to plan approval and VSMP Authority land disturbance permit.					
<b>Next Reporting Period Activities Planned (YEAR 5)</b>					
During the Reporting year 5, the Town plans to continue to track projects that require a VSMP permit.					

#### E. E&S Inspection Protocol

Measurable Goals Identified and Achieved:	Years Planned				Years Achieved	
Document schedule for E&S inspections	2014				<b>2014</b>	
Adopt a public mechanism for the promotion and receipt of complaints.	2014				<b>2014</b>	
Outline procedures for use of legal authority to require compliance with the approved plan.	2014				<b>2014</b>	
Document that inspections are performed by certified inspectors	2014	2015	2016	2017	2018	<b>2014 – 2017</b>
Evaluate BMP for Appropriateness and Effectiveness	2015	2016	2017	2018	<b>2015 – 2017</b>	
<b>Progress Toward Meeting Objectives of Permit</b>						
The Town has completed its E&S Inspection Protocol. This plan has been implemented and the frequency for inspections is in compliance with general permit. The plan also outlines our enforcement and plan revision procedures. In addition, the Town has adopted multiple public mechanisms for receipt of complaints regarding regulated land disturbing activities, one is called "At your Request" . This strategy provides opportunities for citizens to voice complaints regarding any issue within the Town. Details and evaluation of this ESC Inspection Protocol are located in Appendix 4-E, ESC Inspection Protocol Summary and Evaluation.						
<b>Proposed Changes to BMP or Measurable Goals</b>						
None proposed.						

**Next Reporting Period Activities Planned (YEAR 5)**

During the Reporting year 5, the Town plans to continue to follow the ESC protocol in its inspection and enforcement process.

**F. Pollution Prevention Plan Enforcement Protocol**

<b>Measurable Goals Identified and Achieved:</b>	<b>Years Planned</b>				<b>Years Achieved</b>
Implement a Pollution Prevention Plan Enforcement Protocol	2015				<b>2015</b>
Perform SWPPP Inspections in compliance with the Pollution Prevention Plan Protocol	2015	2016	2017	2018	<b>2015 – 2017</b>
Document number of SWPPP Inspections performed	2015	2016	2017	2018	<b>2015 – 2017</b>
Evaluate BMP for Appropriateness and Effectiveness	2016			2017	<b>2017</b>
<b>Progress Toward Meeting Objectives of Permit</b>					
The Pollution Prevention Plan Enforcement Protocol was completed in this reporting period. This protocol requires the implementation of controls to prevent non-stormwater discharges to the MS4 such as wastewater, concrete washout, fuels and oils or other illicit discharges. As part of this protocol, the Town has created several guidance documents regarding spill prevention kits and concrete washout areas that are required to be included in every SWPPP document. Inspections and results from the program are documented in Appendix 4-F, Pollution Prevention Plan Enforcement Protocol.					
<b>Proposed Changes to BMP or Measurable Goals</b>					
None proposed.					
<b>Next Reporting Period Activities Planned (YEAR 5)</b>					
During the Reporting year 5, the Town plans to continue to follow the Pollution Prevention Plan Enforcement Protocol.					

## MCM 5: Post Construction Stormwater Management

Develop, implement and enforce a program to reduce the volume and improve the quality of storm water runoff from development with a land disturbance of greater than or equal to 5000 square feet. Additionally, reduction of storm water discharges from construction activity disturbing less than one acre must be included in the program if that construction activity is part of a larger common plan of development or sale that would disturb 5000 square feet or more. Measures described below are intended to meet public outreach and measurable goals as described 9VAC25-890-40, Section II B (5).

### List of Minimum Control Measure #5 BMP's:

- A. Enforce a storm water ordinance designed to control runoff impacts
- B. Implement a long term stormwater maintenance program.
- C. Tracking of all known stormwater management facilities.
- D. Stormwater Facilities Protocol

### Appropriateness of the BMPs:

These BMPs permanently reduce the volume and improve the quality of storm water runoff from development by enforcing permanent stormwater control facilities for all land disturbances of 5000 square feet and greater. The installation and appropriate maintenance of these facilities will trap sediment and pollutants and prevent sediment and bacteria from being transported through the system. Below shows how each of our program plan BMPs addresses the specific impairments of our local waters.

2010 305(b)/303(d) Water Quality Assessment Report – Impairments				
MINIMUM CONTROL MEASURE ONE BMPs	<i>Sediment</i>	<i>Bacteria</i>	<i>Temperature</i>	<i>PCBs</i>
BMP 5.A (Enforce a Stormwater Ordinance)	✓	✓	✓	
BMP 5.B (Implement a SW Maintenance Program)	✓	✓		✓
BMP 5.C (Tracking of SW Management Facilities)	✓	✓		
BMP 5.D (Stormwater Facilities Protocol)	✓	✓		

### A. Enforce a storm water ordinance designed to control runoff impacts

Measurable Goals Identified and Achieved:	Years Planned				Years Achieved
Adopt a Stormwater Ordinance compliant with State Regulations	2014				2014
Review of ordinance for continued compliance with State regulations	2015	2016	2017	2018	2015 – 2017
Evaluate BMP for Appropriateness and Effectiveness	2015	2016	2017	2018	2015 – 2017
Progress Toward Meeting Objectives of Permit					
A revised Stormwater Ordinance was adopted on June 10th, 2014. This ordinance has been reviewed for continued compliance and was found to be in compliance with all parts of 9VAC25-870 of the State stormwater regulations. In the ordinance, the threshold for stormwater was continued at 5000 square feet instead of adopting the state threshold of 1 acre. An evaluation of the stormwater ordinance is located in Appendix 5-A, Review and Evaluation of Stormwater Ordinance.					
Proposed Changes to BMP or Measurable Goals					
None proposed.					

**Next Reporting Period Activities Planned (YEAR 5)**

During the Reporting year 5, the Town plans to continue to comply with the Stormwater Ordinance and State regulations.

**B. Implement a Long Term Stormwater Maintenance Program**

<b>Measurable Goals Identified and Achieved:</b>	<b>Years Planned</b>					<b>Years Achieved</b>
Require a Stormwater covenant prior to plan approval.	2014	2015	2016	2017	2018	<b>2014 – 2017</b>
Inspect private facilities once every five years.	2014	2015	2016	2017	2018	<b>2014 – 2017</b>
Inspect Town facilities every year.	2014	2015	2016	2017	2018	<b>2014 – 2017</b>
Maintain a database of SWM facilities with most recent inspection date.	2014	2015	2016	2017	2018	<b>2014 – 2017</b>
Store inspection and maintenance forms for Town facilities.	2014	2015	2016	2017	2018	<b>2014 – 2017</b>
Evaluate BMP for Appropriateness and Effectiveness		2015	2016	2017	2018	<b>2015 – 2017</b>
<b>Progress Toward Meeting Objectives of Permit</b>						
All new construction stormwater management facilities (26) that have come online in the past reporting year have had recorded stormwater covenants associated with them. They have all been entered into the GIS database and were inspected prior to certificates of occupancy. Twenty-six of the Town owned facilities were inspected this reporting year and fifty (50) private facilities were inspected.						
<b>Proposed Changes to BMP or Measurable Goals</b>						
In the beginning of this reporting period, the Town hired a stormwater inspector. After training was complete in the last reporting period the inspector was able to inspect a large amount of facilities, but working with the owners to get them back into compliance is taking sometime. The inspector is patiently working with apartments, commercial developments and homeowners association to bring these facilities into compliance in a timely fashion.						
<b>Next Reporting Period Activities Planned (YEAR 5)</b>						
During the Reporting year 5, the Town plans to continue inspect private facilities once every five years and municipal facilities every year.						

**C. Tracking of all Known Stormwater Management Facilities**

<b>Measurable Goals Identified and Achieved:</b>	<b>Years Planned</b>					<b>Years Achieved</b>
Collect GPS coordinate for all stormwater infrastructure	2014	2015	2016	2017	2018	<b>2014 – 2017</b>
Add new SWM facilities to infrastructure database	2014	2015	2016	2017	2018	<b>2014 – 2017</b>
Update database with stormwater facility type, latitude and longitude, acres treated, date online, HUC code, impaired stream, public/private, date of last inspection.	2014	2015	2016	2017	2018	<b>2014 – 2017</b>
Evaluate BMP for Appropriateness and Effectiveness		2015	2016	2017	2018	<b>2015 - 2017</b>
<b>Progress Toward Meeting Objectives of Permit</b>						
Through efforts to utilize field collection to map the infrastructure and model the storm drainage network throughout the town, <b>79</b> new construction facilities were added to the database. The database has a total of <b>435</b> stormwater facilities.						
<b>Proposed Changes to BMP or Measurable Goals</b>						
None proposed.						
<b>Next Reporting Period Activities Planned (YEAR 5)</b>						
During the Reporting year 5, the Town plans to continue inspect private facilities once every five years and municipal facilities every year.						

**D. Develop Stormwater Facilities Protocol**

<b>Measurable Goals Identified and Achieved:</b>	<b>Years Planned</b>					<b>Years Achieved</b>
Adopt written policies and procedures to ensure SWM facilities are designed and constructed properly.	2014					<b>2014</b>

Adopt inspection procedures for conducting all public and private facilities.	2014					<b>2014</b>
Identify roles and responsibilities of each Town departments in the management of the facilities.	2014					<b>2014</b>
Evaluate BMP for Appropriateness and Effectiveness		2015	2016	2017	2018	<b>2015 - 2017</b>
<b>Progress Toward Meeting Objectives of Permit</b>						
The Stormwater Facilities protocol has been completed. It includes the policies of plan review, construction and post-construction documentation and inspection procedures for all public and private facilities. The maintenance of all Town stormwater facilities are the responsibility of Public Works and no formal agreement is needed. The summary and evaluation of this BMP is located in Appendix 5-D, Stormwater Facilities Protocol Evaluation.						
<b>Proposed Changes to BMP or Measurable Goals</b>						
None proposed.						
<b>Next Reporting Period Activities Planned (YEAR 5)</b>						
During the Reporting year 5, the Town plans to continue to follow the stormwater facilities protocol.						

## MCM 6: Pollution prevention/Good housekeeping

Develop and implement an operation and maintenance program to prevent or reduce pollutant runoff from municipal operations in to the storm sewer system. Measures described below are intended to meet public outreach and measurable goals as described 9VAC25-890-40, Section II B (6).

### List of Minimum Control Measure #6 BMP's:

- A. Maintenance procedure and scheduling for pollutant reduction in roads, parking lots, and storage yards.
- B. Controls for reducing the discharge of pollutants from publicly maintained areas.
- C. Reduce the amount of solid waste from government facilities by encouraging employees to recycle and by implementing source reduction methods.
- D. Reduce the use of hazardous chemicals where practicable and ensure that all chemicals are stored, handled, used, and disposed of properly.
- E. Develop and implement an operation and maintenance program to prevent or reduce the pollutant runoff from municipal operations and train employees on proper procedures to accomplish pollution prevention objectives.
- F. Turf and Landscape Nutrient Management Plans
- G. Regional Solid Waste Authority Hazardous Waste Collection Event

### **Appropriateness of the BMPs:**

These BMPs serve to reduce the pollutants discharged from municipal areas. Municipalities often have the potential of discharge in their facilities such as park and open space maintenance, fleet and building maintenance, new construction and land disturbances, and MS4 maintenance. This BMP minimizes the likelihood of discharge through education and good housekeeping programs. Below shows how each of our program plan BMPs addresses the specific impairments of our local waters.

2010 305(b)/303(d) Water Quality Assessment Report - Impairments				
MINIMUM CONTROL MEASURE SIX BMPs	<i>Sediment</i>	<i>Bacteria</i>	<i>Temp.</i>	<i>PCBs</i>
BMP 6.A (Pollution Reduction in Road, Parking and Storage)	✓	✓		
BMP 6.B (Reducing Pollutants from Publicly Maintained Areas)	✓	✓		
BMP 6.C (Reduction of Solid Waste from Municipal Facilities)	✓	✓		✓
BMP 6.D (Reduction of Hazardous Chemicals)		✓		✓
BMP 6.E (Developing and Implementing an O&M Program)	✓	✓		✓
BMP 6.F (Turf and Landscape Nutrient Management Plans)		✓	✓	
BMP 6.G (Regional Solid Waste Authority Hazardous Waste Collection)		✓		✓

## A. Maintenance Actions for Pollutant Reduction in Roads, Parking Lots, and Storage Yards

Measurable Goals Identified and Achieved:	Years Planned					Years Achieved
Perform leaf and Christmas tree pickup	2014	2015	2016	2017	2018	2014 – 2017
Perform twice yearly brush and bulk item pickup	2014	2015	2016	2017	2018	2014 - 2017
Daily removal of trash and litter in the Downtown areas	2014	2015	2016	2017	2018	2014 – 2017
Evaluate BMP for Appropriateness and Effectiveness	2015	2016	2017	2018		2015 – 2017
<b>Progress Toward Meeting Objectives of Permit</b>						
In this past reporting year, the Town collected 5.73 tons of Christmas trees, 135.16 tons of street sweeper collection and 942.3 tons of leaves in our municipal pickup operations. The Town has also continued the daily removal of trash and litter in the Downtown areas. This BMP significantly reduces pollution in our roads, parking lots and storage yards. Additionally, by offering the bulk and brush collection service, this reduces the instances of illegal dumping by collecting these items free of charge.						
<b>Proposed Changes to BMP or Measurable Goals</b>						
No changes are intended for this BMP.						
<b>Next Reporting Period Activities Planned (YEAR 5)</b>						
During the Reporting year 5, the Town plans to continue these services as they provide a significant benefit to pollution prevention.						

## B. Controls for Reducing the Discharge of Pollutants in Publicly Maintained Areas

Measurable Goals Identified and Achieved:	Years Planned					Years Achieved
Perform Sanitary Sewer Line Maintenance to reduce clogging	2014	2015	2016	2017	2018	2014 – 2017
Perform Sanitary Sewer Line Upgrades to maintain capacity	2014	2015	2016	2017	2018	2014 - 2017
Continue Managing the Town-Wide recycling Program	2014	2015	2016	2017	2018	2014 – 2017
Maintain Spill Prevention Programs for the Facilities at risk	2015	2016	2017	2018		2017
Maintain Stormwater Pollution Prevention Plans for the Facilities in need		2016	2017	2018		2017
Evaluate BMP for Appropriateness and Effectiveness	2015	2016	2017	2018		2015 - 2017
<b>Progress Toward Meeting Objectives of Permit</b>						
<ul style="list-style-type: none"> <li>The Town performs annual sanitary sewer line cleaning to reduce the amount of root intrusion into the sewer lines and has a proactive sewer lining program to allow older sewer lines to maintain capacity as growth occurs. This allows the sewer line to function without clogging which reduces the instances of overflow into the waterways.</li> <li>In addition, the sanitary sewer is continually studied for areas in need of upgrades to maintain capacity with growth in population. The Northside Pump station expansion project was just completed which will allow capacity for future growth in this residential sector.</li> <li>The Town also manages a Town-wide recycling program for all residential homes and expanded this program to be single-stream for all residential customers.</li> <li>A Spill Prevention Plan has been prepared for the fueling center at Public Works. This has been the only facility identified as in need of one.</li> <li>A Stormwater Pollution Plan has been completed during this reporting period. This SWPPP has been added to the most recent version of the Program Plan.</li> </ul>						
<b>Proposed Changes to BMP or Measurable Goals</b>						

<b>Next Reporting Period Activities Planned (YEAR 5)</b>						
During the Reporting year 5, the Town plans to continue to reduce waste from publicly maintained areas by planning for the installation of BMPs at the Public Works yard.						

### C. Reduce the Amount of Solid Waste from Municipal Facilities

<b>Measurable Goals Identified and Achieved:</b>	<b>Years Planned</b>					<b>Years Achieved</b>
Continue municipal building recycling of co-mingled containers, mixed paper, toner cartridges, electronics, and rechargeable/alkaline batteries.	2014	2015	2016	2017	2018	<b>2014 – 2017</b>
Continue the recycling of oil, antifreeze, tires, and metal at the Public Works and Transit garage.	2014	2015	2016	2017	2018	<b>2014 - 2017</b>
Continue recycling used fluorescent lamps from all facilities.	2014	2015	2016	2017	2018	<b>2014 – 2017</b>
Continue the recycling of electronic equipment and computers through the Purchasing Division and Technology Department.	2014	2015	2016	2017	2018	<b>2014 – 2017</b>
Evaluate BMP for Appropriateness and Effectiveness		2015	2016	2017	2018	<b>2015 - 2017</b>
<b>Progress Toward Meeting Objectives of Permit</b>						
The Town has continued these programs to reduce the amount of waste from government facilities with recycling and implementing source reduction methods.						
<b>Proposed Changes to BMP or Measurable Goals</b>						
The departments that recycle do not currently track the amount being recycled to identify trends or improvements. In future years, the Town would like to begin tracking the amounts of each type of recycled material to identify if programs are being utilized and if they are necessary.						
<b>Next Reporting Period Activities Planned (YEAR 5)</b>						
During the Reporting year 5 and in future years, the Town would like to begin tracking the amounts of each type of recycled material to identify if programs are being utilized and if they are necessary.						

### D. Reduce the Use and Discharge Potential of Hazardous Chemicals

<b>Measurable Goals Identified and Achieved:</b>	<b>Years Planned</b>					<b>Years Achieved</b>
Provide training for all Registered Technicians or Certified Applicators through the State	2014	2015	2016	2017	2018	<b>2014 – 2017</b>
Update the Towns MSDS Management Program	2014	2015	2016	2017	2018	<b>2014 - 2017</b>
Evaluate BMP for Appropriateness and Effectiveness		2015	2016	2017	2018	<b>2015 - 2017</b>
<b>Progress Toward Meeting Objectives of Permit</b>						
All registered technicians and certified applicators have been trained this reporting year, see Appendix 6-D for Details, Evaluation and Recommendations for this BMP.						
<b>Proposed Changes to BMP or Measurable Goals</b>						
The Universal Waste Policy will be incorporated into this BMP next year.						
<b>Next Reporting Period Activities Planned (YEAR 5)</b>						
During the Reporting year 5, the Town plans to continue to keep all staff that apply hazardous chemicals certified as appropriate.						

## E. Develop and Implement an O&M and Training Program to Prevent or Reduce the Pollutant Runoff from Municipal Operations

Measurable Goals Identified and Achieved:	Years Planned					Years Achieved
Develop a Pollution Prevention Program for Municipal Operations	2014	2015	2016	2017	2018	2014 – 2017
Implement the Pollution Prevention Program	2015	2016	2017	2018		2015 – 2017
Evaluate BMP for Appropriateness and Effectiveness	2015	2016	2017	2018		2015 - 2017
Progress Toward Meeting Objectives of Permit						
Outlines for training programs have been developed for the Town Police Department, Fire and Rescue, Public Works Grounds and Fueling and Vehicle Maintenance staff. The following training programs have been completed this reporting period: ESC/SWM training for Engineering staff, Fertilizer, Pesticide and Landscape Materials for Applicators, Operation and Maintenance procedures for Public Works, see Appendix 6-E for Details, Evaluation and Recommendations for this BMP.						
Proposed Changes to BMP or Measurable Goals						
None proposed.						
Next Reporting Period Activities Planned (YEAR 5)						
During the Reporting year 5, the Town plans to continue implement training programs for municipal operations.						

## F. Turf and Landscape Nutrient Management Plans

The operator shall implement turf and landscape nutrient management plans that have been developed by a certified turf and landscape nutrient management planner in accordance with § 10.1-104.2 of the Code of Virginia on all lands owned or operated by the MS4 operator where nutrients are applied to a contiguous area greater than one acre.

Measurable Goals Identified and Achieved:	Years Planned					Years Achieved
Identify all Applicable Lands where Nutrients are Applied – Latitude and Longitude	2014	2015	2016	2017	2018	2014 – 2017
Implement Turf Management Plans to 15% of Lands	2015	2016	2017	2018		2017
Implement Turf Management Plans to 40% of Lands		2016	2017	2018		2017
Implement Turf Management Plans to 75% of Lands			2017	2018		2017
Evaluate BMP for Appropriateness and Effectiveness	2015	2016	2017	2018		2015 – 2017
Progress Toward Meeting Objectives of Permit						
The Town has completed its identification of lands requiring Turf and Landscape Nutrient Management Plans. A total of six sites meet this description. See Appendix 6-F for Details, Evaluation and Recommendations for this BMP.						
Proposed Changes to BMP or Measurable Goals						
None proposed. Nutrient Management plans for all identified properties have been completed. These plans have been added to the update Program Plan.						
Next Reporting Period Activities Planned (YEAR 5)						
During the Reporting year 5, the Town plans to continue to operate our parks and golf course under the recommendations of the approved Nutrient Management plans.						

## G. Regional Solid Waste Authority Hazardous Waste Collection

The Town's Office of Waste Minimization and Recycling employs two full time positions dedicated to addressing municipal solid waste, universal waste, and hazardous waste issues. Staff also addresses employee awareness and community education regarding these topics.

**This BMP has been re-numbered as BMP 1-E.**

**CERTIFICATION STATEMENT AND SIGNATORY REQUIREMENTS  
FOR MS4 PERMIT APPLICATIONS AND REPORTS**

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

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

A person is a duly authorized representative only if:

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

---

**CERTIFICATION**

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



Marc Verniel, Town Manager

9/29/17

Date

VAR 040019

Permit Number

Town of Blacksburg

MS4 Name

**TOWN OF BLACKSBURG STORMWATER MANAGEMENT  
PROGRAM**

**VPDES PERMIT NO. VAR 040019**

**YEAR 4 ANNUAL REPORT**

**Appendices**



**Coverage Issued: July 1, 2013**

**Reporting Period: July 1, 2016 through June 30, 2017**

**Contact: Kafi Howard, Town Engineer**

**Date: October 1, 2017**

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## **Appendix 1: Public Education and Outreach**



Town of Blacksburg Engineering and GIS Department  
 400 South Main Street  
 Blacksburg, VA 24060  
 (540) 961-1124

## OUTREACH ACTIVITY SUMMARY: Implementation of the Public Education and Outreach Plan 2017

The Town has developed a public education and outreach plan (PEOP) to coordinate all outreach efforts into one campaign. This plan has identified three high-priority issues that affect the Town of Blacksburg. Below are the results of the PEOP efforts for the reporting year 2016.

Homeowners & Families – 28,326 /13,162 **(100%)**; Young Residents – 41,280 /17,474 **(100%)**; Restaurant Employees – 300/300 **(100%)**

Activities with Outreach Components	Target Issue	Target Group	# Impacted
SC.D (Enhance the PEOP and Employee Training to Address Reducing WLAs)		Employees	-
SC.E (Assess all Significant Sources of Pollutants from Municipal Facilities)	Bacteria & Sediment	Employees	-
BMP 1.A (Public Education and Outreach Plan) –			-
Harding Avenue Elementary Stream Field Trip (5/12/2017)	Bacteria & Sediment	Homeowners & Families	45
The Big Event (4/8/2017)	Sediment	Young Residents	890
New River Valley Home Builders Expo (3/10/17)	Bacteria and Sediment	Homeowners & Families	157
Homebuilders Breakfast (9/20/16)	Sediment	Local Engineers & Builders	-
Bioretention Owner Flyer (3/27/17)	Bacteria and Sediment	Homeowners & Families	40
Steppin' Out 2016 (8/5&6/2016)	Bac, Sed & Gr.	Homeowners & Families	369
Montgomery County Stormwater Day (4/12/17)	Bac, Sed & Gr.	Homeowners & Families	250
BMP 1.B (Storm Drain Marking Program)	Bac, Sed & Gr.	Restaurant Employees Young Residents Homeowners & Families	300 40,000 25,500
BMP 1.C (Demonstration Projects Enh)			
Practicing Sustainability Class (2/7/2017)	Bacteria	Young Residents	21
16 Frogs Freshwater Heritage Tour	Sediment	Homeowners & Families	8
BMP 1.D (HHHW)	Sediment	Homeowners & Families	360
BMP 1.E (Grease Program Enforcement)	Oil and Grease	Restaurant Employees	300
BMP 1.F ( Illicit Discharge Education)	Bac, Sed & Gr.	Homeowners & Families	1765
BMP 1.G (Town Stormwater Page Maintenance)	Bac, Sed & Gr.	Restaurant Employees Young Residents Homeowners & Families	- - -
BMP 2.A (Stakeholder Meetings)	Sediment	Homeowners & Families	176
BMP 2.B (TMDL Implementation Planning and Participation)	Bac, Sed & Gr.	Restaurant Employees Young Residents Homeowners & Families	- - 25
BMP 2.C (Participate and support stream clean-up efforts)	Bacteria & Sediment	Young Residents Homeowners & Families	- -
BMP 2.D (Posting of Program Plan and Annual Reports online)	Bac, Sed & Gr.	Restaurant Employees Young Residents Homeowners & Families	- - -
BMP 2.E (Outreach Event Participation)	Bac, Sed & Gr.	Restaurant Employees Young Residents Homeowners & Families	300 (total) 41,280 (total) 28,326 (total)

**TMDL POC: Oil & Grease, Bacteria and Sediment**

**Evaluation:**

This program has been evaluated for appropriateness and effectiveness in reaching the water quality goals of the community.

- The Public Education and Outreach Plan is an effective way to target specific goals to the target groups that have the most impact in the pollutants of concern.
- The current program effectively reached out to the Restaurant community and the Homeowners and Families, getting 100% of those target audiences.
- The current program has a variety of options and even though not all of the individual events were completed, the Town was successful in meeting target audiences. This type of program provides flexibility to the municipality and variation in the types of outreach that is offered each year. The goal is to keep citizens interested in listening to the message so that they are open and receptive to future messages.

**Recommendation:**

The Town should continue to provide a coordinated effort to provide a variety of stormwater outreach efforts that target different message groups and issues.



**Town of Blacksburg Engineering and GIS  
Department**  
400 South Main Street  
Blacksburg, VA 24060  
(540) 961-1124

## **OUTREACH ACTIVITY SUMMARY: Student Storm Drain Marking 2017**

The Big Event on April 8, 2017 gathers students to perform various outreach and educational activities. The Town recruits several groups of students to mark storm drains in areas designated as high traffic student areas. These areas may be apartment complexes, student recreational areas or public areas frequented by the student populace. These locations are entirely within the Town of Blacksburg and are not located on campus.

### **About this Event**

This event was successful and two teams of students marked the storm drains of two student focused large apartment complexes. The total number of storm drains marked was 57. One of the apartment complexes allowed our group to send an email flyer to all of the residents of the complex during this event which expanded our outreach audience to 890.

**Students Impacted:** 890

**Watershed:** Stroubles Creek

**TMDL POC:** Sediment

### **Evaluation:**

This program has been evaluated for appropriateness and effectiveness in reaching the water quality goals of the community.

- The storm drain markings are a clear reminder that the inlets go directly to the stream and provide a disincentive to allow non-stormwater discharges.
- The walking areas in the student communities are heavy trafficked due to high volumes of students taking mass transit (bus service) to the university.
- Students who are engaged in water quality will advocate to friends and family.

### **Recommendation:**

- A better understanding of the number of impacted students needs to be gained. A review of studies on similar impacts should be performed so that a better understanding of the estimated impact is attained.
- More student gathering areas should be marked to increase the percentage of the target group that is impacted by this BMP.
- Alternate days should be scheduled in case the Big Event is cancelled due to weather conditions.





**Town of Blacksburg Engineering and GIS  
Department**

400 South Main Street  
Blacksburg, VA 24060  
(540) 961-1124

**OUTREACH ACTIVITY SUMMARY: Tour of the Blacksburg Motor Company 2017**

The Town Stormwater Engineer performed one tour of the Blacksburg Motor Company Site in this reporting period and one Tour of the Downtown Freshwater Heritage. The class tour occurred on February 7, 2017 and the Heritage tour was held on April 11, 2017. The Blacksburg Motor Company building was restored using Leadership in Energy and Environmental Design (LEED) principals, and the project team considered sustainability in every design and construction decision. As a result, the town has achieved a Platinum LEED certification (26kb pdf), the highest level achievable.

The building serves as the home to the Town of Blacksburg Planning and Building, and Engineering and GIS departments. In addition, the site and structure illustrate green building and low impact development techniques throughout.

The Freshwater Heritage Tour of downtown Blacksburg highlighting the important history of our natural waterways. The tour follows old trails and streams to get a better understanding of why the 16 squares of Blacksburg was founded in this area and the importance of the local freshwaters had on that founding.



**About this Event**

This facility and tour is used as an educational resource to show the community the benefits of environmental site design, historic preservation and stormwater management. These tours are provided upon request and are not initiated by the Town.

**Students Impacted:** 21

**Homeowners and Residents Impacted:** 8

**Watershed:** Stroubles Creek

**TMDL POC:** Sediment

**Evaluation:**

This program has been evaluated for appropriateness and effectiveness in reaching the water quality goals of the community.

- The educational value of an applied use of environmental site design in a historic and aesthetic context is valuable to illustrate these concepts to the community and young student body and residents.

**Recommendation:**

Continue to provide tours upon request.



Town of Blacksburg Engineering and GIS  
Department

400 South Main Street  
Blacksburg, VA 24060  
(540) 961-1124

## OUTREACH ACTIVITY SUMMARY: Household Hazard Waste Events 2017

The Town of Blacksburg collaborates with Montgomery County and the Town of Christiansburg to provide a permanent Household Hazardous Waste facility that will accept residential waste on a monthly basis, on the 3<sup>rd</sup> Saturday of the month.

### Acceptable Items at Monthly Collection Events

The following items are accepted at monthly collection events, with limitations of 75 pounds of solids and 5 gallons of liquids:

Cleaning Products	Insecticides
Bleach	Pesticides
Degreasers	Weed killers
Drain cleaners	Wood preservatives / fungicides
Oven cleaners	Aerosol cans
Pool chemicals	Gas / oil mixtures
Toilet cleaners	Home-heating oil
Tub / tile / shower cleaners	Kerosene
Wood and metal cleaners / polishes	Lighter fluid
Aerosol cans	Nail polish removers
Workshop / Painting Supplies	Propane tanks/cylinders (1 to 20 lbs)
Adhesives and glue	Air-conditioning refrigerants
Fixatives and other solvents	Antifreeze
Furniture strippers	Automotive batteries
Oil or enamel-based paint	Carburetor and fuel injector cleaners
Latex paint	Fuel additives
Paint strippers and removers	Gasoline / diesel fuel
Paint thinners and turpentine	Motor oil
Photographic chemicals	Starting fluids
Stains and finishes	Transmission and brake fluid
Indoor Pesticides	Light bulbs - Fluorescent and incandescent
Ant poisons	Metallic mercury
Cockroach poisons	Pool / spa chemicals
Flea repellants	Mercury-containing thermostats
Household insecticides	Mercury thermometers
Moth repellants	
Mouse and rat poisons	
Batteries	
Alkaline / Zinc Carbon Batteries	
Rechargeable Lithium Ion (Li-ion) batteries	
Rechargeable Nickel Cadmium (Ni-Cd) batteries	
Rechargeable Nickel Metal Hydride (Ni-MH) batteries	
Rechargeable, small-sealed lead acid batteries	
Lead acid automobile batteries	
Driveway Sealer	
Fertilizer	
Herbicides	

The following materials are not accepted at Montgomery Regional Solid Waste Authority residential HHW events:

- Asbestos material – Contact us for disposal assistance
- Biologically active or infectious material
- Explosive material (including ammunition)
- LPG/propane gas tanks larger than 20 lbs
- Other large commercial compressed gas cylinders (ie oxygen, nitrogen, CO2)
- Radioactive material
- Prescription drug medications

### **About this Event**

This facility is used as a resource to provide a safe and environmentally responsible way to dispose of common household hazardous wastes. Twelve events are held per year, once a month. This year, the December event was snowed out, so these totals are from eleven events. A total of 2795 gallons of fluids and 49 boxes of material were collected.

**Family Target Group Impacted: 360\*** This is an estimate based on the the assumption that two residents were in each cars served and the percentage of total County residents that live in the Town of Blacksburg (45%).

**Watershed:** Stroubles Creek and Roanoke River

**TMDL POC:** Sediment and Bacteria

### **Evaluation:**

This program has been evaluated for appropriateness and effectiveness in reaching the water quality goals of the community.

- The safe and environmentally responsible disposal of common household hazardous materials will reduce the occurrence of unlawful disposal of materials.
- The numbers of Towns person utilizing this service is low as compared to the total household population (2%). Increasing the usage of this service would improve illicit discharges and unlawful disposal of materials in landfills.

### **Recommendation:**

- Continue to provide monthly household waste days.
- Incorporate advertisement of the household waste days into the Public Education and Outreach Campaign.

## Appendix 1.E – Grease Program Enforcement Summary and Evaluation



Town of Blacksburg Engineering and GIS Department  
400 South Main Street  
Blacksburg, VA 24060  
(540) 961-1124

### OUTREACH ACTIVITY SUMMARY: Grease Program Education 2017

The Town has identified food service businesses that use or generate grease and/or oils as a target group. These businesses are targeted for education and outreach concerning BMPs that address the handling, storage and disposal of grease and oils. The Town also maintains a database of violations that is utilized in the geographical informational systems to track trends in the system.

#### About this Event

During this reporting year, a copy of the Stormwater Best Management Practices for Restaurants was sent out to the 88 restaurants in Blacksburg. As part of our target audience, restaurants are notorious for performing illicit discharges through the mishandling of wash waters, cleaning equipment and the large amounts of grease and cooking oil that is produced. The Town targets these establishments to provide education prior to a discharge into the MS4 system.

**People Impacted:** 88 establishments (300 workers)

**Watershed:** Stroubles Creek and Roanoke River

**TMDL POC:** Sediment and Bacteria

#### Evaluation:

This program has been evaluated for appropriateness and effectiveness in reaching the water quality goals of the community.

- Fueling centers and auto repair shops regularly handle oil and grease. These facilities have a high risk for spillage and accidental discharges.
- This activity helps in the education of the employees of these facilities so that the numbers and impacts of oil and fuel spills are reduced.

#### Recommendation:

- Continue to provide education and enforcement for grease, oil and fuel.

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### Best Management Practices for Commercial Businesses and Restaurants

Cleaning Dumpster Areas, Loading Docks, and Pavement  
Dry sweep and place debris in trash.  
If wet cleaning, clean with rags, use absorbents to collect residue then sweep and dispose of in trash.  
Mop and dispose of water in sinks or drains connected to sanitary sewer.  
Make sure dumpster lids remain closed and grease and oil containers are sealed and covered. Routinely check for leaks.

Cleaning Equipment, Floor Mats, Filters, Etc.  
Do not clean outdoors or in a place that wash water may enter a storm drain.  
Clean equipment inside in an area that has a drain connected to sanitary sewer.

Grease Handling  
Restaurant grease should be carefully placed in containers, then disposed of properly. Use a grease trap or approved container.  
**Never pour grease in the storm drains or sink drains.**

Landscaping Maintenance  
Schedule landscaping projects during dry times to limit runoff  
Collect leaves, grass clippings, etc. and place in trash  
Limit pesticide, herbicide, and fertilizer use. Apply during dry times to avoid toxic runoff

Pressure Washing  
Prevent wash water from pressure washing from entering storm drain. Contain wash water if using chemicals or soap

Blacksburg Town Ordinance prohibits non-storm water discharge to storm drains, streams, and creeks. If you have questions please call James Higgins, Water Resources Inspector.

Storm Drains flow directly without treatment to local waterways. To help protect our streams and rivers we have included a list of best management practices to limit pollution (grease, oils, chemicals, trash, food, etc.) from entering the storm drain system.  
**REMEMBER NO DUMPING INTO THE STORM DRAINS!**

Water Quality Questions?  
Contact: James M. Higgins

Town of Blacksburg  
300 South Main Street

Phone: 540-961-1887  
Fax: 540-951-0672  
E-mail: jhiggins@blacksburg.gov



Town of Blacksburg Engineering and GIS Department  
 400 South Main Street  
 Blacksburg, VA 24060

## Outreach Activity Summary and Evaluation: Illicit Discharge Education 2017

This reporting period, the Town sent out the Stormwater Best Management Practices for Residential Neighborhoods flyer to the Citizens Alert system within the County. This flyer provides useful information regarding stormwater best management practices with auto repair, car washing, and petwaste. The audience of the Citizens Alert system has approximately 3922 recipients, most of whom are homeowners and families.

**People Impacted: 1765 recipients** (3922 total recipients of which 1765 are Town residents based on a 45% population ration of the County)

**Target Audience:** Homeowners & Families

**Watershed(s):** Stroubles Creek, Roanoke River, Toms Creek

**TMDL POC:** Sediment and Bacteria

### Evaluation:

The Illicit Discharge for Residential Neighborhoods education is found to be an effective method of educating the homeowners and families about illicit discharges.

### Recommendations:

It is recommended that the Town continue to send out a variety of information regarding illicit discharges to target audiences.

**Home Auto Repair Best Management Practices**

If you do your own auto or home equipment repairs use these proper practices for any oil, grease or fuel that may spill.

- Never wash this waste with water. Water will only channel the waste into the storm drain system and ultimately into the stream.
- Use cat litter to absorb any spills.
- Use a broom or a shop vac for excess litter debris cleanup.
- Save the debris in a safe container and discard on a Hazardous Waste Cleanup event.
- Be sure to recycle your used motor oil.

For Household Hazardous Waste drop off dates and times, please contact the Montgomery County Solid Waste Authority at (540) 381-2820 ext. 300.

**MORE QUESTIONS?**

**Contact :**  
 The Town of Blacksburg  
 Engineering and GIS Department  
 400 S Main St.  
 Blacksburg, VA 24062

**Phone:**  
 (540) 961-1126

**Email:**  
 stormwater@blacksburg.gov

**Web:**  
[www.blacksburg.gov/stormwater](http://www.blacksburg.gov/stormwater)

**Grease Discharges:**  
 James M. Higgins  
 Water Resources Inspector  
 (540) 961-1887  
 jhiggins@blacksburg.gov

**Suspected Illegal Dumping:**  
 David Darnell  
 Code Inspector  
 (540) 558-0716  
 ddarnell@blacksburg.gov

**Emergencies:**  
 Fire & Rescue Department  
 Call 911

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**Storm Water Best Management Practices for Residential Neighborhoods**

**TIPS FOR PREVENTING POLLUTION**

**What are Best Management Practices?**

Best Management practices are the best way to prevent pollution when you are cleaning, doing yard work, or other outdoor activities you may do around the house.

Some Examples Are:

- Car Washing
- Handling Pet Waste
- Repair Work

Just to name a few.

Storm Drains flow directly to local waterways without treatment. To help protect our streams and rivers we have included a list of best management practices to limit pollution (grease, oils, chemicals, trash, food, etc.) from entering the storm drain system.

**REMEMBER, PLEASE DO NOT DUMP INTO THE STORM DRAINS!**

**Pet Waste Best Management Practice Suggestions**

- Be sure to pick up after your pet. Pet waste contains bacteria which can pollute waterways.
- Use a pooper scooper to clean your yard regularly.
- Be sure to dispose of pet waste bags with your household trash (don't flush in the toilet).
- When walking your dog check to make sure you have plenty of pet waste bags on hand.
- Don't allow your dog the opportunity to urinate or defecate in the creeks or streams
- Take advantage of pet waste disposal stations at local parks and trails.
- Be a good example and educate your neighbors with these best management practices.

**Automobile Washing Best Management Practices**

- When washing your automobile try to avoid letting the wash water drain to the storm system.
- Wash vehicle on a flat grassy surface so the wash water infiltrates into the ground. Be sure to move your vehicle off the grass when you are finished.
- If you use a soapy bucket dispose of suds in a utility sink or any other sink connected to the sanitary sewer system.
- Create a berm or other type of containment system to allow wash water to evaporate.

Wash water, even without suds, can have a negative impact on the downstream water quality. The oils, grease, and fuels that wash off our vehicles will impair our waterways.

## Appendix 1-G: Stormwater Webpage Summary and Evaluation



Town of Blacksburg Engineering and GIS Department  
400 South Main Street  
Blacksburg, VA 24060  
(540) 961-1124

### Outreach Activity Summary and Evaluation: Stormwater Webpage 2017

Stormwater related information is available on the Town's website for the general public at [www.blacksburg.gov/stormwater](http://www.blacksburg.gov/stormwater). This webpage gives general information about stormwater, the MS4 program, the Town's stormwater utility and information regarding the Town's administration of the state VSMP permit.

There is a section regarding the MS4 permit which provides links to the Program Plan and all annual reports of this permit cycle. There is also a contact for questions and requests for copies of the Program Plan.

There is also a detailed section regarding the TMDLs for the watersheds within the Town's jurisdiction; there are four. At each title of the TMDL, a link has been provided to download the body of the TMDL document should a citizen want more information regarding the condition of the Town's streams.

Additionally, there are links to the Town's Erosion and Sediment Control webpage, the NFIP and floodplain development and information on the Town's wastewater system.



#### About this BMP

This webpage is used as an educational resource to show the community the challenges and benefits of stormwater management. It provides an email and phone number of the Town's Stormwater Engineer for questions or comments and provides information regarding the Town's MS4 program and policies.

**People Impacted:** Unknown

**Watershed(s):** Stroubles Creek, Roanoke River and Toms Creek

**TMDL POC:** Sediment and Bacteria

#### Evaluation:

The website has been evaluated for appropriateness and effectiveness in reaching the water quality goals of the community. The findings are below:

- The website content is appropriate and consistent with the Town's water quality goals.
- The effectiveness cannot be evaluated at this time due to a lack of statistical information on the usage of the site.
- It is recommended that statistics be gathered regarding the website usage, at best on a page by page basis. Additionally, providing some correlation to the total usage and the target audiences will aid in the future evaluation of the effectiveness of this BMP.

## **Appendix 2: Public Involvement and Participation**

**Appendix 2-A: Conduct Stakeholder Meetings for Watershed Management and Stormwater Quality Improvements**



**Town of Blacksburg Engineering and GIS Department**  
 400 South Main Street  
 Blacksburg, VA 24060

**Public Participation Summary: Stormwater Stakeholder Meetings 2017**

One of the many ways to increase public notice, involvement and participation in the Town’s stormwater program is to conduct Stakeholder Meetings for Watershed Management and Stormwater Quality Improvement. These meetings can be any interaction with citizens and other stakeholders that have the desire to understand and improve the stormwater conditions of the Town of Blacksburg.

Within the Town, many citizens are well aware of stormwater concerns as related to new development. Below is a list of community meetings for new development projects where stormwater issues were discussed. These comments were recorded by Town staff and are considered when the review of the new development plan is completed.

<b>Neighborhood Meetings for New Development Projects</b>	07/05/17	MARLINGTON STREET TOWNHOMES	8
	09/22/16	SITE #1 LOFTS AT BLACKSBURG	44
	09/22/16	SITE #2 LOFTS AT BLACKSBURG	44
	11/09/16	STURBRIDGE SQUARE PRD REZONING	18
	04/26/17	UPTOWN VILLAGE REZONING	10
	05/23/17	STADIUM VIEW PRD REZONING	35
	06/29/17	STONEGATE APARTMENTS II	9
<b>Total:</b>			<b>168</b>

Additionally, other meetings with neighborhood groups or other stormwater professionals that allow input to be provided to Town officials are also listed below. All of these avenues of contact allow input and education to improve the stormwater program run by the Town of Blacksburg.

2/14/2017	Regional MS4 Coordination Meeting	8
-----------	-----------------------------------	---

**About this BMP**

These meetings succeed in increasing public involvement and participation in the Town’s stormwater program. Participation and citizen support for stormwater measures increases citizen advocacy and provides for more successful stormwater program.

**Target Audience Impacted:** 176 Homeowners and Families

**Watershed(s):** Stroubles Creek, Roanoke River and Toms Creek

**TMDL POC:** Sediment and Bacteria

**Evaluation:**

The stakeholder meetings have been evaluated for appropriateness and effectiveness in reaching the water quality goals of the community. The findings are below:

- The meeting topics are appropriate and consistent with the Town’s water quality goals.
- One on one contact increases the effectiveness since two-way interaction guarantees an active and not passive audience.
- The main challenge for these stakeholder meetings is the small amount of people that are impacted by these one-on-one opportunities.

**Recommendations:**

- It is recommended that the Town organize larger events that allow additional opportunities for interaction.



Town of Blacksburg Engineering and GIS Department  
 400 South Main Street  
 Blacksburg, VA 24060

**Public Participation Summary: TMDL Implementation Activities 2017**

One of the many ways to increase public notice, involvement and participation in the Town’s local TMDLs and their Implementation plans is to attend Stakeholder Meetings so all pertinent information can be communicated to the community. These meetings are often initiated by the Department of Environmental Quality, and they provide many opportunities for interaction with citizens and other stakeholders that have the desire to improve the stormwater conditions of the Town of Blacksburg and meet the requirements of the TMDLs.

TMDL Implementation Planning and Participation (Events)		
5/9/2017	New River PCB Technical Advisory Committee Meeting	25

**About this BMP**

These meetings succeed in increasing public involvement and participation in the Town’s TMDL Implementation plans. Participation and citizen support for stormwater measures increases citizen advocacy and provides for more successful TMDL program.

**People Impacted:** 25

**Watershed(s):** Stroubles Creek and Toms Creek

**TMDL POC:** PCB

**Evaluation:**

The TMDL meetings have been evaluated for appropriateness and effectiveness in reaching the water quality goals of the community. The findings are below:

- The meeting topics are appropriate and consistent with the Town’s water quality goals.
- One on one contact increases the effectiveness since two-way interaction guarantees an active and not passive audience.
- The main challenge for these stakeholder meetings is the small amount of people that are impacted by these one-on-one opportunities.

**Recommendations:**

- It is recommended that the Town provide its own TMDL meetings to support those initiated by DEQ. This may impact a greater number of target audience.



## Appendix 2-E: Outreach Event Participation Summary and Evaluation



Town of Blacksburg Engineering and GIS Department  
400 South Main Street  
Blacksburg, VA 24060

### Public Participation Summary: 2017 Outreach Event Participation

#### About this BMP

The town will continue public outreach efforts by sponsoring or participating in at least four annual events. If additional events need to be added, these will be included in revisions to the Program Plan. Below are the events participated in this reporting period.

- "Steppin' Out" event (August 5<sup>th</sup> and 6<sup>th</sup>, 2015): A watershed informational booth is set up to engage the public on local water quality issues.
- The New River Valley Homebuilders Association Expo is an event where an informational booth is set up to engage the community on how homeowners may positively impact stormwater quality.
- The Big Event engages student volunteers from the local university to provide service efforts throughout Blacksburg.
- Montgomery County Stormwater Day held on April 12, 2017 is an event that engages middle school students from across the County in helping them understand water quality in our region.



#### People Impacted: 1666

Event	Target Audience	#
<b>Steppin' Out</b>	Homeowners	369
<b>Home Expo</b>	Homeowners	157
<b>The Big Event</b>	Students	890
<b>Stormwater Day</b>	Students	250

**Watershed(s):** Stroubles Creek

**TMDL POC:** Sediment and Bacteria, Oil and Grease

#### Evaluation:

The Outreach Event Participation BMP has been evaluated for appropriateness and effectiveness in reaching the water quality goals of the community. The findings are below:

- The participation in these events is appropriate and consistent with the Town's water quality goals.
- Participatory activities such as these raise awareness and result in behavioral change.
- The main challenge for these events is the small amount of people that are impacted by these one-on-one opportunities.

#### Recommendation:

- It is recommended that the Town collaborate with other localities to enhance outreach events and expand participation across the region.

## **Appendix 3: Illicit Discharge Detection and Elimination**



Town of Blacksburg Engineering and GIS Department  
 400 South Main Street  
 Blacksburg, VA 24060  
 (540) 961-1124

**Illicit Discharge and Detection Activity: Storm Drain System Map 2017**

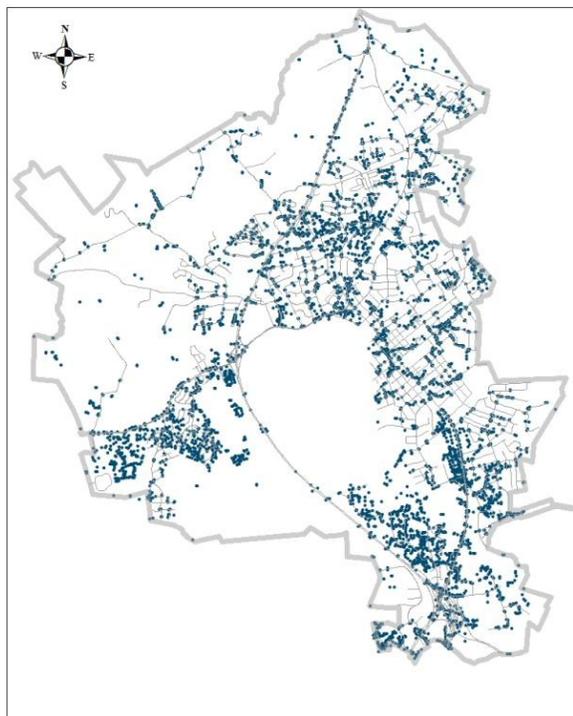
The Town has been working with the Virginia Tech Civil Engineering Department to inventory and update the storm sewer system within the Town, including stormwater management facilities.

**About this Activity**

During this reporting period, a total of 6,977 structures are recorded in our storm sewer drain GIS map. There have been 43 additional structures since last reporting year. A total of 6921 channels are also included in the map this reporting year. The Town also mapped 3 new outfalls associated with new construction.

**Watershed:** Stroubles Creek, Toms Creek & Roanoke River

**TMDL POC:** Sediment, Bacteria & PCBs



Town of Blacksburg  
 Storm Drains Mapped as of the 2015-16 Reporting Period

**Mapped Outfalls:**

Outfall ID	MS4	Comment	lat	lon	Acreage	HUC	Watershed
187	Y	Existing; 6'x9' culvert	-80.4652	37.2103	96.94	NE60	Stroubles Creek
188	Y	new; pipe size 24	-80.4659	37.2078	12.42	NE60	Stroubles Creek
189	Y	new; pipe size 24	-80.4490	37.2071	6.51	NE60	Stroubles Creek

**Evaluation:**

This program has been evaluated for appropriateness and effectiveness in reaching the water quality goals of the community.

- The informative value of a complete map of the storm sewer system is valuable in the discovery of illicit discharges, the understanding of the storm drain system and in the planning for future BMPs for TMDL Action Plan implementation.

**Recommendation:**

- Continue to GPS and update new storm water infrastructure and incorporate this information into the overall storm structure database.

## **Illicit Discharge and Detection Activity: Illicit Discharge Protocol and Procedures 2017**

During the previous permit cycle, the Town contracted Virginia Tech to conduct illicit discharge inspection following the Town's Illicit Discharge Protocol and Procedures. These procedures are based upon the departments recommended publication entitled "Illicit Discharge Detection and Elimination: A Guidance Manual for Program Development and Technical Assessments," completed on April, 2008. The Towns Protocol and Procedures outlines how the identification of outfalls are to be performed, how the sampling shall be provided, how reporting shall occur and when enforcement is necessary. In addition, the Town keeps a database of all illicit discharge sampling and identified illicit discharges for our record keeping.

### **About this Activity**

All illicit discharge scheduling, identification, elimination and enforcement has been in conformance with this protocol. Last reporting year, the Town screened 51 outfalls, which is 26% of the total number of outfalls (189). There were no illicit discharges discovered during this year's outfall reconnaissance inventory.

**Watershed:** Stroubles Creek, Toms Creek & Roanoke River

**TMDL POC:** Sediment, Bacteria, Oil & Grease

### **Evaluation:**

This program has been evaluated for appropriateness and effectiveness in reaching the water quality goals of the community.

- Providing for standard procedures for the scheduling, identification and elimination of illicit discharges provides a training protocol for staff and private businesses.
- A standard procedure for identification of common illicit discharges allows for a quicker turnaround between discovery and elimination and a standardized enforcement method provides a framework for better and more consistent enforcement of the illicit discharge program.
- The Illicit Discharge Detection and Elimination Protocol has been added to the Program Plan document.



### **Recommendation:**

- Continue to follow the Illicit Discharge Protocol in all inspections, identifications and eliminations of illicit discharge.
- Continue to provide information for identification of more types of illicit discharge as staff will need to be trained in additional types of illicit discharge.

Time	Date	#	Material	Shape	Type	Dim	Land Use	Submerged	Flow?	Volume?	Illicit	Comments
9:51	4/11/2017	104	Corrugated	Circle	Outfall	18	Suburban	No	No	0	No	
9:13	4/11/2017	118	Corrugated	Circular,single	Outfall	24	Suburban	No	No	0	No	
9:08	4/11/2017	119	Corrugated	Circle	Outfall	15	Suburban	No	No	0	No	Covered in leaves, had to dig around to find
9:57	4/11/2017	120	Corrugated	Circle	Outfall	15	Suburban	No	No	0	No	Half buried in the ground, covered with
9:52	4/11/2017	3	Corrugated	Circular,single	Outfall	18	Suburban	No	No	0	No	
9:43	4/11/2017	5	Concrete	Circular,single	Outfall	60	Suburban	No	No	0	No	
10:15	4/11/2017	85	Corrugated	Circle	Other	30	Suburban	No	No	0	No	Three pipes. channel erosion
10:06	4/11/2017	86	Corrugated	Circle	Metal	24	Suburban	No	No	0	No	Evidence of channel erosion
9:48	4/11/2017	147	Corrugated	Circular,single	Outfall	18	Suburban	No	No	0	No	
9:28	4/11/2017	149	Corrugated	Circle	Outlet	4	Suburban	No	No	0	No	Pipe aimed upward. very small
10:09	4/11/2017	204	Corrugated	Circular,single	Outfall	18	Open Space,	No	Yes	0	No	Very small flow, clear water
9:21	4/11/2017	207	Concrete	Circular,single	Outlet	36	Other:Apartments	No	No	0	No	Outlet from detention.
9:47	4/11/2017	237	Corrugated	Circle	Outlet	18	Suburban	No	No	0	No	Gravel in pipe.. pond water dyed blue
9:36	4/11/2017	1700	Corrugated	Circle	Outlet	36	cow pasture	No	No	0	No	Eroded bank
9:55	4/11/2017	1701	Corrugated	Circle	Outfall	15	Suburban. Open	No	No	0	No	Adjacent to three 42 inch pipes. Not
10:04	4/11/2017	1702	Corrugated	Circle	Outfall	24	Suburban	No	No	0	No	Two 24 inch outfalls. Looks new. Not on
14:11	2/24/2017	1732	Concrete	Circle	Concrete	24	Research and	Yes	No	0	No	Stable into wetlands downstream.
14:21	2/24/2017	1733	Concrete	Circle	Concrete	30	Research and	Yes	Yes	1	No	
14:30	2/24/2017	1734	Smooth	Circle	EndWall	21	Research and	No	No	0	No	Stable into channel downstream.
15:03	2/24/2017	1735	Concrete	Circle	Outfall	24	Industrial park	No	No	0	No	Very clogged and covered. Needs to be
9:00	6/12/2017	1703	Corrugated	Circle	Outfall	36	Suburban	No	No	0	No	Stable, no erosion.
9:09	6/12/2017	1704	Concrete	Circle	Outfall	12	Suburban	No	No	0	No	No visible erosion.
9:38	6/12/2017	1705	Corrugated	Circle	Outfall	24	Suburban	No	No	0	No	Visible signs of erosion. Corrugated metal is
9:43	6/12/2017	1706	Smooth	Circle	Outfall	12	Suburban	No	No	0	No	No major erosion.
9:49	6/12/2017	1707	Other	Circle	Other	8	Suburban	No	No	0	No	Bridge downspout. Stable.
10:02	6/12/2017	1708	Smooth	Circle	Outfall	12	Suburban	No	No	0	No	No erosion. Cat present in pipe.
10:20	6/12/2017	1709	Corrugated	Circle	Metal	36	Suburban	No	No	0	No	Partially blocked. No signs of erosion.
10:28	6/12/2017	1710	Smooth	Circle	Plastic	30	Suburban	No	No	0	No	Stable. Rip rap end treatment.
10:38	6/12/2017	1711	Corrugated	Circle	Outfall	15	Suburban	No	No	0	No	Through retaining wall. Stable.
10:47	6/12/2017	1712	Corrugated	Circle	Outfall	15	Suburban	No	No	0	No	Partially blocked.
10:53	6/12/2017	1713	Concrete	Circle	Concrete	18	Suburban	No	No	0	No	Bottom was moist, but no visible flow.
11:09	6/12/2017	1714	PVC	Circle	Outfall	8	Suburban	No	Yes	1	No	Spring fed?
11:15	6/12/2017	1715	Corrugated	Circle	Outfall	15	Suburban	No	No	0	No	Very eroded. Needs rip rap.
11:23	6/12/2017	1716	Corrugated	Circle	Outfall	15	Suburban	Yes	Yes	0	No	No erosion present. Discharge directly into
11:38	6/12/2017	1717	Smooth	Circle	Outfall	12	Commercial	No	No	0	No	Discharges directly to stream.
11:52	6/12/2017	1718	Smooth	Circle	Outfall	15	Research and	No	No	0	No	Minor erosion at outlet.
11:57	6/12/2017	1719	Concrete	Circle	Outfall	15	Research and	No	No	0	No	Stable.
5:40	6/12/2017	1720	Smooth	Circle	Outfall	12	Church	No	No	0	No	Eroded. Makeshift reinforcement.
5:51	6/12/2017	1721	Concrete	Rectangular	Concrete	0	School/Suburban	No	No	0	No	4'x6' box. No signs of erosion.
6:00	6/12/2017	1722	Smooth	Circle	Plastic	24	Suburban	No	No	0	No	Stable. Level spreader DS.
6:21	6/12/2017	1723	Concrete	Circle	Concrete	30	Suburban	No	No	0	No	Brackish stagnant water present.
6:44	6/12/2017	1724	Concrete	Circle	Concrete	24	Suburban	No	No	0	No	Stable.
7:02	6/12/2017	1725	Concrete	Circle	Concrete	30	Apartments	No	No	0	No	Stable.
11:26	6/13/2017	1726	Smooth	Circle	Outfall	15	Commercial	No	No	0	No	From Main Street inlets.

Time	Date	#	Material	Shape	Type	Dim	Land Use	Submerged	Flow?	Volume?	Illicit	Comments
11:38	6/12/2017	1727	Corrugated	Circle	Outfall	18	Suburban	No	No	0	No	Partially crushed.
11:52	6/13/2017	1728	Concrete	Circle	Outfall	24	Apartments	No	No	0	No	Eroded downstream.
11:56	6/13/2017	1729	PVC	Circle	Outfall	8	Apartments	No	No	0	No	Eroded downstream.
12:09	6/13/2017	1730	Concrete	Circle	EndWall	15	Suburban	No	No	0	No	Discharges to stream.
14:01	2/24/2017	1731	Concrete	Circle	Outfall	15	Research and	No	No	0	No	Stable downstream into wetland.
10:28	6/28/2017	1736	PVC	Circle	Outfall	4	Apartments	No	No	0	No	2-4" pipes. Assumed to be roof or floor
10:28	6/28/2017	1737	PVC	Circle	Outfall	4	Apartments	No	No	0	No	3-4" pipes. Assumed to be roof or floor
9:51	4/11/2017	104	Corrugated	Circle	Outfall	18	Suburban	No	No	0	No	
9:13	4/11/2017	118	Corrugated	Circular,single	Outfall	24	Suburban	No	No	0	No	
9:08	4/11/2017	119	Corrugated	Circle	Outfall	15	Suburban	No	No	0	No	Covered in leaves, had to dig around to find
9:57	4/11/2017	120	Corrugated	Circle	Outfall	15	Suburban	No	No	0	No	Half buried in the ground, covered with
9:52	4/11/2017	3	Corrugated	Circular,single	Outfall	18	Suburban	No	No	0	No	
9:43	4/11/2017	5	Concrete	Circular,single	Outfall	60	Suburban	No	No	0	No	
10:15	4/11/2017	85	Corrugated	Circle	Other	30	Suburban	No	No	0	No	Three pipes. channel erosion
10:06	4/11/2017	86	Corrugated	Circle	Metal	24	Suburban	No	No	0	No	Evidence of channel erosion

**Appendix 3-C: Illicit Discharges and Enforcement Summary and Evaluation**



**Town of Blacksburg Engineering and GIS Department**  
 400 South Main Street  
 Blacksburg, VA 24060  
 (540) 961-1124

**Illicit Discharge and Detection Activity: Illicit Discharges and Enforcement 2015 Summary and Evaluation**

The Town has established an ordinance to prohibit illicit discharges that was adopted by Town Council in spring of 2008 and again in 2014 as part of a Comprehensive Stormwater Ordinance. The Town will track and enforce all known instances of illegal dumping and illicit discharges in a GIS database. The GIS database will be used to detect trends and identify repeat offenders.

**About this Activity**

Last reporting period, the Town had 11 confirmed illicit discharges and one discharge determined not to be an illicit discharge. The standardization of the illicit discharge protocol has established a guideline for scheduling, identifying and eliminating illicit discharges. All actions have been in conformance with this protocol. Below is a list of the discharges and the response and enforcement generated for each discharge.

Discharge Type	Severity	Date	Contact List	Response	Enforce	Responsible party	action	Status
SSO (blockage)	Minor - no impacts to MS4	6/24/2017	PW, Eng. DEQ	Site visit, confirm source, clean-up	None.	Town of Blacksburg PW	Clean-up	Elimin - 6/26/17
Unpermtted Release	Moderate - entered MS4	5/9/2017	Eng, DEQ Fire/Res	Confirm source; clean-up	None.	Virginia Tech Airport	Clean-up	Elimin - 5/16/17
SSO (other)	Major - surface waters	4/26/2017	PW, Eng DEQ, VDH	Site visit, confirm source, clean-up	None.	The Retreat Apartments	Clean-up	Elimin - 4/26/17
Unconfirmed.	None.	4/22/2017	PW, Eng. DEQ	Site visit, could not confirm.	None.	None.	Re-inspect.	Closed. After three inspections determined to not be a true discharge.
SSO (wet weather)	Major - surface waters	4/24/2017	PW, Eng. DEQ	Site visit, confirm source, clean-up	None.	Town of Blacksburg PW	Clean-up	Elimin - 4/24/17
SSO (blockage)	Major - surface waters	3/19/2017	PW, Eng. DEQ	Site visit, confirm source, clean-up	None.	Town of Blacksburg PW	Clean-up	Elimin - 3/19/17
SSO (wet weather)	Major - surface waters	1/23/2017	PW, Eng. DEQ	Site visit, confirm source, clean-up	None.	Town of Blacksburg PW	Clean-up	Elimin - 1/23/17
SSO (blockage)	Minor - no impacts to MS4	12/19/2016	PW, Eng. DEQ	Site visit, confirm source, clean-up	None.	Town of Blacksburg PW	Clean-up	Elimin - 12/19/17
SSO (wet weather)	Major - surface waters	9/30/2016	PW, Eng. DEQ	Site visit, confirm source, clean-up	None.	Town of Blacksburg PW	Clean-up	Elimin - 9/30/2016
SSO (wet weather)	Major - surface waters	9/29/2016	PW, Eng. DEQ	Site visit, confirm source, clean-up	None.	Town of Blacksburg PW	Clean-up	Elimin - 9/29/2016
Cross Connection	Minor - no impacts to MS4	8/24/2016	PW, Eng. DEQ	Site visit; confirm source;	None.	Town of Blacksburg PW	Clean-up	Elimin - 8/24/2016

**Watershed:** Stroubles Creek, Toms Creek & Roanoke River

**TMDL POC:** Sediment, Bacteria, Oil & Grease

**Evaluation:**

This program has been evaluated for appropriateness and effectiveness in reaching the water quality goals of the community.

- Providing for standard procedures for the tracking, enforcing and planning for elimination can create the structure of an effective illicit discharge program.
- The data is collected in a GIS database to aid in the spatial analysis of the causes of some of the illicit discharges.

**Recommendation:**

- Continue to track illicit discharges in a GIS database and record the response, enforcement and status of the discharges.



Town of Blacksburg Engineering and GIS Department  
400 South Main Street  
Blacksburg, VA 24060

## Creek Valley and Floodplain Overlay Activities Summary and Evaluation 2017

The Town of Blacksburg has adopted by Ordinance two zoning overlay districts (“Creek Valley Overlay District”, “Floodplain Overlay District”) and has adopted amendments to the Subdivision Ordinance that protects floodplain areas, streams, and adjacent lands. (Ordinance Numbers 1184, 1215, 1225, 1308, 1310, and 1339.) The Overlay Districts prohibit development in areas detailed in Ordinances.

### About this BMP

The Creek Valley Overlay limits the development in the following areas:

- Tom's Creek and the Tom's Creek 100-year floodplain,
- Stroubles Creek and the Stroubles Creek floodplain west of West Campus Drive,
- Slate Branch and the Slate Branch floodplain west of U.S. 460 Bypass,
- All areas of twenty-five (25) percent or greater slopes adjacent to the floodplain, or if no floodplain is present, twenty-five (25) percent or greater slopes that begin within fifty (50) feet of the creek channel; and
- All wetlands contiguous to lands in Toms Creek and Stroubles Creek;



The Floodplain ordinance restricts development in the following areas:

- Areas identified as floodplain, floodway or flood fringe on FEMA flood rate maps.
- Areas identified as a floodplain, floodway or flood fringe through study, when 100 acres or more of drainage is upstream of the point of analysis.

Site Plans Reviewed where Creek Valley (CVO) or Floodplain (FP) Regulations Apply		
FLOODPLAIN	Preston Row Townhomes	FP

**Watershed(s):** Stroubles Creek

**TMDL POC:** (none)

### Evaluation and Recommendation:

The enforcement of the Creek Valley Overlay and the Floodplain Overlay areas have been evaluated for appropriateness and effectiveness in reaching the water quality goals of the community. The findings are below:

- Limiting development on these sensitive areas prevents development from further reducing riparian areas, and maintains these existing areas in a more natural state.
- Quantifying prevention is much more difficult and will require some additional methods to document the effectiveness.
- Some research will be needed to find alternatives for documenting the effectiveness of this BMP.



Town of Blacksburg Engineering and GIS Department  
400 South Main Street  
Blacksburg, VA 24060

## Illicit Discharge Elimination Activity: Elimination of Discharges through Outreach

The Town of Blacksburg will utilize the Town website, Town newsletter, mailings to businesses, brochures, and Public Outreach events to publicize the Illicit Discharge Program. This plan will incorporate a comprehensive outreach element, covered in BMP 1-F. The plan will outline how Town employees will receive guidance on detecting illicit discharges and related enforcement actions covered in BMP 6-M. The plan will also detail how illicit discharges will continue to be tracked by the Town Geographical Information System to help detect trends and identify repeat offenders provided in BMP 3-D.

### Activities:

- BMP 1-A: Homeowner and Family Residential Mass Email (1765)
- BMP 1-F: Restaurant Grease Program BMP Flyer (300)
- BMP 2-E: Illicit Discharge Poster at Outreach Events (1 event)
- BMP 6-E: O&M and Training Program to Prevent or Reduce the Pollutant Runoff from Municipal Operations

**Watershed(s):** Stroubles Creek, Roanoke River, Toms Creek

**TMDL POC:** Sediment, Bacteria, Oil & Grease

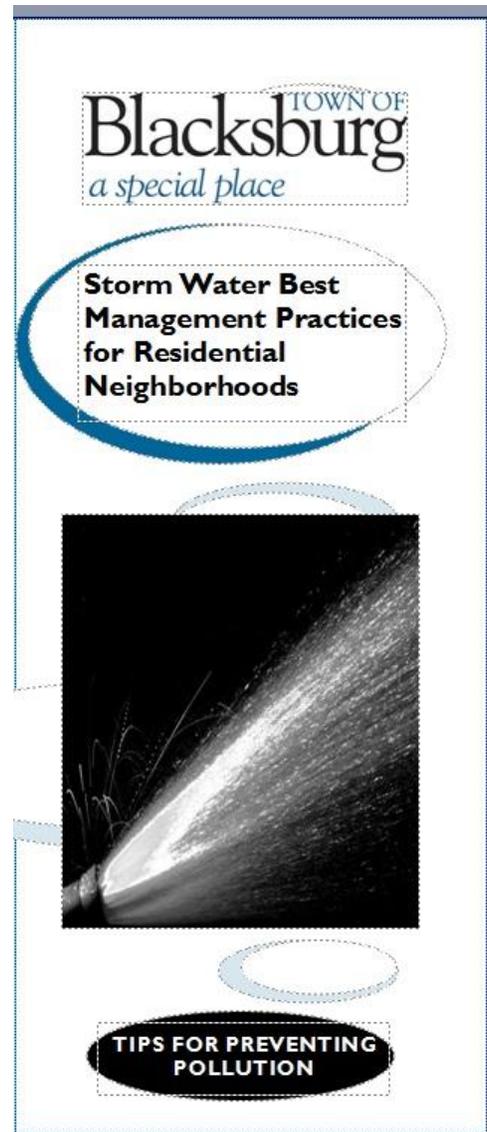
### Evaluation:

These activities have been evaluated for appropriateness and effectiveness, below are the results:

- Providing a diverse education and outreach program for Illicit Discharge is critical for increasing public awareness, reporting and behavior change.
- The impact group should be expanded to engage a larger portion of the Town's population.
- Better reporting methods should be considered as a way to streamline the information distribution.

### Recommendations:

- It is recommended that the Town continue to expand on the Illicit Discharge Education outreach program.





Town of Blacksburg Engineering and GIS Department  
 400 South Main Street  
 Blacksburg, VA 24060

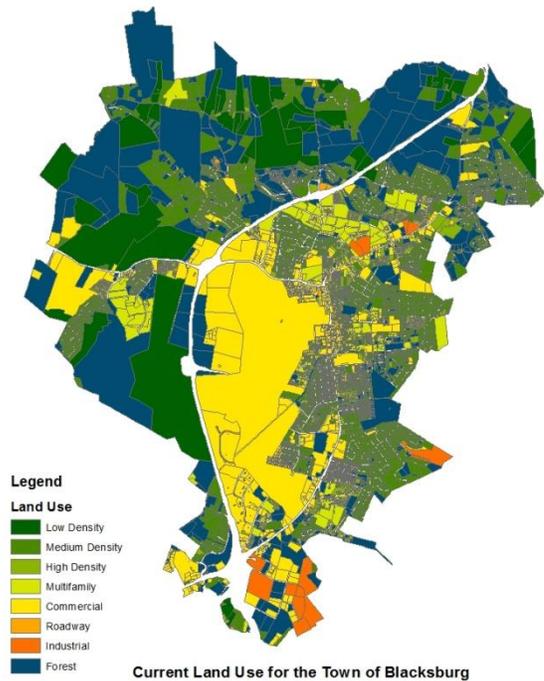
**Illicit Discharge Elimination Activity: Elimination of Discharges through Outreach**

The VSMP permit requires the Town to estimate the volume discharged and the amount of WLA pollutant, in units consistent with the associated TMDL, for watersheds assigned a WLA. The TOB currently has the following WLAs associated with a TMDL:

- 211 tons/year sediment to Stroubles Creek
- 102 tons/year sediment to Upper Roanoke River watershed
- 3.15E+09 cfu/year bacteria (E coli) to Wilson Creek

**Watershed(s):** Stroubles Creek, Roanoke River, Wilson Creek (within Roanoke River watershed)

**TMDL POC:** Sediment, Bacteria, Oil & Grease



**Results of Watershed Treatment Model Analysis:**

TMDL Watershed	Volume Stormwater	Sediment (tons/yr)	Bacteria (cfu/yr)	PCBs (mg/yr)
Stroubles Creek	3,967 ac/ft	375.66	n/a	-
Upper Roanoke River	1,956 ac/ft	191.37	n/a	7.8
Wilson Creek	316.8 ac/ft	n/a	5.39E+12	-

**Evaluation:**

These activities have been evaluated for appropriateness and effectiveness, below are the results:

- Estimating the volume discharged and the amount of WLA pollutant for TMDL watersheds is a requirement of this permit and therefore consistent with the Town’s water quality goals and assumptions.
- This process allows Town officials to understand better the association between land use and water quality concerns.

**Recommendations:**

- It is recommended that the Town continue to estimate the volume of stormwater discharged and pollutants of concern for TMDL watersheds.



Town of Blacksburg Engineering and GIS Department  
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Blacksburg, VA 24060

## Illicit Discharge Elimination Activity: Evaluation of Procedures to Detect, Identify, and Address Illegal Stormwater Discharges

The development of this document required the Town to identify and document written dry weather screening methodologies. These methodologies include:

A prioritized schedule of field screening activities determined by age of system, land use and other factors was developed.

- The minimum amount of field screenings to be completed each year was outlined.
- The methodologies to collect information such as last rain, conveyance type, estimated discharge rate and visual observations were also described.
- A time frame for follow-up investigation was defined.
- The method to determine source and eliminate such source was provided.
- These procedures incorporated the current methods to use a database of tracking discharges.
- The existing outreach methods for publicizing and facilitation of public reporting of illicit discharges were to be expanded.

The Illicit Discharge Procedures were completed in the year one reporting period and was included with the Year 1 annual report submission. This document has been added to the Program Plan this current year. Below is the evaluation of this BMP for appropriateness and effectiveness.

**Watershed(s):** Stroubles Creek, Roanoke River, Toms Creek

**TMDL POC:** Sediment, Bacteria, Oil & Grease

### Evaluation:

These activities have been evaluated for appropriateness and effectiveness, below are the results:

- Standardization of procedures for detection, identification, and elimination of illicit discharges is consistent with the Town’s water quality goals.
- The first draft of the procedures addresses most of the Town’s goals for the procedures.
- The outreach methods for publicizing and facilitation of public reporting of illicit discharges have not been expanded. Currently the only method is a phone number and website for submitting questions or concerns town-wide. It is recommended that a stormwater or illicit discharge specific method should be incorporated into the Town’s reporting options.
- Additional reporting methods should be considered as a way to streamline the information distribution.



### Recommendations:

- It is recommended that the Town continue to expand on the outreach methods for the Procedures for the Detection, Identification and Elimination of Illicit Discharges.



Town of Blacksburg Engineering and GIS Department  
400 South Main Street  
Blacksburg, VA 24060

## Illicit Discharge Elimination Activity 2017: Notify in Writing all Downstream MS4 of any Known Physical Interconnections

The MS4 general permit requires the Town to notify in writing all downstream MS4 entities of any known physical storm sewer interconnections. This notification will aid in the illicit discharge detection, analysis and elimination through better understanding of the storm drainage network outside of the boundaries of each MS4 jurisdiction.

The Town sent letters to both VDOT and Virginia Tech in 2013 notifying them of all physical storm sewer interconnections. This past reporting period, the Town notified Montgomery County of all physical interconnections, as it has just reached the designation of MS4. Below is a map that was included in the letter, showing all parcels owned by Montgomery County that are within the Town of Blacksburg. ***Since no new connections have been established in this past reporting period, no new letters have been sent.***

**Watershed(s):** Stroubles Creek and Roanoke River

**TMDL POC:** Sediment, Bacteria, Oil & Grease

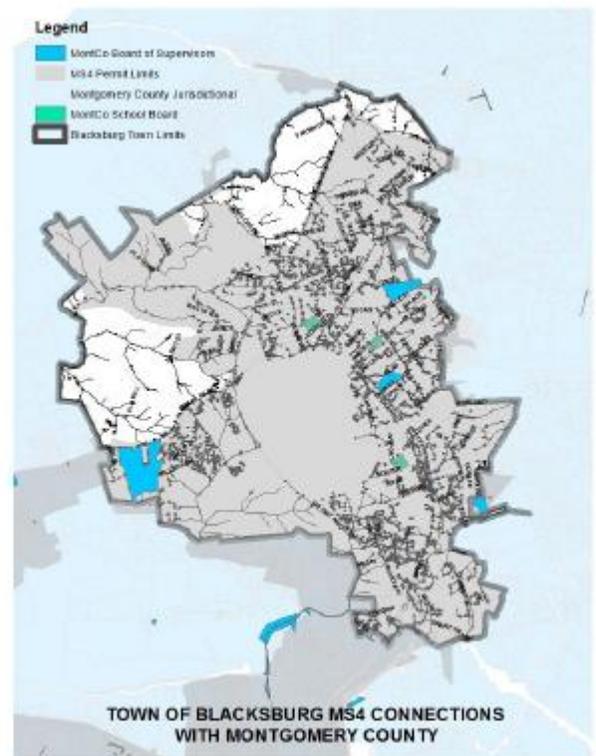
### Evaluation:

These activities have been evaluated for appropriateness and effectiveness, below are the results:

- Notification of physical interconnected MS4s is consistent with the Town’s water quality goals and it enhances the understanding of the storm drain network outside of jurisdictional boundaries.

### Recommendations:

- It is recommended that the Town continue to notify neighboring MS4 of physical interconnections when new connections are constructed.



## **Appendix 4: Construction Site Runoff Control**



Town of Blacksburg Engineering and GIS Department  
 400 South Main Street  
 Blacksburg, VA 24060

## Construction Site Runoff Control Activity: Erosion and Sediment Control Ordinance, Certification and Land Disturbing Activities

The Town of Blacksburg relies on its erosion and sediment control program as regulated under the Virginia Erosion and Sediment Control Law (ESCL) and attendant regulations. The Town has more restrictive controls than the ESCL to protect water quality by requiring land disturbers of more than 5,000 square feet to comply with the Town of Blacksburg Erosion and Sediment Control Program. The E&S Program has procedures for plan review, inspection, enforcement, and penalties. A certified Land Disturber is required prior to approval of any E&S plan and public plan reviewers will be certified E&S reviewers.

- The Erosion and Sediment Control Ordinance has been reviewed for compliance with the most current state Erosion and Sediment Control (FY2014) ordinance and it was found to be fully compliant. We are planning on updating the code reference when DEQ took over by the end of FY2019. No other changes are planned for the Erosion and Sediment Control Ordinance.
- A total of 767 erosion and sediment control inspections were conducted last reporting term, 35 Notices of Violation, 23 Notices to Comply and 1 Stop Work Order.
- The Town employs 11 staff members that maintain Erosion and Sediment control certificates. Currently all employees are current on their certifications. Two employees are new hires and are in the process of gaining the necessary certifications for their positions.
- In this reporting year, the Town approved 51 single family residences and 12 site plans and subdivisions. A total of 32.5 acres were disturbed.

### Certified Staff

Name	Required Certification	Certificate Number	Expiration Date
<b>ENGINEERING STAFF</b>			
Cathy Cook	ESC Inspector	1883	30-Nov-18
Randy Formica	ESC Combined Administrator	#ESCA0258	31-May-19
James Higgins	ESC Inspector	5228	31-May-19
Lori Lester	ESC Plan Reviewer	8005	30-Nov-19
Sam Sapienza	ESC Inspector	5847	30-Nov-18
Doug Shaver	ESC/SWM Dual Inspector	#DIN0282	4-Dec-20
	ESC/SWM Dual Program	#DPA0116	24-Feb-20
Vacant Position	ESC Inspector		
Kafi Howard	ESC/SWM Dual Combined Admin.	#DCA0296	15-Dec-19
Mic Mullins	SWM Inspector	<i>Provisional</i>	<i>In-Progress</i>
Victoria Hoyland	ESC Inspector	#ESIN0701	11-Sep-20
	ESC Program Administrator	#ESPA0169	11-Sep-20
Joshua Middleton	ESC Plan Reviewer	<i>Provisional</i>	29-Jun-19
<b>PUBLIC WORKS STAFF</b>			
Chris Scaggs	Responsible Land Disturber	RLD#41309	4-Feb-20

### Details on Enforcement Actions Taken:

**Watershed(s):** Stroubles Creek, Roanoke River & Toms Creek

**TMDL POC:** Sediment

**Evaluation:**

These activities have been evaluated for appropriateness and effectiveness, below are the results:

- Maintaining an Erosion and Sediment Control ordinance that is consistent with state law protects the Town from the mis-application of outdated code.
- Tracking the certifications that staff is required to maintain aids in the continuing education of our municipal staff that are tasked with enforcing all disturbances in Town.

**Recommendations:**

- It is recommended that the Town continue to review its Erosion and Sediment control ordinance; if new updates occur on the State level, the Town can keep its local ordinance in compliance.



Town of Blacksburg Engineering and GIS Department  
400 South Main Street  
Blacksburg, VA 24060

## Construction Site Runoff Control Activity: Respond To Erosion and Sediment Control Complaints 2017

The Town employs a full time Construction Manager and a Site Improvement Construction Inspector. The Construction Manager is the point of contact for E&S complaints and problems. The Erosion and Sediment Control Ordinance has been reviewed for compliance with the most current state Erosion and Sediment Control (FY2014) ordinance and it was found to be fully compliant. No changes are planned for the Erosion and Sediment Control Ordinance.

### Statistics:

- A total of **9** erosion and sediment control complaints were reported in the last reporting period.
- All complaints were responded to within 24 hours of reporting.
- All concerns were resolved in a timely manner.

**Watershed(s):** Stroubles Creek, Roanoke River & Toms Creek

**TMDL POC:** Sediment

### Evaluation:

These activities have been evaluated for appropriateness and effectiveness, below are the results:

- Tracking the erosion and sediment control complaints allows the Town to document patterns that could be addressed system wide, such as contractor behavior, geographical challenges and administrative weaknesses.
- Tracking the response to ESC complaints provides a tool to evaluate the administration of the ESC program and the Town's effectiveness in addressing known problems.
- The low number of complaints received by the Town indicates that a more aggressive outreach may be needed to empower more citizens to report. Documentation suggests that a few select citizens call repeatedly instead of calls coming from a diverse range of the population.



### Recommendations:

- It is recommended that the Town advertise the erosion and sediment control reporting option to allow for more citizens to have knowledge and access to this avenue of contact.

**Appendix 4-D: Require a VMSP Permit for All Required Plans**



**Town of Blacksburg Engineering and GIS Department**  
 400 South Main Street  
 Blacksburg, VA 24060

**Construction Site Runoff Control Activity 2017: Require a VSMP Permit for all Plans**

The Town has developed a new protocol as a VSMP Authority. No land disturbances will be authorized without proof of VSMP coverage or coverage under a VSMP Authority permit. Measurable goals tracking site plan review comments and pre-construction meeting have been eliminated and replaced with tracking of VSMP covered permits and VSMP Authority permits

**Statistics:**

- A total of 12 site plans were reviewed by the Town this last permitting period.
- A total of 4 required new VSMP permits or were associated with existing permits.
- All plans where a VSMP permit was required, one was obtained prior to land disturbance issuance.

**Watershed(s):** Stroubles Creek, Roanoke River & Toms Creek

**TMDL POC:** Sediment

**Evaluation:**

These activities have been evaluated for appropriateness and effectiveness, below are the results:

- The need for a VSMP permit is now a requirement prior to issuance of land disturbance permit is a requirement of the Stormwater Ordinance and our VSMP authority status.
- The Town has been successful in implementing this program for 100% of sites where conditions require a VSMP permit.
- This BMP has a high rate of success and should be continued to maintain VSMP coverage for all necessary sites.



VSMP PLAN NAME	ADDRESS	RECEIVED	VSMP PERMIT
COMMERCE PLACE BREWERY AND MASS GRADING	3175 Commerce Street	9/9/2016	YES
VTTI VIRGINIA AUTOMATION PARK	3500 TRANSPORTATION RESEARCH PLAZA	12/20/2016	YES
TORC TEST SITE	410 PARTNERSHIP DR	2/22/2017	YES
UPTOWN	1520 N MAIN ST	9/20/2016	EXISTING

**Recommendations:**

- It is recommended that the Town continue the program of requiring VSMP coverage prior to plan approval and land disturbance permit issuance.

## Appendix 4-E: ESC Protocol and Implementation



Town of Blacksburg Engineering and GIS Department

400 South Main Street

Blacksburg, VA 24060

### Construction Site Runoff Control Activity: ESC Protocol and Implementation

The Town has completed its E&S Inspection Protocol. This plan has been implemented and the frequency for inspections is in compliance with general permit. The plan also outlines our enforcement and plan revision procedures. In addition, the Town has adopted multiple public mechanisms for receipt of complaints regarding regulated land disturbing activities, one is called “At your Request” and another is called “Speakup Blacksburg!” Both strategies are opportunities for citizens to voice complaints regarding any issue within the Town. Details and evaluation of this ESC Inspection Protocol are located in Appendix 4-E, ESC Inspection Protocol Summary and Evaluation.

#### Statistics:

- A total of 767 Erosion and Sediment control inspections were performed by the town this last permitting period.
- All inspectors are certified ESC inspectors with valid licenses.
- All inspectors followed the ESC Protocol.

**Watershed(s):** Stroubles Creek, Roanoke River & Toms Creek

**TMDL POC:** Sediment

#### Evaluation:

These activities have been evaluated for appropriateness and effectiveness, below are the results:

- Standardization of erosion and sediment control inspections provides for consistent and more effective results in the construction community.
- Enforcement will be legally defensible with standard operating procedures.
- This BMP is effective in keeping all inspectors adequately certified and providing a consistent method of inspection.

#### Recommendations:

- It is recommended that the Town continue the program of the ESC protocol and make any necessary changes in the future.





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## Construction Site Runoff Control Activity: Pollution Prevention Plan Enforcement Protocol

The Pollution Prevention Plan Enforcement Protocol was completed in this reporting period. This protocol requires the implementation of controls to prevent non-stormwater discharges to the MS4 such as wastewater, concrete washout, fuels and oils or other illicit discharges.

Inspections and results from the program are documented below:

### Statistics:

- A total of 5 SWPPP inspections were performed by the town this last permitting period.
- All SWPPP inspections were performed by certified inspectors.

**Watershed(s):** Stroubles Creek, Roanoke River & Toms Creek



**TMDL POC:** Sediment, Bacteria, Oil & Grease

### Evaluation:

These activities have been evaluated for appropriateness and effectiveness, below are the results:

- All SWPPP inspections are performed by a Stormwater Inspector or Stormwater Combined Administrator, with up to date certifications.
- Standardization of SWPPP inspections provides for consistent and more effective results in the construction community.
- Enforcement will be legally defensible with standard operating procedures.
- This BMP is effective in keeping all inspectors adequately certified and providing a consistent method of inspection.

### Recommendations:

- It is recommended that the Town continue the program of the SWPPP protocol and make any necessary changes in the future.

## **Appendix 5: Post Construction Stormwater Management**

## Post-Construction Stormwater Management: Stormwater Ordinance

The Town of Blacksburg relies on its Stormwater Management Program as regulated under the Virginia Stormwater Management Regulations and attendant regulations. The Storm Water Management Program has procedures for plan review, inspection, enforcement, and penalties. The Town has a full time Stormwater Engineer position that is responsible for administering the Storm Water Management Ordinance and Program.

### Statistics:

- The stormwater ordinance was adopted by Town Council on June 10, 2014 to be in place by July 1, 2014.
- The stormwater ordinance was reviewed this permit period and it is still in compliance with State Stormwater Management regulations.

**Watershed(s):** Stroubles Creek, Roanoke River & Toms Creek

**TMDL POC:** Sediment, Bacteria, Oil & Grease

### Evaluation:

These activities have been evaluated for appropriateness and effectiveness, below are the results:

- A fully compliant stormwater ordinance allows for the effective understanding and enforcement of current stormwater regulations.
- Enforcement will be legally defensible.

### Recommendations:

- It is recommended that the Town continue to review the Stormwater Management Ordinance and address any changes made on the State level.



## **Post-Construction Stormwater Management: Implement a Long Term Stormwater Maintenance Program**

The Town has implemented a storm water maintenance program that requires proper long term operation and maintenance of storm water management facilities and the conduction of inspections and enforcement measures consistent with Virginia Stormwater Management Act and attendant regulations. The Stormwater Management ordinance requires a Maintenance Covenant on stormwater management facilities for all new development. This is enforced at the plan review stage, and approval of the plan is not granted until a receipt is provided from the Montgomery County Courthouse. The covenant is signed by the Owner of the facility and reviewed by the Town Attorney and Town Stormwater Engineer prior to recordation.

The Covenant also provides access to the Town for inspection of these new stormwater facilities (those approved post-ordinance). As part of the Stormwater Program described in the Ordinance, the Town will inspect these facilities at least once during a permit cycle. Maintenance forms from these inspections will be maintained in a database. This database will be linked to a GIS database of stormwater facilities.



If maintenance is found to be needed, a request to perform maintenance will be sent to the Owner. Upon failure of Owner response, the Town reserves the right to maintain the facility at the Owner's expense. It is noted that training for stormwater facility inspections and maintenance will be obtained during the first year of the permit cycle.

### **Statistics:**

All newly constructed stormwater management facilities (79) that have come online in the past reporting year have had recorded stormwater covenants associated with them. They have all been entered into the GIS database and were inspected prior to certificates of occupancy. All (51) Town owned facilities were inspected this reporting year and twenty-nine (209) private facilities were inspected.

**Watershed(s):** Stroubles Creek, Roanoke River & Toms Creek

**TMDL POC:** Sediment, Bacteria, Oil & Grease

### **Evaluation:**

These activities have been evaluated for appropriateness and effectiveness, below are the results:

- An effective long-term maintenance program supports the longevity of the stormwater facilities.
- The inspection frequency for new facilities is effective, since every facility must be inspected prior to certificate of occupancy.
- The inspection totals for existing private stormwater facilities exceeds our goals to inspect each private facility at least once every 5 years.



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## Post-Construction Stormwater Management: Tracking of all Known Stormwater Facilities

The Town is currently working with, and under contract with the Virginia Tech Civil Engineering Department as described above under BMP 3-A. This work includes efforts to compile data for stormwater modeling throughout the Town. As part of these efforts, GPS location of storm infrastructure is collected in the field. This field collection will include collection of data, and the mapped location of all found, and known stormwater facilities. New facilities will be added as constructed for all years of the permit cycle.

### Statistics:

Through efforts to utilize field collection to map the infrastructure and model the storm drainage network throughout the town, 26 new construction facilities were added to the database. The database has a total of 435 stormwater facilities.

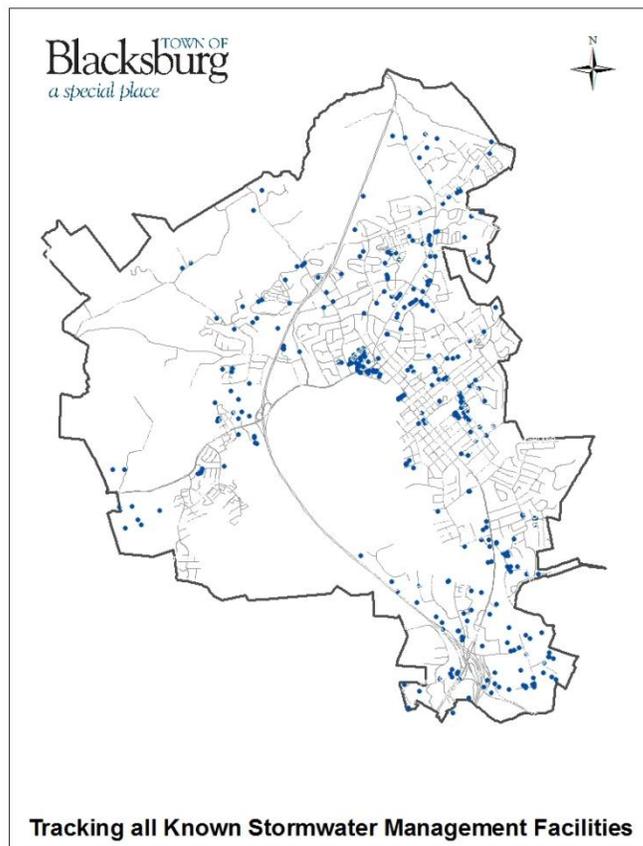
**Watershed(s):** Stroubles Creek, Roanoke River & Toms Creek

**TMDL POC:** Sediment, Bacteria, Oil & Grease

### Evaluation:

These activities have been evaluated for appropriateness and effectiveness, below are the results:

- An effective program of tracking the stormwater facilities in a GIS database improves the ability for the MS4 to inspect for maintenance.
- It is recommended that the Town continue to track these facilities and add new stormwater management measures to the database when necessary.





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## Post-Construction Stormwater Management: Stormwater Facilities Protocol

The Town of Blacksburg has developed a stormwater facilities protocol that includes written policies and procedures utilized to ensure that facilities are designed and constructed in accordance with Section IIB 5b. Also included are inspection procedures and policies for conducting all stormwater facility inspections, public and private. The roles and responsibilities of each of the Town departments, divisions or subdivisions have been defined. In addition, the stormwater management database has been enhanced to include a) stormwater facility type, b) Location (lat or long), c) acres treated, d) date brought online, e) 6th order HUC code, f) impaired stream discharge, g) public or private, and h) date of last inspection. This Protocol was completed in the Year 1 reporting period of this permit and was submitted to DEQ with the Year 1 Annual Report.

### Statistics:

In this past reporting year 76 facilities were inspected; (26) Town owned facilities and fifty (50) private facilities were inspected. All inspection completed were in conformance with the Stormwater Facilities Protocol.

**Watershed(s):** Stroubles Creek, Roanoke River & Toms Creek

**TMDL POC:** Sediment, Bacteria, Oil & Grease

### Evaluation:

- Providing for standard procedures for the scheduling, inspection and enforcement of stormwater facility maintenance provides a training protocol for staff and guidance for private businesses.
- A standard procedure for scheduling facility inspections allows for appropriate planning to meet all inspection requirements of this permit.
- Creating standardized enforcement methods provides a framework for better and more consistent enforcement of the maintenance of these facilities.



### Recommendation:

- Continue to follow the Stormwater Facilities Inspection Protocol in all planning, inspection, and enforcement of maintenance.
- Continue to evaluate program to see if improvements are needed in future years.

## **Appendix 6: Pollution Prevention and Good Housekeeping for Municipal Operations**



Town of Blacksburg Engineering and GIS Department  
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## Pollution prevention/Good housekeeping Activity: Maintenance Actions for Pollutant Reduction in Roads, Parking Lots, and Storage Yards

The Town of Blacksburg has had an Environmental Management System in place since 2002 as part of its comprehensive Environmental Management Program. The program is designated an Exemplary Environmental Enterprise (E3) with the VDEQ as part of the Virginia Environmental Excellence Program. Pollutant reduction programs include seasonal Leaf and Christmas tree pickup, twice yearly brush pickup, twice yearly pick-up of discarded larger items, and street sweeping. Town employees also pick up loose trash, leaves, and tree limbs as properties are maintained. Litter is removed from the Downtown area on a daily basis.

### About this Activity

In this past reporting year, the Town collected 5.73 tons of Christmas trees, 463.9 tons of brush and bulk items, 212.9 tons of street sweeper collection and continued the daily removal of trash and litter in the Downtown areas. This BMP significantly reduces pollution in our roads, parking lots and storage yards. Additionally, by offering the bulk and brush collection service, this reduces the instances of illegal dumping by collecting these items free of charge.

**Watershed:** Stroubles Creek, Toms Creek & Roanoke River

**TMDL POC:** Sediment, Bacteria, Oil & Grease

### Evaluation:

This program has been evaluated for appropriateness and effectiveness in reaching the water quality goals of the community.

- Providing the curb-side leaf and Christmas tree pickup free-of-charge reduces the amount of organic waste that is dumped into storm drainage system. The leaves and trees are then ground up and taken to a local composting site. This organic material is then redistributed at no charge to citizens who are in need of compost material.
- The twice yearly brush and bulk pickup collects both organic material and non-organic material from the curbside. These sponsored events reduce the amount of bulk organic items and non-organic material from being illegally dumped in areas where they could have a multitude of negative impacts to the surroundings.
- The daily removal of trash from the highly pedestrian areas such as downtown allows for the routine removal of trash and debris such as cigarette butts, food and drink containers, and other trash items that do not make it to a receptacle. This not only improves the aesthetics of the areas which are most impacted by negligent pedestrians, but it reduces the amount of floatables that could enter the storm drain system.



### Recommendation:

- Continue to provide the activities associated with the Environmental Management System such as Leaf and Christmas tree pickup, twice yearly Brush and Bulk item Pickup, and daily removal of trash and litter in the highly pedestrian areas such as Downtown.

## **Pollution prevention/Good housekeeping Activity: Controls for Reducing the Discharge of Pollutants in Publicly Maintained Areas**

The Town will continue to evaluate all town operations for ways to reduce pollution through the Environmental Management Program. Pollution prevention activities will include evaluating public facilities for problems to correct, continue upgrades to sanitary sewer lines and manholes to reduce sanitary sewer overflows, recycling, employee training, spill prevention program, watershed management and incorporating LID practices on publicly owned properties.

### **About this Activity**

The Town performs annual sanitary sewer line cleaning to reduce the amount of root intrusion into the sewer lines. This allows the sewer line to function without clogging. In addition, the sanitary sewer is continually studied for areas in need of upgrades to maintain capacity with growth in population. The Town also manages a Town-wide recycling program for all residential homes.

The following activities were completed in Year 4:

- Perform Sanitary Sewer Line Maintenance to reduce clogging
- Perform Sanitary Sewer Line Upgrades to maintain capacity
- Continue Managing the Town-Wide recycling Program



The Public Works Complex was identified as being in need of a Stormwater Pollution Prevention Plan and in need of evaluation for a Spill Prevention Plan. This was completed during this reporting period.

**Watershed:** Stroubles Creek, Toms Creek & Roanoke River

**TMDL POC:** Sediment, Bacteria, Oil & Grease

### **Evaluation:**

This program has been evaluated for appropriateness and effectiveness in reaching the water quality goals of the community.

- Performing sanitary sewer line maintenance on an annual basis is effective in reducing sanitary sewer overflows due to clogging. In the past reporting year, the town only had 6 sewer overflows due to clogging. In the past these events were often caused by root intrusion into the lines, now most of the clogging overflows are caused by improper disposal of paper products such as flushable wipes and paper towels.
- Performing sanitary sewer line upgrades to maintain capacity is effective in reducing sanitary sewer overflows due to the impacts of growth. The town continues to evaluate the sewer system and the goal is to have no capacity overflows during dry weather conditions and no capacity overflows during wet weather events of a 10 year frequency or less. In the last reporting period the town had 4 overflows due to wet weather capacity issues, these were due to storms greater than the 10-year event storm.
- The Town continues to manage its town wide recycling program. This is offered to every residential home within the Town and also serves 66 apartment complexes. This past year, the Town implemented single stream recycling to enable more material to be recycled by Town citizens. This program has been a success.

### **Recommendation:**

- Continue to provide the Pollution prevention activities include evaluating public facilities for problems to correct, continue upgrades to sanitary sewer lines and manholes to reduce sanitary sewer overflows, recycling, employee training, spill prevention program, watershed management and incorporating LID practices on publicly owned properties.

## Appendix 6-C: Reduce the Amount of Solid Waste from Municipal Facilities



Town of Blacksburg Engineering and GIS Department  
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### **Pollution prevention/Good housekeeping Activity: Reduce the Amount of Solid Waste from Municipal Facilities**

Town facilities contain a centralized recycling area. Employees recycle, co-mingled containers, mixed paper, toner cartridges, electronics, and rechargeable/alkaline batteries. Educational materials are displayed at each recycling site. Recycling Assistants from each department help the Waste Reduction and Recycling staff to promote the program. The Public Works and Transit garages recycle oil, antifreeze, tires, and metal. The Town also recycles used fluorescent lamps and metal from discarded items. In addition, the Purchasing Division and Technology Department work closely to ensure that all electronic equipment is properly recycled.

#### **About this Activity**

The following activities were completed in Year 3:

- Continued municipal building recycling of co-mingled containers, mixed paper, toner cartridges, electronics, and rechargeable/alkaline batteries.
- Continued the recycling of oil, antifreeze, tires, and metal at the Public Works and Transit garage.
- Continued recycling used fluorescent lamps from all facilities.
- Continued the recycling of electronic equipment and computers through the Purchasing Division and Technology Department.



**Watershed:** Stroubles Creek, Toms Creek & Roanoke River

**TMDL POC:** Sediment, Bacteria, Oil & Grease

#### **Evaluation:**

This program has been evaluated for appropriateness and effectiveness in reaching the water quality goals of the community.

- The municipal buildings create large amounts of trash in the form of reports, plans, and applications while utilizing large amounts of document printing materials such as toner as well as daily use of small electronics and batteries. Many of these actions cannot be eliminated, so efforts to target Town buildings for recycling is critical in reducing the potential waste these activities can generate. This provides a viable alternative to the wastebasket and minimizes the volume of materials sent to the landfill.
- The public works facility and Blacksburg Transit garage utilizes large amounts of oil, antifreeze, tires and metal in the maintenance of the town's infrastructure and municipal fleet. The recycling of all these materials will reduce the potential for these items to end up in the landfill.
- All municipal buildings utilize fluorescent lamps. All spent fluorescent lamps from municipal buildings are recycled.
- The Technology Department has a recycling program for all computers through the Purchasing Division. Computers that have expended their useful life are first re-purposed in areas with lower demands such as interns or part time staff, then they are put on a surplus auction for reuse in the community.

#### **Recommendation:**

- Continue to recycle at current levels and evaluate additional resources to minimize the impacts from municipal waste.
- Track the amounts of each type of recycled material to identify if programs are being utilized and if they need expansion.



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## Pollution prevention/Good housekeeping Activity: Reduce the Use and Discharge Potential of Hazardous Chemicals

The Town Horticulturist will provide annual update training for all employees licensed as Registered Technicians or Certified Applicators through the State of Virginia. The Safety & Emergency Manager is responsible for developing and updating the MSDS Management Program. The Operations Coordinator in the Office of Waste Reduction and Recycling will finalize a Universal Waste Policy and provide employee training on the subject.

### About this Activity

The following activities were completed in Year 3:

- Update the Towns MSDS Program
- Provide training for all Registered Technicians or Certified Applicators through the State

**Watershed:** Stroubles Creek, Toms Creek & Roanoke River

**TMDL POC:** Sediment, Bacteria, Oil & Grease

### Evaluation:

This program has been evaluated for appropriateness and effectiveness in reaching the water quality goals of the community.

- The Towns MSDS program is currently being evaluated for updates. This evaluation will be complete and recommendations provided in Year 4 of this permit cycle.
- All registered technicians and certified applicators have been trained and their certifications are up to date. Below is a list of all certified staff:

Registered Technicians:		
Name	Expiration	Certification #
Douglas W. Huff	6/30/2019	120293
Gary L. Dowdy	6/30/2019	131034
Commercial Applicators:		
James "Jimmy" Bishop	6/30/2020	88250
Elizabeth Carson	6/30/2020	55258
Jenifer Lynn Lucas	6/30/2020	66884
Anthony "Todd" Duncan	6/30/2018	87985
David K. McCoy	6/30/2018	87984
Timothy A. Turman	6/30/2018	100313
Michael S. Agud	6/30/2020	87986
Randy St. Clair	6/30/2020	88249

### Recommendation:

- Continue to review MSDS program and maintain training and certifications for technicians and applicators.



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## **Pollution prevention/Good housekeeping Activity: Develop and Implement an O&M and Training Program to Prevent or Reduce the Pollutant Runoff from Municipal Operations**

Outlines for training programs have been developed for the Town Police Department, Fire and Rescue, Public Works Grounds and Fueling and Vehicle Maintenance staff. The following training programs have been completed this reporting period: ESC/SWM training for Engineering staff, Spill Response for Emergency Services staff and Fertilizer, Pesticide and Landscape Materials for Applicators. See Appendix 6-E for Details, Evaluation and Recommendations for this BMP.

### **About this Activity**

The following activities were completed in Year 3:

- Engineering Staff received training to maintain ESC and SWM certifications.
- Emergency Services staff received training on spill response.
- Landscaping staff received training to maintain applicator certifications.
- Written Operation and Maintenance procedures have been completed. Trainings for written O&M procedures will occur in Year 3-5 of the permit cycle.

**Watershed:** Stroubles Creek, Toms Creek & Roanoke River

**TMDL POC:** Sediment, Bacteria, Oil & Grease

### **Evaluation:**

This program has been evaluated for appropriateness and effectiveness in reaching the water quality goals of the community.

- The training for certifications has a high rate of compliance for staff working in areas which may have significant impact to local water quality. It is important to keep staff appropriately trained so that any new information and recommendations for standards of use can quickly be incorporated in to common practice.
- The written O&M procedures, which documents these standards of use and practice will allow staff to standardize the implementation of these actions.



### **Recommendation:**

- Continue to evaluate this BMP once the written O&M training is complete. Feedback from those training sessions may provide useful information to keep these procedures as effective as possible.

**Appendix 6-E(b): O&M and Training Schedule**

<b>Schedule of Training</b>		
<b>Date</b>	<b>Applicable Staff</b>	<b>Certifications (as necessary)</b>
<b>2014-2015</b>		
ESC/SWM Training for Staff	<b>Engineering Staff -</b> Engineer – Stormwater Engineer – Wastewater Engineer – Construction Engineer – Urban Development Inspector - Utility and ESC Inspector – Water Resources	(SWM Combined Administrator) (ESC Combined Administrator) (SWM/ESC Stormwater Inspector) (SWM/ESC Stormwater Inspector) (SWM/ESC Stormwater Inspector) (SWM/ESC Stormwater Inspector)
Spill Response for Emergency Services	<b>Emergency Services Staff -</b> Fire - no employees (volunteer only) Rescue – no employees (volunteer only) Police Captains (2) Alfa, Bravo, Charlie, Delta Shift(s) – (16) Investigations (8) Community Services (7)	(none)
Fertilizers, Pesticides and Landscaping Material Waste	Horticulturist (1) Horticulture Crew (3)	Certified Fertilizer Applicator (CFA) Training
<b>2015-2016</b>		
Illicit Discharge Prevention	<b>Parks Staff –</b> Director & Assistant Director of Parks and Recreation (2) Golf Course Supervisor and staff (4) Outdoor Programs Supervisor (1) Athletic Supervisor (1) Community Programs/Special Events Supervisor (1)	(none)
Parks and Recreational Facilities Discharge Prevention		
<b>2016-2017</b>		
Illicit Discharge Prevention	<b>Public Works Staff –</b> Sustainability Manager (1) Water & Wastewater Crews (10) Field Operations Crews (24) Fleet Operations Staff (3) Blacksburg Transit Management (8)	(none)
Wastewater Prevention		
Spill Response for Emergency Services Wastewater Prevention		
Municipal Wash Water		
Utility, Construction & Maintenance		
Bulk Storage Area Discharge Prevention		
Municipal Automobiles & Equipment Discharge Prevention		

**Appendix 6-E(b): O&M and Training Schedule**

Date	Applicable Staff	Certifications (as necessary)
<b>2017-2018</b>		
Fertilizers, Pesticides and Landscaping Material Waste	Horticulturist (1) Horticulture Crew (3) Cemetery/Special Events Crew (3)	Certified Fertilizer Applicator (CFA) Training
Illicit Discharge Prevention		(none)
Parks and Recreational Facilities Discharge Prevention	<b>Parks Staff –</b> Director & Assistant Director of Parks and Recreation (2) Golf Course Supervisor and staff (4) Outdoor Programs Supervisor (1) Athletic Supervisor (1) Community Programs/Special Events Supervisor (1)	(none)
Wastewater Prevention	Water & Wastewater Crews (10)	
ESC/SWM Training for Staff	<b>Engineering Staff -</b> Engineer – Stormwater Engineer – Wastewater Engineer – Construction Engineer – Urban Development Inspector - Utility and ESC Inspector – Water Resources	(SWM Combined Administrator) (ESC Combined Administrator) (SWM/ESC Stormwater Inspector) (SWM/ESC Stormwater Inspector) (SWM/ESC Stormwater Inspector) (SWM/ESC Stormwater Inspector)



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## Pollution prevention/Good housekeeping Activity: Turf and Landscape Nutrient Management Plans

The Town shall implement turf and landscape nutrient management plans that have been developed by a certified turf and landscape nutrient management planner in accordance with § 10.1-104.2 of the Code of Virginia on all lands owned or operated by the MS4 operator where nutrients are applied to a contiguous area greater than one acre.

### About this Activity

The following activities were completed in Year 1:

- The Town has completed its identification of lands requiring Turf and Landscape Nutrient Management Plans.
- A total of six sites meet this description.

The following activities were completed in Year 2:

- The town included in the Capital Improvement Program budget monies to begin contracting the Nutrient Management Plans for the selected sites.
- This CIP project has been funded and will commence in Year 3.

The following activities were completed in Year 4:

- Nutrient Management plans were completed for all Municipal sites identified as needing one. Stall has begun to operate these sites under the recommendations of the management plans.

**Watershed:** Stroubles Creek, Toms Creek & Roanoke River

**TMDL POC:** Sediment, Bacteria, Oil & Grease

### Evaluation:

This program has been evaluated for appropriateness and effectiveness in reaching the water quality goals of the community.

- The completion of the Nutrient Management Plans has provided an educational resource and guideline for the application and treatment of the Town’s large managed land. This will continue to prevent the overuse of nutrients which can protect those nutrients from burdening our local waters.

### Recommendation:

- Continue to manage the municipal owned properties under the recommendations of the nutrient management plans.

