Town of Christiansburg

Municipal Separate Storm Sewer System Program Plan & Annual Report

For

General Permit No. VAR040025

And

Annual Reporting through

July 1, 2015 through June 30, 2016

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

Submitted: September 29, 2016

CERTIFICATION

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

Printed Name: Wayne Nelson Title: Director of Engineering

Signature: Wayne O. Nelson Date: 9/30/16

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DEFINITIONS

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

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

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

"Department" means the Department of Environmental Quality.

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

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

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

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

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

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

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

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

"Outfall" means, when used in reference to municipal separate storm sewers, a point source at the point where a municipal separate storm sewer discharges to surface waters and does not include open conveyances connecting two municipal separate storm sewers, or pipes, tunnels or other conveyances which connect segments of the same stream or other surface waters and are used to convey surface waters.

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

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

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

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

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

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

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

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

1.0 PROGRAM PLAN STRUCTURE

The Town of Christiansburg's Program Plan is structured to serve as a stand-alone document that, when implemented, meets the requirements of the VAR04 *General Virginia Pollutant Discharge Elimination System (VPDES) Permit for Discharges of Stormwater from Small Municipal Separate Storm Sewer Systems (MS4s)*, referred to in the remainder of this Plan as the General Permit. The Plan is intended to be subject to modifications as part of an iterative process that seeks to improve the effectiveness of best management practices (BMPs) and therefore may change from time to time. Modifications will occur per Section 1.5 of this Plan. The Program's effectiveness will be measured with "Measure(s) of effectiveness" that are incorporated into each BMP's annual reporting form in Section 3.

1.1 Minimum Control Measures

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

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

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

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

1.2 Special Conditions for TMDLs

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

- Crab Creek Watershed for E. Coli, approved December 2, 2004
- Crab Creek Watershed for Sediment, approved December 2, 2004

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

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

1.3 Annual Reporting

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

- Cover sheet, which will be updated with the specific reporting year;
- Certification that follows the table of contents and will be signed each year by the appropriate signatory. Certification is required by a principle executive officer or a duly authorized representative. The duly authorized representative must have overall responsibility of the Town operations and written authorization must be provided to the Department. ;
- "Annual Reporting – General Information Form" on the following page, completed annually;
- The "Annual Reporting Form" following each BMP in Section 3, completed annually; and
- The Measure(s) of Effectiveness Form following each BMP in Section 3.

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

1.4 Annual Reporting – General Information Form

- The BMPs described in Section 3 of this Program Plan/Annual Report are the stormwater activities that the Town of Christiansburg plans to undertake during the remainder of the permit cycle.
- The Town does not rely on another entity to implement portions of their MS4 Program Plan
- Completed Annual Reporting Forms for each BMP in Section 3 provide an assessment of the appropriateness of each BMP, progress towards achieving each measurable goal, and results of collected information analyzed for appropriate assessments and effectiveness of the BMP.
- See the updated Outfall Inventory in Appendix B for new MS4 outfalls that came online during the reporting year. Note that associated drainage areas will be provided per the schedule in BMP 3.1.

➢ Did modifications to the responsible individual of any program role or responsibility or specific BMP included in the Program occur during the reporting year? (yes/no)	☒ Yes ☐ No

If yes, list modifications (provide BMP # to reference modification rationale): BMP 1.2 and 2.2 have been modified. The Public Education and Outreach Plan Water Quality issues have been revised. The target audience for issue #1 is modified and issue #3 has been revised based on DEQ concerns about the appropriateness of Public Works staff as and water quality issue target audience due to the overlap with Minimum Control Measure requirements for that audience.

➢ Based on a review of the reporting forms completed for the reporting year within Section 3 of this Program Plan, does the Town finds itself compliant with the permit conditions (yes/no):	☒ Yes, the Town is compliant ☐ No (see below)

If no, listed below are additional BMPs and/or changes made to BMPs or measurable goals for any of the MCMs, including steps to address any deficiencies (Refer to Section 1.5):
N/A, the Town finds itself compliant.

➢ Does the Town's MS4 directly discharge to waters that are identified as impaired in the 2010 § 305(b)/303(d) Water Quality Assessment Integrated Report? (yes/no)	☒ Yes ☐ No

If yes, list the impaired waters and pollutant impairment: Crab Creek, VAW-N18R CBC04A00, Sediment, E. Coli. tributaries of Slate Branch, VAW-N22R XEJ01A08 and VAW-N22R XEH01A08: Aquatic Life impairment, no TMDL. Wilson Creek, VAW-L02R WLN03A00, E. Coli, VAW-L02R WLN02A00, E. Coli.

➢ Based on the water quality issues identified in BMP 1.2 and impairments identified above, does a review of the effectiveness of the BMPs listed in the program indicate they are appropriate? (yes/no)	☒ Yes ☐ No

Explain why they are effective for the water quality issues identified in BMP 1.2 and listed impairments or identify potential modifications if not effective: BMPs are effective as they address all required aspects of the General permit, including BMP 1.2. since they incorporate education and practices to address the pollutants of concern for the impairments (i.e. sediment and bacteria).

1.5 Program Modifications

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

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

2.0 SCHEDULE

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

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

BMP	Necessary Action	Due date
2.2	Public participation activities	4x annually
2.1	Post Annual Report on website	30 days after submittal annually
6.3a	Staff training on pollution prevention	Annually
1.1, 1.2	Provide for public participation for education and outreach plan	**Complete**
1.2	Public Education/Outreach Plan	Modified 9/2016
3.1	Notification of MS4 Interconnections	As necessary
3.3	Develop IDDE Program Manual	**Complete**
6.3a	Written Training Program (see BMP 6.3a)	**Complete**
6.2	Identify high priority areas (see BMP 6.2)	**Complete**
5.3	Post-construction SWM Inspection/Maintenance Program Manual	**Complete**
3.4, 6.1	Good Housekeeping/Pollution Prevention Program Manual	**Complete**
1.2, 3.4, 4.2	Website postings (see BMPs for details)	**Complete**
6.3b, 6.5	Good housekeeping contract language for municipal contractors	
SC.1 & 2	Crab Creek E. Coli and Sediment TMDL	
SC.4 & 5	Upper Roanoke River E.coli & Sediment TMDL	
3.3	Methodology for prioritizing outfalls	**Complete**
SC.3	Roanoke (Staunton) River PCBs Action Plan	**Complete**
3.1	Storm sewer mapping/information table	Continuing Updates
5.2	Update BMP database attributes	Continuing Updates
6.2	High-priority facility SWPPP implementation	September 1, 2016

3.0 PROGRAM PLAN BEST MANAGEMENT PRACTICES

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

3.1 Minimum Control Measure BMPs

BMP 1.1 Public Participation for Public Education and Outreach Plan (Section II B.1.c.4)
Description: The current Public Education and Outreach Plan (PEOP) was limited to comment from City staff and information from other MS4 public surveys. The Town will provide for participation from the Christiansburg public with a survey distributed to households. The survey will be developed to assess the Town's knowledge regarding stormwater issues with the intent of assisting with the selection, or confirmation, of high priority water quality issues in the PEOP. Opportunity to provide written comment will be provided with the survey. **Necessary documentation for implementation:** (1) Public Survey; (2) Public Survey results **Responsible individuals for implementation:** Town Engineer **Objectives and expected results in meeting measurable goals:** The objective is to include the public in the selection of water quality issues identified in the Town's PEOP. **Implementation schedule**: The public survey will be distributed in the Spring of 2016. **Method to determine effectiveness:** Effectiveness will be measured by the number of individuals responding to the survey and the incorporation of survey results into the PEOP.

BMP 1.1 Annual Reporting Form (Completed once during the development of the Public Education and Outreach Plan)	
Dates that survey was distributed:	6/16/16 – 7/31/16
Number of survey responses:	314
Description of how survey results and responses were incorporated into the Program: <u>The survey responses were weighted towards an older demographic, leading in part to the Public Education and Outreach Plan water quality issue #1 being modified to target sixth grade students at public schools. The survey responses indicated that there is understanding of the storm drain marking program but more outreach and education that inlets drain to streams is warranted. There is indication that citizens are willing to participate in events. 2018 survey will be used to examine MS4 efforts for the 16-17 and 17-18 permit years.</u>	

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

BMP 1.2 Develop Public Education and Outreach Program (Section II B.1.c.1-6)

Description: Identify three (3) high priority water quality issues contributed to by the discharge of stormwater. For each issue identified, provide

- Rationale for the selection of each issue;
- An identification and estimate of population size of the target audience who is most likely to have significant impacts on the water quality issue; and
- A relevant message and educational and outreach materials to convey the message for distribution to the target audience.

Necessary documentation for implementation: (1) Survey results from BMP 1.1; (2) Written PEOP describing the rationale of the selection of each water quality issue, identification of target audience and estimated population, and relevant message; (3) Materials described in the Public Education and Outreach Plan such as pamphlets and training materials.

Responsible individual for implementation: Town Engineer

Objectives and expected results in meeting measurable goals: Objectives are to convey relevant information to target audiences regarding water quality issues. The expected result is that the target audiences will have an increased knowledge of the water quality issues over time.

Implementation schedule: Outreach will be conducted a minimum of once a year to at least 20% of each target audience for each water quality issue identified in the PEOP. A public survey will be distributed in the Spring of 2016 and again in 2018 with questions to gauge the public's knowledge on stormwater issues.

Method to determine effectiveness: Results from the two public surveys will be assessed to determine the effectiveness of the message delivered for each water quality issue. The first survey will occur near the start of implementation of the PEOP and the second in the final year of the permit cycle. Effectiveness will be measured by using a scoring system to compare results of the two surveys to determine if public knowledge regarding each water quality issue has increased.

BMP 1.2 Annual Reporting Form				
Has a written Public Education and Outreach Plan been developed?				☒ Yes ☐ No
If no, explain, is yes, summarize below: N/A - Plan completed and provided with this report				
Water quality Issue #	List of educational and outreach activities identified in Public Education and Outreach Plan Update	Target Audience	# people reached for reporting year	% of target audience to be reached in reporting year
1	Public education on stormwater impacts	±9,400 households	±8,500 households	±90
2	Education on special water quality concerns (E.coli)	±9,400 households	±8,500 households	±90
3	Staff Education on special water quality concerns (E.coli)	±92 Staff	81 staff	88
Water quality Issue #	List of educational and outreach activities that will be conducted during the ***next*** reporting year	Target Audience	# people to be reached for reporting year	Minimum % of target audience to be reached
1	Public education on stormwater impacts	± 300 Sixth Grade Students	+- 150	50
2	Education on special water quality concerns (E.coli)	±9,400 households	> 1,880 households	20
3	Stormwater Sensitive Lawn Care	±9,400 households	> 1,880 households	20

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

Measure of Effectiveness Form	
Average "knowledge" score from previous survey:	44%
Average "knowledge" score from latest survey:	TBD 2018 - see BMP Schedule
Has the "knowledge" score gone up over the permit cycle?	☐ Yes (BMP effective) ☐ No (See below) ☒ N/A
If no, discuss potential ineffectiveness of the BMP (outreach materials, training approach, etc.). TBD - see BMP Schedule.	
If no, Suggest BMP modifications to the Program Plan with rationale to increase effectiveness: TBD - see BMP Schedule. However, reply demographic was basis for modifying water quality issue #1 demographic to middle school students	

BMP 2.1 Public Involvement through web posting of MS4 Program information (Section II B.2.a.1-2)

Description: The following documentation will be maintained on the Town's stormwater website:

- The latest version of this MS4 Program Plan
- The latest MS4 Annual Reports.

Public education and outreach materials developed for BMP 1.2 will include links to the Program Plan and Annual Reports.

Necessary documentation for implementation: (1) Town of Christiansburg MS4 Program Plan; (2) Town of Christiansburg MS4 Annual Reports; (3) Web address of posted materials; (4) Educational and outreach material from BMP 1.2

Responsible individual for implementation: Town Engineer

Objectives and expected results in meeting measurable goals: Objectives are to provide an opportunity to the public to review the Town's MS4 Program documentation. Expected results are an increase in public knowledge of the effects of stormwater runoff on water quality and BMPs implemented by the Town to improve water quality from stormwater runoff.

Implementation schedule: The Town's Program Plan and Annual Report are included in this single document. This document will be posted on the web page within 30 days of submittal to DEQ, or by November 1st of each year.

Method to determine effectiveness: Same as BMP 1.2.

BMP 2.1 Annual Reporting Form
Web link to the Town's Program Plan/Annual Report is provided below:
http://www.christiansburg.org/index.aspx?NID=481

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

BMP 2.2 Public participation (Section II B.1.b)

Description: The Town of Christiansburg will participate, through promotion, sponsorship, or other involvement, in a minimum of four local activities annually.

Necessary documentation for implementation: (1) A list of public participation opportunities; (2) Documentation of participation for each activity.

Responsible individual for implementation: Town Engineer

Objectives and expected results in meeting measurable goals: The objective is to increase public participation to reduce stormwater pollutant loads; improve water quality; and support local restoration and clean-up projects, programs, groups, meetings, or other opportunities for public involvement. Measurable goals include a measure or estimation of the number of people that participate in each local activity.

Implementation schedule: Public participation will be conducted a minimum of four times a year.

Method to determine effectiveness: Effectiveness will be determined by successful public turn-out or exposure to each event. Selection of specific events may be modified from year to year based on opportunity, the potential impact of the audience that can be reached, and anticipated public turn-out.

BMP 2.2 Annual Reporting Form			
Local activity	Type of participation (e.g. promotion, sponsorship, other)	Estimated # of people reached	Summary of documentation* that demonstrates participation
Stormwater Utility Information Mailer (WQ issue #1	May 2016 Informational Brochure mailed to every household receiving paper utility billing	8,500	Mailed to all households w/ paper utility billing
Stormwater Open House	2/17/16 Open house to discuss stormwater utility proposal, reasons for stormwater program and need to support program	40	Sign in sheet plus head count
Aquatic Center Summer Camp Macroinvertebrates Camp!	6/24/16 in stream and class presentation on stream health	60	Slide show in Appendinx, attendance # from Aquatic Center staff
Stormwater Survey (WQ issue #1	June 2016 Survey mailed to every household w/ potable water quality report, website link, and paper copies distributed	314	Printing receipt and Survey results in Appendix
Storm Drain Marker Installation	Install Markers on 100 Inlets	~3,480	Projected from survey responses to questions 8 and 9
Villas at Peppers Ferry Stormwater Open House	3/2/16 Open house to discuss stormwater utility proposal, reasons for stormwater program and need to support program	70	Head Count from HOA Organizer
Public Works Training (WQ issue #3)	SWPPP Training	81	training sign in and presentation in Appendix
Bacteria Education Brochure (WQ issue #2)	Informational Brochure mailed to every household along with the potable water quality report	8,500	Printing receipt and brochure in Appendix

* Documentation is attached in Appendix A

Measure of Effectiveness Form	
Local Activity (same as above)	Rationalization of effectiveness or ineffectiveness
Stormwater Utility Information Mailer (WQ issue #1)	Effective - All mailed utility billing customers received the mailer
Stormwater Open House (WQ issue #1)	Effective - Attendees engaged staff and supplied information on local issues, but attendance was limited
Aquatic Center Summer Camp Macroinvertebrates Camp!	Effective - served as a part of the current year outreach program development for school age outreach.
Stormwater Survey (WQ issue #1)	Effective - All mailing addresses receive brochure, 314 responses to be used for outreach development
Villas at Peppers Ferry Stormwater Open House	Ineffective - Attendees engaged staff and supplied information but no attendance record was kept.
Storm Drain Marker Installation	Effective - The 2016 survey responses indicate that 59% of survey respondents have seen storm drain markers and 37% understand that stormwater drains to creeks. Extrapolating to all households: (9,400 households)(37%) = 3,480
Public Works Training (WQ issue #3)	Effective - 88% of staff attended and average knowledge quiz grade was 80%
Bacteria Education Brochure (WQ Issue #2)	Effective - All mailing addresses receive brochure
For an ineffective activity identified above, describe modifications to be made for next reporting year (e.g. different activity or different approach): Water quality issue #1 target audience revised to middle school sixth grade classes to address diificulty of reaching 20% of audience with participation events.	

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

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

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

The information table, at a minimum, will:

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

The information table will be updated as new outfalls come on-line. The Town will notify downstream MS4s where applicable and in writing of any new or newly discovered interconnections that occur with new development. Interconnections include VDOT and Montgomery County.

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

Responsible individual for implementation: Town Engineer

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

Implementation schedule: The storm sewer mapping and information table will be updated in accordance with the current general permit and as described above by June 30, 2017.

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

BMP 3.1 Annual Reporting Form	
Storm Sewer System Information Table is available in Appendix B	
Has the Information Table been updated per the current General Permit and as described in this BMP? (yes/no)	☐ Yes ☒ No
If no, explain: See BMP schedule, will be completed consistent with the permit and BMP schedule. Target completion date is June 30, 2017.	
Notifications to interconnected MS4s	
➢ During the reporting year, were any new outfalls installed or identified that physically interconnect to another MS4? (yes/no)	☐ Yes ☒ No
If yes, has the interconnected MS4 received written notification from the Town regarding the interconnection? (yes/no or not applicable)	☐ Yes ☐ No ☒ N/A
If yes, list the notified MS4 written notifications by providing the MS4 entity notified, date of notification, and location information of the interconnection): N/A - No new interconnections.	
If an interconnected MS4 was not notified of a new interconnection, please explain why and indicate when the notification will be provided: N/A - No new interconnections.	

Estimated drainage acreage to each HUC and impaired water		
RU07 = 1020 acres (Wilson Creek)	NE59 = 1525 acres (Stroubles Creek)	RU05 = 63 acres (Brake Branch)
NE58 = 5343 acres (Crab Creek)	RU04 = 989 acres (Elliott Creek)	NE56 = 0.40 acres (Mill Creek)

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

Measure of Effectiveness Form
If any potential illicit discharges were identified or reported (refer to reporting for BMP 3.2 and 3.3), was outfall mapping used to address the issue: N/A - Mapping was not necessary to identify the source of an illicit discharge during the reporting year. However, the BMP is expected to be effective in the case an illicit discharge source is unknown and must be tracked.

BMP 3.2 Prohibit non-stormwater discharges (Section II B.3.b)

Description: The Town of Christiansburg prohibits non-stormwater discharges, including illegal dumping, into the storm sewer system through Chapter 16, Article IV of the Town Code (Illicit Discharges). Article IV prohibits illicit connections and discharges to the storm sewer system and establishes legal authority to inspect, conduct surveillance, and monitor to ensure compliance. The Article also gives the Town the authority to initiate enforcement actions and establishes enforcement penalties and for violations.

Necessary documentation for implementation: (1) Chapter 16, Article IV of the Town Code; (2) A list of any instances of violation and summary of actions taken by the Town; (3) Completed IDDE Tracking Forms, as provided in Appendix D of the Town's IDDE Program Manual.

Responsible individual for implementation: Town Engineer

Objectives and expected results in meeting measurable goals: The objective is to effectively prohibit non-stormwater discharge to the extent allowable under federal, state, or local law, regulation, or ordinance. Expected result is the appropriate use of enforcement actions to eliminate an illicit discharge, when necessary.

Implementation schedule: Implementation of Chapter 16, Article IV of the Town Code will continue with implementation consistent with the methods described in BMP 3.3.

Method to determine effectiveness: Effectiveness will be determined based on the elimination of reported or observed non-stormwater discharges. Effectiveness will also be based on implementation of the inspections, surveillance, monitoring, and enforcement procedures in response to reports.

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

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

Measure of Effectiveness Form	
Number of potential illicit non-stormwater discharges reported or observed, as described in Appendix C:	3
Number of potential illicit non-stormwater discharges resolved, as described in Appendix C:	3
➢ Is the number in the two boxes above is the same? (yes/no)	☒ Yes (BMP effective) ☐ No (See below)
If no, based on information provided for non-resolved potential illicit non-stormwater discharges, describe any necessary modifications to the BMP to improve effectiveness in resolving potential illicit non-stormwater discharges: N/A - all reported potential illicit discharges resolved.	

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

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

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

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

Responsible individual for implementation: Town Engineer

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

Implementation schedule: The Town will screen at least 50 outfalls each year. Starting July 1, 2015, methods in the Town's IDDE Program Manual will be used to identify and follow-up from screening results, as necessary per the Town's IDDE Manual. Methodology for prioritizing outfalls will be developed and implemented by July 1, 2016.

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

BMP 3.3 Annual Reporting Form	
Outfall Screening Record Summary	
Total number of outfalls (refer to BMP 3.1):	111
Total number of outfalls screened during the reporting year:	111
Were at least 50 outfalls screened during the reporting year? (yes/no)	☒ Yes (Objective achieved) ☐ No (Objective not achieved)
If 50 outfalls were not screened during the reporting year, explain why with a schedule to screen additional outfalls the following reporting year:	
Were the outfalls screened selected based on prioritization criteria (land use, age of infrastructure, historical issues, etc.)? (yes/no)	☐ Yes (Objective achieved) ☒ No (Objective not achieved)
If no, explain why with a schedule for prioritizing outfalls: All known outfalls were inspected due to the 2014-2015 inspection deficiency.	
Were follow up investigations performed for all outfalls where screening characterized the outfall as potential, suspected or obviously having an illicit discharge? (yes/no)	☐ Yes (Objective achieved) ☐ No (See below) ☒ Partially (See below)
If no, explain why with a schedule for investigating outfalls characterized as potential, suspect or obvious for being subject to an illicit discharge: All 111 known outfalls were screened in the permit reporting year. Of ten outfalls listed as illicit discharge candidates, one outfall (NE59SBA08) was again identified as a potential illicit discharge location. A more detailed investigation of this outfall and the upstream drainage area is scheduled for the 2016-2017 permit year. The remaining nine outfalls were characterized as maintenance issues based on the 2015-206 inspections.	
Screening results are summarized in Appendix D. **Refer to Appendix C for detail of any follow-up actions necessary based on screening results.**	

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

Measure of Effectiveness Form	
Number of outfalls characterized as potential, suspect or obvious for an illicit discharge that received a follow up investigations:	7
Number of investigations that were closed:	6
Based on the percentage of investigations closed, provide rationale for the effectiveness or ineffectiveness of the BMP. If ineffective, describe modifications to the BMP to improve efficiency: The entry of the inspection data into an access database has provided for efficient review of outfall inspections. Six outfall inspections Outfall NE59SBA08 and the associated drainage area will receive wet weather drainage area nad outfall inspection during the 2016-2017 permit year.	

BMP 3.4 Facilitate public reporting of illicit discharges and provide response (Section II B.3.d)

Description: The Town will promote, publicize, and facilitate public reporting of illicit discharges into or from the Town's MS4 with information describing an illicit discharge and contact information on the Town's stormwater website and with inclusion of educational material described in BMP 1.2. The Town will investigate all reports using methods and procedures described in the Town's IDDE Program Manual described in BMP 3.3. Tracking of reports will be recorded in the IDDE Tracking form in Appendix D of the IDDE Program Manual.

Necessary documentation for implementation: (1) Web address of posted material; (2) Educational material with illicit discharge reporting information; (3) Completed IDDE Tracking Form for each incident.

Responsible individual for implementation: Town Engineer

Objectives and expected results in meeting measurable goals: The objective is to first educate the public to recognize an illicit discharge and provide contact information that allows for the reporting of an observed illicit discharge. The ultimate objective is to investigate and eliminate reported illicit discharges.

Implementation schedule: Illicit discharge material and contact information will be placed on the website by July 1, 2015. Response to illicit discharge reports will be on-going, occurring in response to reports per the IDDE Manual.

Method to determine effectiveness: Effectiveness will be measured by the percentage of illicit discharge reports that are closed (as will be documented in the IDDE Tracking Forms).

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

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

Measure of Effectiveness Form	
Total # of potential illicit discharges reported by the public for the reporting year:	3
Total # of potential illicit discharge reported by the public for the reporting year that have been resolved:	3
Percentage of reported illicit discharge instances that have been resolved:	100
Were all potential illicit discharge reports resolved? (yes/no)	☒ Yes (BMP Effective) ☐ No (See below)
If no, provide explanation of why reports were not resolved and, if necessary, modifications needed for the BMP to improve effectiveness: N/A - All reports were resolved.	

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

Description: Regulated land disturbance activity in the Town of Christiansburg is subject to Chapter 16, Article II of the Town Code (Erosion and Sediment Control). Regulated land disturbance activities are those defined in §62.1-44.15:51 of the Code of Virginia that result in the disturbance of 10,000 square feet or greater and those on individual residential lots or sections of residential developments being developed by different property owners and where the total land disturbance of the residential development is 10,000 square feet or greater. The Town utilizes an agreement in lieu of a plan as provided in §62.1-44.15:55 of the Code of Virginia for this category of land disturbances.

Section 16-25 of Article II requires a land disturbance permit from the Town prior to engaging in land disturbance activity that is conditioned on an approved erosion and sediment control plan or an agreement in lieu of a plan in accordance with the Erosion and Sediment Control Law (§62.1-44.15:51 et seq. of the Code of Virginia). Plans shall be compliant with the minimum standards identified in 9VAC25-840-40 of the Erosion and Sediment Control Regulations.

Section 16-27 of Article II provides legal authority for the Town to conduct inspections with an inspector holding an ESC Inspector's Certification from DCR/DEQ. Inspections will be conducted:

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

Section 16-24 of Article II also provides legal authority for the Town to require compliance with the approved plan and require changes to an approved plan when an inspection finds that the approved plan is inadequate.

Necessary documentation for implementation: (1) Chapter 16, Article II of the Town Code; (2) ESC Plan(s) approved by the Town, including procedures and documents used in plan review (e.g. checklists); (3) Documentation of ESC Inspector Certification; (4) Completed ESC Inspection Forms for each regulated project; (5) Notice to Comply and/or Stop Work Orders documentation and documentation of follow-up actions.

Responsible individual for implementation: Town Engineer

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

Implementation schedule: The implementation of this BMP will be on-going with all regulated land disturbance activities in the Town that disturb greater than 10,000 square feet.

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

BMP 4.1 Annual Reporting Form	
Total sites for reporting year subject to Chapter 16, Article II of the Town Code (Erosion and Sediment Control) and equal to or greater than 10,000 sf, including those issued an agreement in lieu of a plan.	154
Did the Town implement and enforce Article II of the Town Code (Erosion and Sediment Control), requiring an approved plan or agreement in lieu of plan, where appropriate, prior to commencement of land disturbance for all sites included in the number above? (yes/no)	yes
If no, explain: N/A - The Town implements and enforces the ESC Program as a VESCP Authority.	
Did the Town inspect land-disturbing activities for compliance with an approved erosion and sediment control plan or agreement in lieu of a plan in accordance with the ESC Laws and Regulations minimum standards? (yes/no)	yes
If no, explain specific instances per project: N/A - The Town implements and enforces the ESC Program as a VESCP Authority.	
If yes, summarize enforcement actions taken: During the reporting year: 6 notices to comply were issued, 1 stop work order was issued and 5 re-inspections to verify Corrective Actions required were performed.	
If yes, were the Town's Inspector's DEQ Certified ESC Inspectors? (yes/no)	yes

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

Measure of Effectiveness Form	
For the sites subject to Chapter 16, Article II of the Town Code (Erosion and Sediment Control), do the number of enforcement actions (notice to comply or stop work orders) seem excessive?	☒ No (BMP effective) ☐ Yes (See below) ☐ N/A (No activities)
Discuss the nature of excessive enforcement action issues. Provide rationale that determines if the BMP is effective or ineffective. If ineffective, what modifications could improve effectiveness? The Town's ESC Program is implemented and enforced and effective at minimizing sediment transport from construction sites.	

BMP 4.2 Receive and respond to complaints regarding land disturbing activity (Section II B.4.c4)

Description: The Town will promote to the public through the stormwater webpage information on land disturbance erosion and sediment controls and provide a contact number for reporting complaints regarding regulated land disturbing activities. The Town will initiate investigation of all reports within 72-hours and address the issue with the construction site operator by requiring maintenance to ESC controls, or plan modifications, as necessary, in accordance with BMP 4.1.

Necessary documentation for implementation: (1) Web address of posted material; (2) Land disturbance complaint/report tracking record with date, description, and resolution for each complaint (the Town will utilize the IDDE Tracking Form in Appendix D of the Town's IDDE Program Manual for documentation) .

Responsible individual for implementation: Town Engineer

Objectives and expected results in meeting measurable goals: The objective is to educate the public to understand the purpose of ESC controls on a land disturbance activity, recognize the off-site impacts resulting from potential failure of ESC controls, and provide contact information that allows for the reporting of an off-site impact and ultimately the resolution of a reported issue.

Implementation schedule: Information regarding ESC controls for land disturbance activities and for reporting complaints will be placed on the website by June 1, 2016.

Method to determine effectiveness: Effectiveness will be measured by the percentage of resolved complaints that are reported by the public.

BMP 4.2 Annual Reporting Form			
The total number of complaints from the public related to land disturbance activity during the reporting year:			0
Complaint #	Date of complaint	Description of complaint	Resolution of the investigation
N/A - no complaints	N/A	N/A	N/A
N/A - no complaints	N/A	N/A	N/A
N/A - no complaints	N/A	N/A	N/A

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

Measure of Effectiveness Form	
Were all complaints resolved?	☐ Yes (BMP effective) ☐ No (See below) ☒ N/A (no complaints)
Describe the reason for any unresolved complaint and any necessary program modifications to ensure complaints are resolved in the future. If no modifications are needed, provide rationale: N/A - no complaints	

BMP 4.3 Ensure land disturbance activities secure VSMP General Permit (Section II B.4.c.7, d)

Description: Regulated land disturbance activities are subject to Chapter 16, Article III of the Town Code (Stormwater Management Ordinance). Chapter 16 of the Town Code requires evidence that the General VPDES Permit for Discharges of Stormwater from Construction Activities (VAR 10 General Permit) is obtained prior to the issuance of a land disturbance permit. The VAR10 General Permit and Section 16-54 of Article III requires a Pollution Prevention Plan for regulated land disturbances equal to or greater than an acre. Through the development and implementation of the Pollution Prevention Plan, appropriate controls to prevent non-stormwater discharges such as wastewater, concrete washout, fuels and oils, and other illicit discharges will be implemented. ESC inspections described in BMP 4.1 will include inspection components that ensure implementation of Pollution Prevention Plans.

Necessary documentation for implementation: (1) Chapter 16, Article III of the Town Code; (2) Project-specific Pollution Prevention Plan (maintained within SWPPPS on construction sites by the site operator); (3) Record of evidence of General Permit coverage for regulated construction activity.

Responsible individual for implementation: Town Engineer

Objectives and expected results in meeting measurable goals: The objectives are: (1) To provide a mechanism for assuring that VSMP General Permit coverage is obtained for all land disturbances exceeding 1-acre. The expected result is that coverage is obtained for all applicable land disturbances prior to commencement of the activity; (2) Ensure development and implementation of Pollution Prevention Plans through the contractor's requirement to develop and implement the SWPPP per the VAR10.

Implementation schedule: The Town will continue verifying regulated land disturbances greater than or equal to 1-acre will obtain a VAR10 General Permit prior to commencement of land disturbance activity.

Method to determine effectiveness: Effectiveness will be determined based on: (1) all regulated land disturbance activity operating under VSMP General Permit coverage and a SWPPP, (2) the number of violations related to pollution prevention from construction activity as identified in the reporting for BMP 3.2, 3.3, 3.4, and 4.2.

BMP 4.3 Annual Reporting Form	
The total number of regulated land disturbance activities during the reporting year requiring a VAR10 General permit (greater than or equal to 1-acre).	29
Did the Town ensure each regulated land disturbance activity secured coverage under the General VPDES Permit for Discharges of Stormwater from Construction Activities (VAR 10 General Permit)? (yes/no)	yes
If no for any of the activities, explain: N/A - The Town verifies regulated activities have VAR10 coverage.	
Did the Town verify that project-specific SWPPPs were developed and maintained on-site for each activity? (yes/no)	no
If no, for any activity, explain: The Town verifies SWPPPs are developed during preconstruction meetings prior to town permit issuance, and during inspections. Some current permit holders that were granted permits by DEQ as reissuances at the 2014 permit rollover have yet to seek Town Land Disturbance Permits and initiate land disturbance. Other reissued permits are issued to sites that are dormant and not being inspected.	
Did any illicit discharge reports stem from any of the regulated activities? (also see reporting for BMPs 3.2, 3.3, 3.4, and 4.2) (yes/no)	No
If yes, for any activity, explain: Potential illicit discharges related to concrete wash out were investigated but no actual discharges were found.	

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

Measure of Effectiveness Form	
Do all regulated activities have VAR10 permit coverage and SWPPP?	☐ Yes (BMP effective) ☒ No (See below) ☐ N/A (No activities)
Were any instances of an illicit discharges from any regulated activity resolved? (also see reporting for BMPs 3.2, 3.3, 3.4, and 4.2)	☐ Yes (BMP effective) ☐ No (See below) ☒ N/A (No incidents)
If no was answered for either effectiveness question, explain any necessary BMP modifications to improve implementation of the goals of the BMP? See BMP 4.3 explanation of sites that received DEQ permit reissuance. Town staff will reach out to all permit holders to mandate SWPPP development or permit closure.	

BMP 5.1 Compliance to post-construction stormwater management regulation (Section II B.5.a, b. d.1,2)

Description: New development and development on prior developed lands in the Town of Christiansburg is subject to Chapter 16, Article III of the Town Code (Stormwater Management Ordinance) that ensure post-construction stormwater management (SWM) for all regulated land disturbance activities over 10,000 square feet through plan approval by the Town. Approval from the Town will ensure the SWM Plan has been prepared per the VSMP Regulations that, in part, require that stormwater runoff controls:

- are designed and installed in accordance with the appropriate water quality and water quantity design criteria as required in Part II (9VAC25-870-40 et seq.) of 9VAC25-870; and
- Have an inspection and maintenance plan recorded at the local courthouse.

The Town will retain a copy of each SWM facility inspection and maintenance plan from the approved stormwater management plan for proposed stormwater management facilities to be used with the implementation of BMP 5.3. A stormwater facility maintenance agreement will be required to be recorded prior to plan approval.

Necessary documentation for implementation: (1) Town approved SWM Plans and Calculations (maintained on active construction sites); (2) Material used for plan review (e.g. checklists, BMP Clearinghouse Standards and Specifications); (3) SWM Facility Inspection and Maintenance Plans for approved projects with SWM facilities; (4) Proof of recordation of inspection and maintenance agreements.

Responsible individual for implementation: Town Engineer

Objectives and expected results in meeting measurable goals: The objective is to ensure regulated projects are in compliance with the VSMP Stormwater Management Regulations. The expected goal is that all regulated projects have Town approved SWM Plans with recorded SWM facility inspection and maintenance plans.

Implementation schedule: The implementation of this BMP began July 1, 2014 with the adoption of Chapter 16, Article III of the Town Code.

Method to determine effectiveness: Effectiveness will be measured by: (1) all regulated land disturbance activities having a Town approved SWM Plan; and (2) all stormwater management facilities with recorded inspection and maintenance plans and/or agreements, where applicable.

BMP 5.1 Annual Reporting Form	
Total sites for reporting year subject to Chapter 16, Article III of the Town Code (Stormwater Management Ordinance) and equal to or greater than 10,000 sf, including those issued an agreement in lieu of a plan.	32
Does each activity have an approved SWM plan per the BMP? (yes/no)	yes
If no, explain specific instances per project: N/A - The Town implements and enforces the SWM Program as a VSMP Authority.	
Does the Town have written internal policies and procedures to implement and enforce Chapter 16, Article III of the Town Code (Stormwater Management Ordinance)? (yes/no)	yes
If no, explain: N/A - The Town implements and enforces the SWM Program as a VSMP Authority.	
Was a BMP inspection and maintenance plan recorded at the local courthouse for each project that included a SWM BMP? (yes/no)	yes
If no, explain specific instances per project: N/A - The Town implements and enforces the SWM Program as a VSMP Authority.	

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

Measure of Effectiveness Form	
Do all sites subject to the Stormwater Management Ordinance have an approved plan?	☒ Yes (BMP effective) ☐ No (See below)
Do all sites subject to the Stormwater Management Ordinance have a recorded inspection and maintenance agreement?	☒ Yes (BMP effective) ☐ No (See below)
If no was answered for either effectiveness question, explain any necessary BMP modifications to improve implementation of the goals of the BMP? N/A - BMP effective.	

BMP 5.2 Stormwater management facility tracking and reporting (Section II B.5.e)

Description: The Town will maintain an updated electronic database in Excel format of all known stormwater management (SWM) facilities that discharge into the MS4. The database will include:

- The unique SWM facility ID #;
- The stormwater management facility type;
- A general description of the facility's location, including the address or latitude and longitude;
- The acres treated by the facility, including total acres, as well as the breakdown of pervious and impervious acres;
- The date the facility was brought online (MMYYYY); (June 30, 2005 will be default date if no date is known)
- The sixth order hydrologic unit code (HUC) in which the stormwater management facility is located;
- The name of any impaired water segments within each HUC listed on the 2010 § 305(b)/303(d) Water Quality Assessment Integrate Report to which the stormwater management facility discharges;
- Whether the stormwater management facility is operator-owned or privately-owned;
- The date of the last inspection.

Upon acceptance of a newly constructed stormwater management facility, the facility will be included within the database.

Necessary documentation for implementation: (1) Updated SWM Tracking and Reporting Excel database; (2) Completed inspection checklist forms (see BMP 5.3)

Responsible individual for implementation: Town Engineer

Objectives and expected results in meeting measurable goals: The objective is to maintain an updated record of all of the SWM facilities. The expected result is that the list will be utilized to assist with implementation of BMP 5.3 and will be maintained as new SWM facilities come online.

Implementation schedule: The maintenance of a BMP database will be on-going. Additional information required by the current MS4 General Permit, such as the impervious/pervious breakout of the drainage area to each BMP, will be completed by July 1, 2018.

Method to determine effectiveness: Effectiveness will be measured by the completeness of the annually reported database.

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

Measure of Effectiveness Form	
Is the database complete to include all of the attributes for each new BMP described in this BMP and as required by the MS4 General Permit?	☒ Yes (BMP effective) ☐ No (See below) ☐ N/A (No facilities)
Describe the reason for that the database is incomplete and provide rationale that determines whether or not the BMP needs to be modified to ensure completion of the data base: The Database contains all current BMP information for BMPs coming online in the permit year. Data such as drainage area, % impervious, and "impaired waters discharge to" information continues to be updated on BMPs from previous years. The database will be completed per the BMP schedule.	

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

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

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

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

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

Responsible individual for implementation: Town Engineer

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

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

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

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

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

Measure of Effectiveness Form	
➢ Do dates in the database indicate that inspections were performed for Town-owned (public) BMPs at least once within the reporting year?	☒ Yes (BMP effective) ☐ No (See below)
Describe the reason for inspections that were not performed on Town-owned BMPs and provide rationale that determines whether or not the BMP needs to be modified to ensure completion of inspections: N/A - Inspections performed	
➢ Do dates in the database indicate that maintenance was performed, where necessary and in a timely manner?	☐ Yes (BMP effective) ☒ No (See below)
Describe the reason maintenance was not performed on Town-owned BMPs in a timely manner (e.g. minor repair needed that does not affect function of the facility) and provide rationale that determines whether or not the BMP needs to be modified to ensure completion of inspections: Routine and non-routine maintenance occurs on Town owned BMPs as needed but the database has not been utilized by Public Works to schedule maintenance. Public Works will review the database in the future. An database has been created that itemizes maintenance needs for each BMP.	

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

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

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

Chapter 16, Article III of the Town Code (Stormwater Management Ordinance) requires maintenance, inspection and repair of stormwater management facilities, where necessary.

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

Responsible individual for implementation: Town Engineer

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

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

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

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

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

Measure of Effectiveness Form	
➢ Do dates in the database indicate that inspections were performed for at least 20% of the privately owned BMPs as necessary for each for the reporting year to achieve the 5-year objective?	☒ Yes (BMP effective) ☐ No (See below)
If less than 20% of privately-owned BMPs were inspected during the reporting year, provide a schedule to ensure 100% can be inspected prior to the end of the permit cycle (July 1, 2018): N/A - Inspections performed	
➢ Where inspection resulted in the identification of required maintenance, has the Town notified the entity responsible of the maintenance needs with reference to the Stormwater Management Ordinance and a specified timeframe for completing the maintenance?	☐ Yes (BMP effective) ☒ No (See below)
If the entity responsible for maintenance has not been notified, explain: The Town will use the BMP inspection reports to notify private BMP Owners of maintenance needs in the 2016-2017 permit year.	
Have notified entities performed maintenance within the time period specified by the Town?	☐ Yes (BMP effective) ☐ No (See below) ☒ N/A (No instances)
If yes to the previous question, was enforcement action taken?	☐ Yes (BMP effective) ☐ No (See below) ☒ N/A (No instances)
If enforcement action was taken, did it resolve the issue?	☐ Yes (BMP effective) ☐ No (See below) ☒ N/A (No instances)
If the issue was not resolved from enforcement action, described necessary modifications to the BMP to improve effectiveness: The Town will use the BMP inspection reports to notify private BMP Owners of maintenance needs in the 2016-2017 permit year and follow up as needed.	

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

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

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

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

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

Responsible individual for implementation: Town Engineer

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

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

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

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

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

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

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

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

- Mapping that identifies all outfalls, direction of flows, existing source controls, and receiving water bodies;
- A discussion and checklist of potential pollutants and pollutant sources;
- A discussion of all potential non-stormwater discharges;
- Written procedures, or reference to written procedures, designed to reduce and prevent pollutant discharge;
- A description of the applicable training described in BMP 6.3;
- Procedures to conduct an annual comprehensive site compliance evaluation; and
- An inspection and maintenance schedule for site specific source controls. The date of each inspection and associated findings and follow-up shall be logged in each SWPPP.

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

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

Responsible individual for implementation: Town Engineer

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

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

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

BMP 6.2 Annual Reporting Form	
Stormwater Pollution Prevention Plan	
➢ Have SWPPPs been completed for each high priority facility identified in the BMP?	☒Yes ☐No
If no, explain: SWPPP inspections at the Town Public Works Station and Town Landfill/Stockpile site will be initiated in Fall 2016. Roles and responsibilities as listed in section 1.4 will be updated in the 2016-2017 permit year to include the public works personnel maintaining the SWPPPs.	
➢ Did any changes on high priority facilities that could potentially affect stormwater runoff occur during the reporting year (e.g. new outfalls,	☒Yes ☐No
If yes, are the changes reflected in the SWPPP? (yes/no)	☒Yes ☐No ☐N/A
If no, explain why: N/A - Outfalls were located and added to the SWPPP mapping.	

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

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

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

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

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

The plan will also require the following:

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

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

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

Responsible individual for implementation: Town Engineer

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

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

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

BMP 6.3a Annual Reporting Form	
Training Plan	
Has the Town's Written Training Plan been developed? (yes/no)	☒Yes ☐No
Training & Certifications	
Has employee training been provided? (yes/no)	☒Yes ☐No
If no, explain: N/A - Training provided	
Date of latest training to relevant field personnel in the recognition and reporting of illicit discharges:	05/24/2016
Number of employees that participated in the latest training in the recognition and reporting of illicit discharges:	81
Date of last training to relevant employees in good housekeeping and pollution prevention practices:	05/24/2016
Number of employees that participated in the latest training in good housekeeping and pollution prevention practices:	81
Do the number of individuals reported above that participated in training represent all employees that conduct daily activities that could potentially affect stormwater runoff? (yes/no)	☐Yes ☒No
If no, explain: Some personell were off work due to excused absenses	
Did any employees apply pesticides and herbicides? (yes/no)	☒Yes ☐No
If yes, identify the employee and their certification: Public Works provided four certifications that were provided to DEQ during review of the in the 2014-2015 permit year report and are available upon request.	
Provide a summary of the training or certification program provided to emergency response employees that includes training in spill response: 38 Hazmat Operations level certification were provided to DEQ during review of the 2014-2015 permit year report and are available upon request.	

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

Measure of Effectiveness Form	
Did scores from the "Knowledge Check" quiz improve from the previous training? (yes/no)	☐ Yes (BMP effective) ☐ No (See below) ☒ N/A
If no, describe modifications to the BMP to increase effectiveness (e.g. training frequency, training material, etc.): The measure of effectiveness will be completed per the BMP schedule.	

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

BMP 6.3b Annual Reporting	
Pesticides and Herbicides	
Number of contracts executed during the reporting year that includes application of pesticides and herbicides?	0
Was proof of certification provided for each contract that includes the application of pesticides and herbicides? (yes/no)	☐ Yes ☐ No ☒ N/A (no contracts)
If no, explain:	N/A - No contracts executed

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

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

BMP 6.4 Turf and Landscape Management (Section II B.6.c)

Description: The Town will implement a turf and landscape nutrient management plan (NMPs) that has been developed by a certified turf and landscape nutrient management planner in accordance with §10.1-104.2 of the Code of Virginia on all lands owned or operated by the Town where nutrients are applied to a contiguous area greater than one acre.

In addition, the Town will not apply any deicing agent containing urea or other forms of nitrogen or phosphorus to parking lots, roadways, and sidewalks, or other paved surfaces.

Necessary documentation for implementation: (1) Town of Christiansburg Nutrient Management Plan; (2) Completed Fertilizer Application Record; (3) Ingredients of deicers used.

Responsible individual for implementation: Town Engineer

Objectives and expected results in meeting measurable goals: The objective is to avoid excessive application of nutrients where applied on Town property subject to the NMP. The expected results are reduction of downstream impacts from nutrient loads through documented implementation of the NMP.

Implementation schedule: Applicable lands subject to the NMP, those being a contiguous acre or more, have been identified. Implementation will ensure that 15% of the applicable lands are covered by July 1, 2015, 40% of the applicable lands by July 1, 2016, and 75 % by July 1, 2017 with complete coverage by July 1, 2018.

Method to determine effectiveness: Effectiveness will be measured by the implementation of the NMP through completion of the application record and periodic updates to the NMP to make necessary adjustments based on soils conditions.

BMP 6.4 Annual Reporting Form		
Nutrient Management Plans		
Were nutrients used during the reporting year?	☐ Yes ☒ No	If no, no further reporting necessary for this BMP
Total acreage of lands where nutrient management plans are required:		N/A, no application
Acreage of lands upon which nutrient management plans have been implemented:		N/A, no application
Date of last NMP update:		N/A, no application
Total percentage of land where nutrient management plans are required and being implemented =		6.21 AC, Harkrader Sports Complex. ~3 AC, Aquatic Center.
Does the percentage meet the schedule described in the BMP? (yes/no)		☐ Yes ☒ No ☐ N/A (No application)
If no, explain and provide a schedule for achieving the require implementation requirement: Nutrient management planning was required on 40% of sites requiring planning in 2015-2016, and 75% are required to be developed in the 2016-2017 permit year. Nutrient Management Plans will be developed ib the 2016-2017 permit year.		

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

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

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

Description: The Town will enhance existing environmental safeguard contract language to include references to sections within the Town's Good Housekeeping and Pollution Prevention Manual. The contract language will require Town contractors use appropriate control measures and procedures for stormwater discharges, when applicable. Oversight will be provided through bi-weekly inspections using a contractor inspection form provided in the Manual. Contract language will require contractors address items identified during inspections within a time period appropriate to prevent the potential of non-stormwater discharges. The contract language will also allow the Town to stop-work, address the problem, and recoup cost for the remedy from the contractor.

Contract language described in this BMP is not intended for regulated land disturbance activity addressed with BMPs 4.1, 4.2, and 4.3.

Necessary documentation for implementation: (1) Town of Christiansburg Good Housekeeping and Pollution Prevention Manual; (2) Completed inspection forms; (3) Contract language.

Responsible individual for implementation: Town Engineer

Objectives and expected results in meeting measurable goals: The objective and expected result is to minimize or prevent pollutant discharges from contractor activities.

Implementation schedule: By July 1, 2016, the Town will have developed and begin execution of contract language to require contractors to use appropriate control measures and procedures for stormwater discharges.

Method to determine effectiveness: Effectiveness will be measured by the inspection results specific to work performed by contractors, the responsiveness of contractors to address observed issues, and reported illicit discharges originating from contracted municipal work in the Town.

BMP 6.5 Annual Reporting Form	
Contractor Safeguards	
Has contract language, as described above, been included in contracts with all contractors where the work performed could require appropriate control measures and procedures for stormwater discharges? This does not include regulated land disturbance activity addressed with BMPs 4.1, 4.2, and 4.3 (yes/no)	☒ Yes ☐ No
If no, explain:	
Were bi-weekly inspections performed to ensure oversight? (yes/no)	☐ Yes ☒ No ☐ N/A (no contracts)
If no, explain: SWPPP inspections were required by contract for a stream restoration projects that was exempt from land disturbance coverage under the DEQ guidance for linear projects. An upcoming storm drain project also has SWPPP requirements in the contract language.	

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

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

3.2 Special Conditions for Approved TMDL BMPs

BMP SC.1 Crab Creek *E. Coli* TMDL Action Plan (Section I B)

Description: Christiansburg has been assigned a waste load allocation (WLA) for E. coli in the following TMDLs:

- Crab Creek Watershed TMDL approved on December 2, 2004
- Upper Roanoke River Watershed TMDL approved on June 27, 2007

Christiansburg will develop an action plan to address the WLA that includes:

- A list of legal authorities applicable to reducing E. coli;
- Identification and methods for maintaining a list of practices, methods, and controls implemented to reduce the E. Coli;
- Description of means for incorporation of identified practices, methods, and controls into the public education and outreach and employee training programs;
- Results of an assessment of facilities of concern for significant contribution of E. Coli;
- Develop methodology for assessing effectiveness of the TMDL Action Plan using modeling tools (in-lieu of water quality monitoring), specifically the Excel spreadsheet based Watershed Treatment Model (WTM). Assessment will also incorporate methodology for evaluation of facilities identified to significantly contribute to the POC;
- An annual reporting worksheet consistent with the TMDL Action Plan and the General Permit.

Additional BMPs will be included in this Section of the Program Plan, as necessary, to include implementation of the Action Plan.

Necessary documentation for implementation: (1) *E. coli* TMDL Action Plan; (2) Christiansburg Program Plan Updates, as necessary.

Responsible individual for implementation: Town Engineer

Objectives and expected results in meeting measurable goals: The objective is to achieve reductions required by the TMDLs for *E. Coli*. The expected result is the development of a TMDL Action Plan.

Implementation schedule: The *E. Coli* Action Plan will be developed by July 1, 2015. The schedule developed in the Action Plan will be implemented thereafter.

Method to determine effectiveness: Effectiveness will be determined by the implementation of programmatic BMPs.

BMP SC.1 Annual Reporting Form	
E. coli Action Plan	
Has the *E. Coli* Action Plan been developed?	☒ Yes ☐ No
If no, please explain and provide expected date of completion: _____	

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

Measure of Effectiveness Form	
Are programmatic BMPs implemented per the Action Plan?	☒ Yes ☐ No
If no, explain how the Action Plan can be modified to achieve the required reductions in the required time frames: Bacteria impairment was addressed as a water quality issue	

BMP SC.2 Crab Creek Sediment TMDL Action Plan (Section I B)

Description: Christiansburg has been assigned a waste load allocation (WLA) for sediment in the following TMDLs:

- Crab Creek Watershed TMDL approved on December 2, 2004.
- Upper Roanoke River Watershed TMDL approved on September 7, 2006.

Christiansburg will develop an action plan to address the WLA that includes:

- A list of legal authorities applicable to reducing sediment;
- Identification and methods for maintaining a list of practices, methods, and controls implemented to reduce the sediment;
- Description of means for incorporation of identified practices, methods, and controls into the public education and outreach and employee training programs;
- Results of an assessment of facilities of concern for significant contribution of sediment;
- Develop methodology for assessing effectiveness of the TMDL Action Plan using modeling tools (in-lieu of water quality monitoring), specifically the Excel spreadsheet based Watershed Treatment Model (WTM). Assessment will also incorporate methodology for evaluation of facilities identified to significantly contribute to the POC;
- An annual reporting worksheet consistent with the TMDL Action Plan and the General Permit.

Additional BMPs will be included in this Section of the Program Plan, as necessary, to include implementation of the Action Plan.

Necessary documentation for implementation: (1) Sediment TMDL Action Plan; (2) Christiansburg Program Plan Updates, as necessary.

Responsible individual for implementation: Town Engineer

Objectives and expected results in meeting measurable goals: The objective is to achieve reductions required by the TMDs. The expected result is the development of a TMDL Action Plan.

Implementation schedule: The Sediment Action Plan will be developed by July 1, 2015. The schedule developed in the Action Plan will be implemented thereafter.

Method to determine effectiveness: Effectiveness will be determined by the selection of cost effective BMPs supported by pollutant load reduction quantification to achieve the required pollutant reductions.

BMP SC.2 Annual Reporting Form	
Sediment Action Plan	
Has the Christiansburg Sediment Action Plan been developed?	☒ Yes ☐ No
If no, please explain and provide expected date of completion: _____	

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

Measure of Effectiveness Form	
Does load reduction quantification demonstrate the selected means and methods in the completed Action Plan can achieve the required reductions in the required time frames?	☐ Yes ☒ No
If no, explain how the Action Plan can be modified to achieve the required reductions in the required time frames: The initiation of the Town Stormwater Utility Fund will provide the funding to plan and execute the means and methods to achieve quantifiable load reductions. The fund was initiated on July 1, 2016. The 2017-2018 fiscal year budget will include funding to initiate a development process leading to Action Plan means and methods to achieve reductions. Additionally, two stream restoration projects should reach final completion in the 2016-2017 report year and will provide significant quantifiable load reductions to be reported after final completion and evaluation of the as-built conditions.	

BMP SC.3 Roanoke (Staunton) River PCBs TMDL Action Plan (Section I B)

Description: Christiansburg has been assigned a waste load allocation (WLA) for PCBs in the Roanoke (Staunton) River Watershed TMDL approved on December 9, 2010. Christiansburg will develop an action plan to address the WLA that includes:

- A list of legal authorities applicable to reducing PCB;
- Identification and methods for maintaining a list of practices, methods, and controls implemented to reduce the PCB;
- Description of means for incorporation of identified practices, methods, and controls into the public education and outreach and employee training programs;
- Results of an assessment of facilities of concern for significant contribution of PCB;
- Develop methodology for assessing effectiveness of the TMDL Action Plan using modeling tools (in-lieu of water quality monitoring), specifically the Excel spreadsheet based Watershed Treatment Model (WTM). Assessment will also incorporate methodology for evaluation of facilities identified to significantly contribute to the POC;
- An annual reporting worksheet consistent with the TMDL Action Plan and the General Permit.

Additional BMP(s) will be included in this Section of the Program Plan, as necessary, to include implementation of the Action Plan.

Necessary documentation for implementation: (1) Roanoke (Staunton) River Watershed TMDL Action Plan; (2) Christiansburg Program Plan Updates, as necessary.

Responsible individual for implementation: Town Engineer

Objectives and expected results in meeting measurable goals: The objective is to achieve reductions required by the Roanoke (Staunton) River Watershed TMDL for PCB. The expected result is the development of a TMDL Action Plan.

Implementation schedule: The Roanoke (Staunton) River Watershed Action Plan will be developed by July 1, 2016. The schedule developed in the Action Plan will be implemented thereafter.

Method to determine effectiveness: Effectiveness will be determined by the implementation of programmatic BMPs.

BMP SC.3 Annual Reporting Form	
Roanoke (Staunton) River Watershed Action Plan	
Has the Christiansburg Roanoke (Staunton) River Watershed Action Plan been developed?	☒ Yes ☐ No
If no, please explain and provide expected date of completion: _____	

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

Measure of Effectiveness Form	
Are programmatic BMPs implemented per the Action Plan?	☒ Yes ☐ No
If no, explain how the Action Plan can be modified to achieve the required reductions in the required time frames: the Action Plan BMPs include enforcement of existing Town Code related to illicit discharge and future enhanced Public education and Outreach on PCB impairment. The Town intends to refine the PCB TMDL Action Plan to be applicable to both the Roanoke River and Crab Creek TMDLs. The Crab Creek PCB TMDL Implemenation Plan is under development and is currently in a public comment period. Upon completion of the Crab Creek TMDL the Town will devlop a plan compatible with both TMDLs.	

Appendix A – BMP 2.2 Documentation of Public Participation Activities

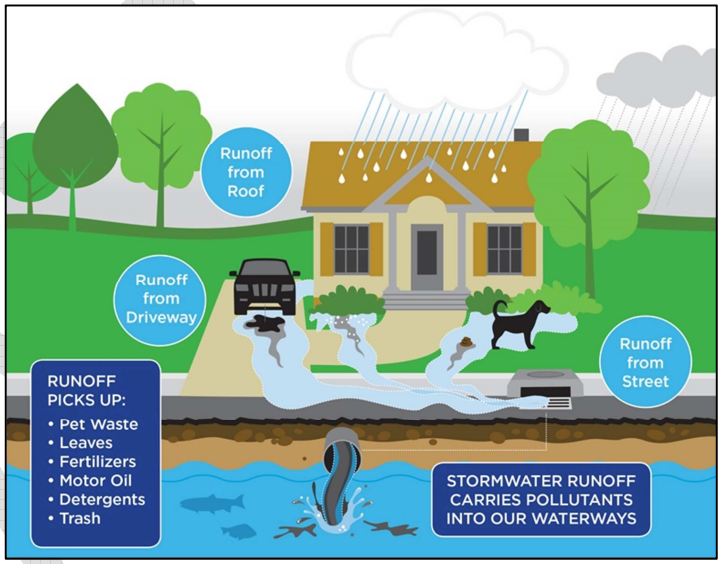
Upcoming Council Action: Stormwater Utility Fee & Enterprise Fund

Christiansburg Town Council will vote on the proposed Stormwater Enterprise Fund and implementation of a stormwater utility fee in June 2016. This fee would help offset the cost of stormwater infrastructure projects and the implementation of state and federally mandated stormwater programs.

If approved, a stormwater utility fee will be assessed for all utility customers beginning July 1. This fee would be reflected on the August 1 utility bills. **Please read the information below to learn more about the stormwater utility fee and how a stormwater enterprise fund may affect you.**

What is stormwater?

Stormwater is rain or melted snow that does not soak into the ground.



As this stormwater runoff makes its way into nearby creeks or streams, it can pick up pollution along the way (such as fertilizer, leaves or pet waste), which in turn pollutes the creek or stream. The number one source of surface water pollution in the United States is urban stormwater runoff. In addition, during times of heavy or frequent precipitation, the rain or snow may not have anywhere to go, which can result in flooding.

What is a stormwater enterprise fund?

Like all other urbanized areas in Virginia, Christiansburg is bound by law to proactively keep stormwater pollution from entering creeks and streams. These state and federal requirements make it necessary for the Town to invest in stormwater management programs, activities and capital projects.

The resources needed to operate and maintain the stormwater drainage system, fund stormwater capital projects and comply with the requirements of the Virginia Stormwater Management Program and Municipal Separate Storm Sewer System (MS4) program amount to $1-2 million annually (this figure may vary depending on the availability of other funds, such as grant monies, each year). Without a dedicated source of funding, meeting these important community needs would compete for funding with other critical local government services.

A **stormwater enterprise fund** would provide a balanced approach to meet these needs. Similar programs are already operating throughout communities in Virginia. Numerous localities throughout Virginia have established stormwater utility fees, including: the Town of Blacksburg and the cities of Lynchburg, Richmond, Roanoke, Staunton and Harrisonburg.

A **stormwater utility fee** would be implemented as part of the stormwater enterprise fund. Funds generated by the stormwater utility fee would **only** be used for stormwater related needs, helping ensure that the Town's stormwater program is sustainable over time. The Town's stormwater program is dedicated to implementing capital stormwater projects, addressing stormwater quality improvements and funding the increased maintenance costs of stormwater infrastructure.

How is a stormwater utility fee determined?

To determine a stormwater utility fee, the Town took into account the cost of meeting stormwater requirements and determined the average square footage of impervious surface (hard surfaces that shed rain water, such as driveways, roofs, walkways and patios) of a residential unit, which set a baseline for the proposed stormwater utility fee.

The average amount of residential impervious surface determines the Stormwater Billing Unit (SBU). A SBU represents the mean value of impervious surface for all single-family residences in town.

A SBU sets a common standard with which to compare larger, non-residential properties and residential properties. One SBU for the Town of Christiansburg equals 3,030 square feet of impervious surface. The SBU is based on the statistical average of impervious areas of single-family residences in town.

What would a stormwater utility fee cost me?

The Town of Christiansburg's proposed SBU rate is $6/monthly.

R**esidential properties** would be charged one SBU rate of $6/monthly for each dwelling unit. Such properties may include, but are not limited to, single-family houses, duplexes, apartments, townhouses, condominiums and mobile homes.

Non-residential properties would be assessed based on a tiered system. These properties do not serve as dwelling units and may include retail properties, hotels, motels, extended living facilities, restaurants, offices, industrial properties, parking lots, churches and recreational and cultural facilities.

The proposed tiered system and associated fees are based on multiples of the 3,030 square feet SBU. For example, if a developed non-residential property contains 37,500 square feet of impervious surface, the property would be assessed in the tier range of 30,001-40,000 square feet and would be billed $59.41/monthly. This fee is calculated by dividing 30,001 (the low end of the tier) by 3,030 (the SBU) and then multiplying by $6 (the SBU rate).

Mixed-Use Properties that contain at least one residential unit and impervious area associated with non-residential use would be charged the greater of the fees calculated from the two methods above.

Credits would be available to developed properties which have stormwater facilities and a maintenance agreement with the town. A credit manual would outline the requirements to apply for and receive credits.

When would the stormwater utility fee go into effect?

If approved, the stormwater utility fee would be implemented July 1, 2016. Please note that the stormwater utility fee would appear on your August 1, 2016 utility bill.

How would I be billed?

If approved, a stormwater utility fee would be applied to each utility bill. If the address is a rental property, and/or is unoccupied, or has no water meter or direct utility bill, the property owner would receive the bill for the stormwater utility fee. The property owner would be responsible for payment of the stormwater utility fee even if other utility services have been suspended.

How would a stormwater enterprise fund benefit me?

By having a dedicated source of funding for stormwater improvement and maintenance, the Town will be able to undertake projects that will help:

- Reduce flooding of roadways and private properties
- Improve water quality in our creeks and streams
- Improve maintenance and inspection frequency of existing storm drain systems to help ensure working order

Why is stormwater management important?

By maintaining an effective stormwater management program, the Town can help ensure the overall health of our stormwater infrastructure. A stormwater management program helps preserve the health of town creeks and streams, which run into the New River – our source of drinking water. Other benefits include preventing stream pollution, reducing stream bank erosion and lessening the impact of flooding.

Planning a proactive approach to stormwater not only meets state and federal requirements, but ensures that the town is capable of meeting stormwater needs for years to come. A stormwater enterprise fund is a proactive approach to stormwater management, increasing the overall infrastructure health of the town.

Who can I call with questions about stormwater?

Please contact the Engineering Department at (540) 382-6120 with any questions regarding stormwater or the stormwater enterprise fund. You may also visit www.christiansburg.org/stormwater to find more information, view your property's proposed fee with our GIS application, and check out a list of potential stormwater projects currently under consideration.

Proposal for the Development of a Stormwater Enterprise Fund

Public Information Meeting

Prepared by: The Christiansburg Stormwater Stakeholders Committee

Town of Christiansburg , Virginia

February 18, 2016

Outline

- This Presentation will:
  - Describe the Stormwater Stakeholders Committee and their Charge,
  - Define stormwater,
  - Discuss the regulations that the Town must comply with,
  - Detail why an Enterprise Fund is needed, and
  - Describe the nature of the fee associated with the fund.
  - Introduce the Stakeholders Committee Recommendation

The Charge

- The SSC, appointed by Town Council, represents the community with interests from business, citizen, and non-profit organizations.
- The Stormwater Stakeholders Committee (SSC) has developed a recommendation for the Christiansburg Town Council that defines the structure and implementation of a Stormwater Enterprise Fund

Town of Christiansburg
Stormwater Stakeholder Committee

Charge:

The Town must establish and operate a comprehensive Stormwater Management Program to meet critical regulatory obligations associated with water quality and quantity control. The Town must operate a Virginia Stormwater Management Program that complies with recently amended regulations and legislation. The Town must implement the requirements of the General Permit for their Municipal Separate Storm Sewer System (MS-4) and associated Total Maximum Daily Load (TMDL) Studies. Additionally, the Town must maintain its stormwater infrastructure and protect its citizens from property damage. A recommended and Council supported funding source for meeting these regulatory mandates and expanded infrastructure demands is a Stormwater Fee. The Stormwater Stakeholder Committee (SSC), comprised of representatives of the residential, commercial, non-profit and business sectors, is to:

- Evaluate the Town's proposed stormwater fee structure and its implementation;
- Engage and educate the public;
- Recommend stormwater spending priorities, a credit system, and a level of service for the stormwater program;
- And advise the Town Council accordingly.

The SSC is requested to compile its recommendation to Council in a period of 12 weeks. The Town will make available trained meeting facilitators and Town staff to provide, interpret and present data pertaining to the process of developing a fee structure and public outreach program.

The Committee

- **Comprised of Community and Business Leaders**
  - Lance Porter – Dish Network
  - Thom Rutledge – Shelor Motor Mile
  - Sam Bauer – Community Advocate
  - James VanHoozier – Christiansburg Town Council
  - Daniel Maderic – Trout Unlimited
  - Addis Ainsley – Corning
  - Bryan Rice – Rice Realty
  - Allan Cox – Home Depot (limited participation)
  - Eric Woody – Showcase Homes (unable to participate)
- **Town Staff**
  - John Burke
  - Dayton Poff
  - Wayne Nelson, PE
- **Facilitator**
  - Andrew Kassoff, PE, PG, LEED AP – EEE Consulting, Inc.

The Process

Six Meetings, Every Two weeks for 3 months

1. Review of the Charter, the Enabling Legislation and Introduction to Stormwater Concepts and Stormwater Utility Fees
2. Evaluation of Conditions of the Town, Revenue Demands and Impervious Surface Relationships
3. Fee Structure Development (Level of Service)
4. Billing and Administration
5. Fee Credit Program and Public Outreach Program
6. Finalized Recommendation to Council

What Is Stormwater Runoff?

Precipitation from rain or snow that does not soak into the ground.

It flows over hard (impervious) surfaces, picking up pollutants such as:

- oil,
- pesticides,
- pet waste and
- debris
- Sediment
- Excess Nutrients

This material flows into the Town's storm sewer system and ultimately our natural waterways.

What Is Impervious?

- Hard surfaces, or impervious areas, such as:
  - driveways,
  - parking lots,
  - roads,
  - sidewalks,
  - streets, and
  - roofs

All of these surfaces prevent stormwater runoff from naturally soaking into the ground.

Examples of Impervious Surface

Impervious Surfaces:

- Roofs
- Driveways
- Sheds & Barns
- Outbuildings
- Parking Lots
- Private Roads
- Sidewalks
- Concrete Patios

The Problem

The single greatest impact to surface water quality in the United States is stormwater runoff. Forget the wastewater treatment plants, the industrial discharges and all the "end of pipe" sources.

The Biggest Threat to Our Nation's Water Bodies is…Rain.

National Data sources indicate that for many contaminants, non-point sources are 10 times greater than point sources.

Typical Stormwater Issues

Flooding: Stormwater runoff from intense rainfall can at times exceed the carrying capacity of the stormwater piping system, creating a backup in the system which can lead to the flooding of roads, yards, and structures.

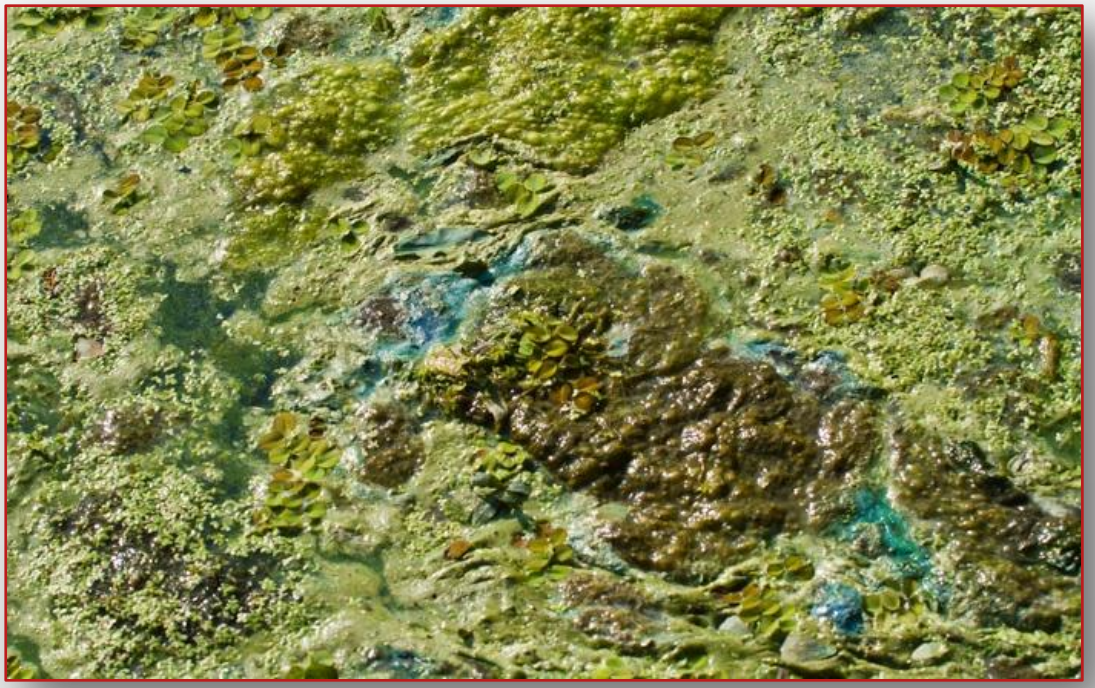
Stormwater Issues

Stormwater Pollution: When rain falls, stormwater flows across impervious surfaces such as sidewalks, driveways, parking lots, and rooftops.

- It mobilizes contaminants and animal waste, picks up chemicals such as oil, pesticides, trash, and sediment, and transports them downstream to streams, rivers, and ultimately the oceans.

Stormwater Issues

- **Water Quality:** Stormwater runoff is a leading cause of nutrient contamination predominately responsible for algae blooms and low oxygen levels, which can result in fish kills and elimination of native vegetation.



Algae Bloom from excess nutrients

Stormwater Issues

Soil Erosion: Uncontrolled stormwater rapidly increases the amount of water flowing into a stream, which can wash away stream banks over time and cut streambeds down deeper to bedrock.

What Entities Regulate Stormwater?

- U.S. Environmental Protection Agency (**Federal**)
- Virginia Department of Environmental Quality (**State**)
  - Recent Stormwater Regulation changes mandate all localities to implement and maintain a comprehensive stormwater management program (Virginia Stormwater management Program (**VSMP**)
- Municipal Separate Storm Sewer System (**MS4**) permit holders (Local)

Who Regulates Stormwater?

- The Town of Christiansburg has a Municipal Separate Storm Sewer System (MS4) permit.

- The permit further obligates the Town to manage its stormwater runoff and meet specific pollution limits.

Why an Enterprise Fund?

- Although federal and state agencies establish and enforce stormwater regulations, ***funding is not provided***. Localities must fund their own stormwater programs – hence the proposal for a stormwater enterprise fund in the Town.

Goals -Stormwater Enterprise Fund

- Protect people and property from flood hazards and damage.
- Provide services that promote the environmental health, safety and proper function of the Town's stormwater infrastructure, and prevent water-related infrastructure failures caused by stormwater runoff.
- Manage the Town's stormwater current and future needs effectively and responsibly, and provide funding to construct stormwater improvements within the Town.
- Prevent additional stream bank erosion.
- Comply with state and federal stormwater regulations.

Stormwater Enterprise Fund

- Who Pays? All owners of developed properties that contribute to stormwater runoff would be charged a fee for service much like utilities for water, sewage, waste management, and recycling.

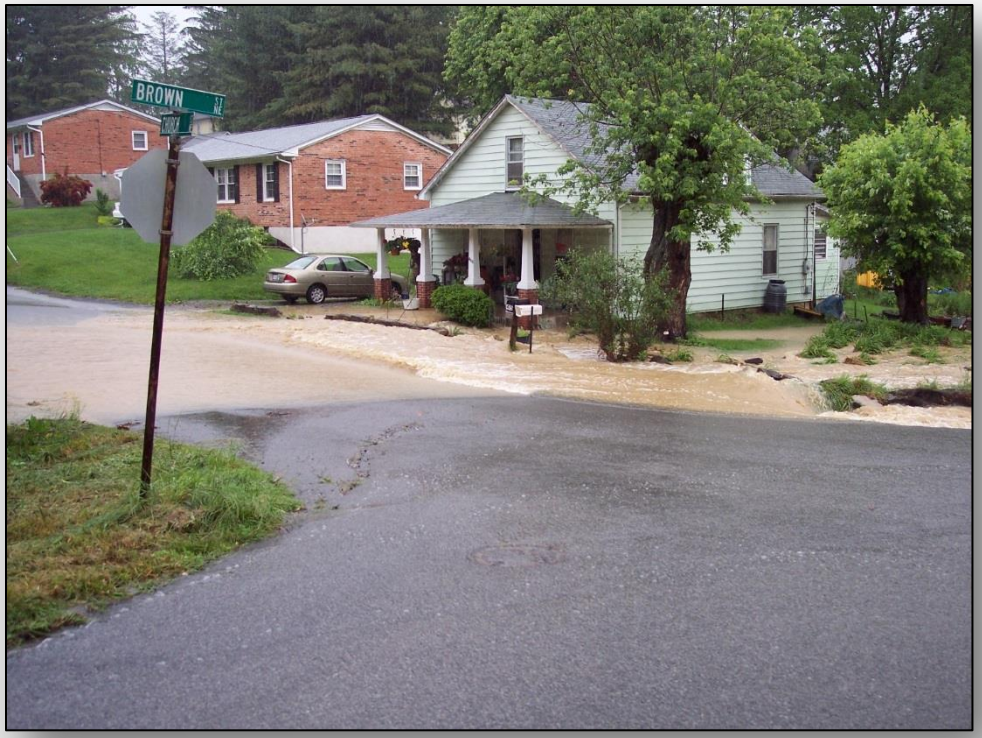
Stormwater Enterprise Fund

Who Is Exempt?

- VDOT rights-of-way
- Town properties
- Other MS-4 Permit Holders (Schools)

All other properties would be required to pay the proposed fee.

Existing Conditions



Church, Brown and Lucas

- Historic Chronic Flooding
- Town Captured VDOT Matching Funds for Retrofit Project
  - $1.0 M First Phase
  - $1.0 M Second Phase
    - Total Costs – Town Receiving 50% VDOT Cost share

Existing Conditions

Skate Park

- Severe Bank Erosion and Sediment Loading
- Town Performed Onsite Repairs and Armoring
- Non-Capital Funding

Existing Conditions

Culvert Relining

- Ongoing Repairs of Stormwater Infrastructure

Existing Conditions

Cambria Avenue

- Area Required Town Involvement and Coordination with Parcel Owner to Manage Flows onto Right–of-Way

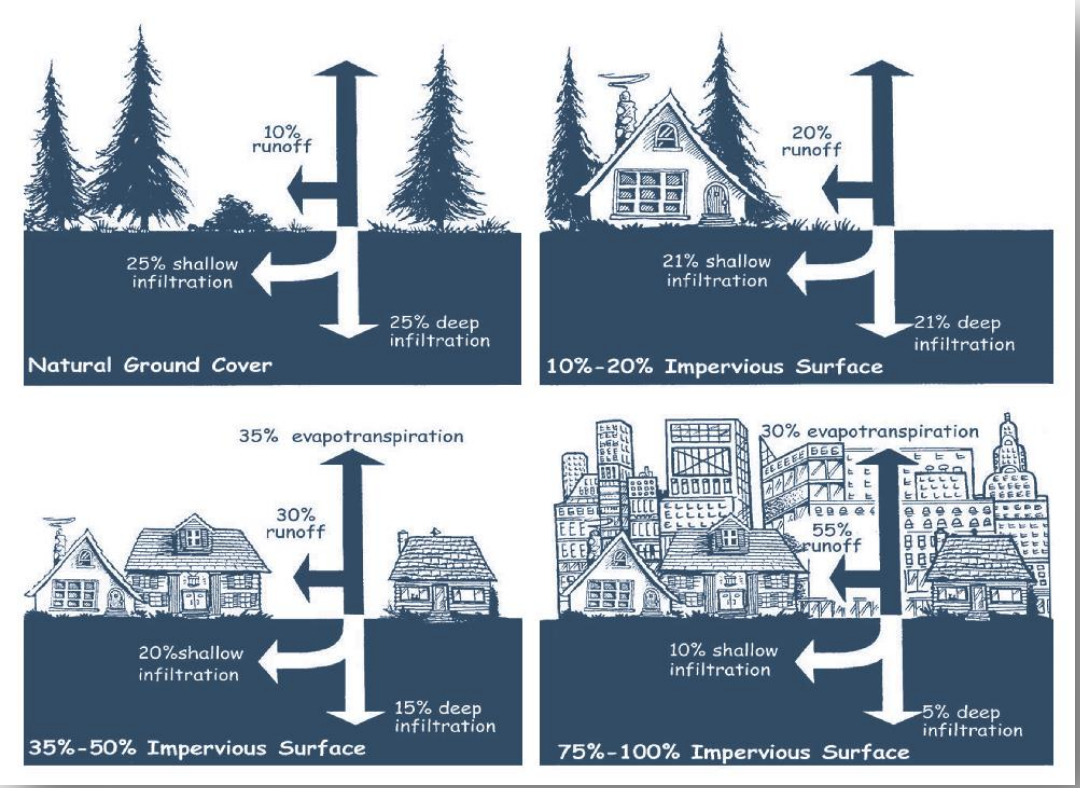
Existing Conditions

Ongoing Street Sweeping Activities

- Integral to MS-4 Compliance
- Labor and Equipment O&M Costs

Fair and Equitable Fee Design

- Base the Fee on the amount of impervious (hard) surface associated with individual properties.
- Most common method nationally for calculating fee with existing utilities and enterprise funds.



Fair and Equitable Fee Design

- Rational – based on impervious area
- Transparent – Funds *must* exclusively go to stormwater related costs
- Consistent – Allows Town to make long terms plans for projects and regulatory requirements

Impervious Conditions - Residential

Robust Statistical Sample = 3,030 square feet per single family residence

- Equivalent Residential Unit or **ERU**
- 7,650 Residential ERUs

Impervious Conditions: Non-Residential

Parcel by Parcel Analysis

- 10,471 Non-Residential ERUs Delineated at this Time

Revenue Considerations /Level of Service

- The Town Currently Providing a High Level of Service
  - Dedicate Public Works Staff for Storm Drain Maintainence
  - Multiple Capital Projects
  - Dedicated engineering and GIS Staff
  - Street Sweeping
  - Regulatory Program Implementation

Revenue Demands – FY 16

Budget Item	Annual Cost	% Utilization towards SWM	SWM Annual Cost
Engineering and Public Works Wages and Benefits	$760,000	100.00%	$760,000
Finance Billing	$200,000	25.00%	$50,000
Street Storm Drain and Sweeper Operational Funds	$95,700	100.00%	$95,700
Storm Drain and Environmental Capital Projects	$818,000	100.00%	**$818,000.00**
Storm Equipment Capital	$160,000	100.00%	$160,000
MS4 Operating	$15,000	100.00%	$15,000
VSMP Program	$1,500	100.00%	$1,500
Engineering Staff Training, Membership, and Certification	$4,000	100.00%	$4,000
GIS Data Acquisition	$17,000	100.00%	$17,000
MS4 Permit Fee to DEQ	$3,000	100.00%	$3,000
TOTAL			**$1,924,200**

"Pay as You Go" Capital Projects

- Church, Brown and Lucas
- Stream Restoration Projects
- Capitalizing on Matching Funds
- Capital Projects Budget will fluctuate based on availability of Grant funding
- Currently this is being funded form the General Fund.

Revenue Demands – Financing Capital Projects

Budget Item	Annual Cost	% Utilization towards SWM	SWM Annual Cost
Engineering and Public Works Wages and Benifits	$760,000	100.00%	$760,000
Finance Billing	$200,000	25.00%	$50,000
Street Storm Drain and Sweeper Operating Capital	$95,700	100.00%	$95,700
Storm Drain and Environmental Capital Projects	$270,000	100.00%	**$270,000**
Storm Equipment Capital	$90,000	100.00%	$90,000
MS4 Operating	$15,000	100.00%	$15,000
VSMP Program	$1,500	100.00%	$1,500
Engineering Staff Training, Membership, and Certification	$4,000	100.00%	$4,000
GIS Data Acquisition	$17,000	100.00%	$17,000
MS4 Permit Fee to DEQ	$3,000	100.00%	$3,000
TOTAL			**$1,306,200.00**

Financing of Capital Demands

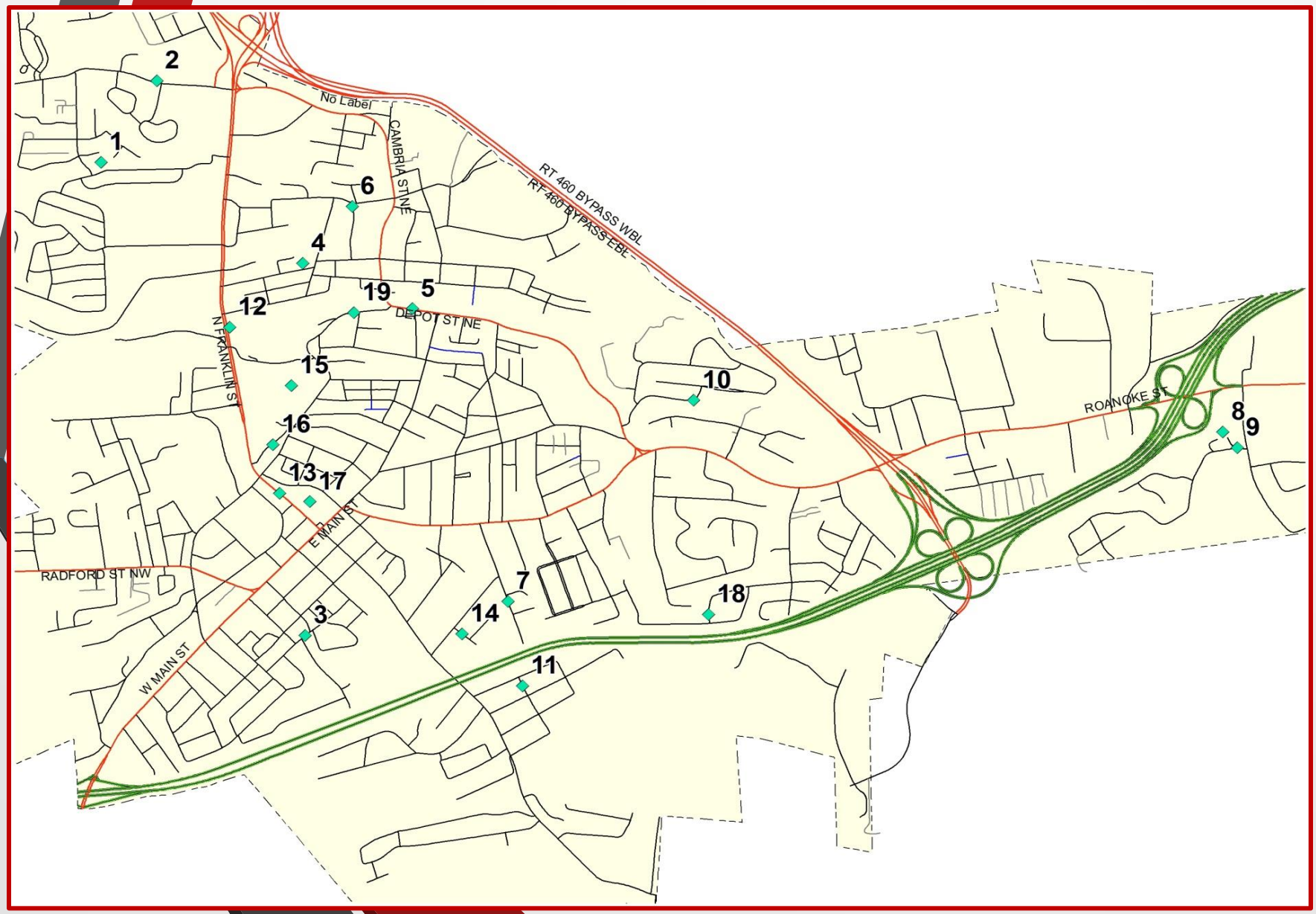
- Approved Capital Projects like Hans Meadow, and Ellet/Rigby may require General Fund Augmentation
- Project and Equipment Funding would be "banked" to address large projects and purchases
- SW Enterprise Fund could be used to service debt
- Could require more General Fund Participation

Potential 15 Year Capital Approach

Map Number	Project	Estimated Cost
1	Blue Leaf Stream Restoration Phase 2	$ 95,000
2	Cambria ST at Forelmont ST Bioretention	$ 130,000
3	Chrisman ST Storm Drain	$ 1,510,000
4	Church Street Bioretention and Storm Drain	$ 195,000
5	East Depot ST to Cambria ST Storm Drain	$ 340,000
6	Church, Brown, Lucas Phase 2 Storm Drain VDOT Revenue Sharing	$ 1,010,000
7	Epperly DR to Robert ST Storm Drain	$ 400,000
8	Lomoor ST Channel	$ 455,000
9	Glade DR Culverts and Restoration to Tower RD	$ 390,000
10	Hans Meadow DR Stream Stabilization and Storm Drain VDOT Revenue Sharing	$ 1,000,000
11	Maple DR Storm Drain	$ 380,000
12	North Franklin ST Bridge Stream Restoration	$ 255,000
13	North Franklin ST Drainage Improvements	$ 620,000
14	South Franklin ST to Epperly DR Storm Drain	$ 470,000
15	Town Branch Restoration DEQ SLAF	$ 280,000
16	Town Branch Stream Restoration - North Franklin ST to Water ST	$ 680,000
17	Town Hall and Police Department Parking Lot Bioretention	$ 100,000
18	Walnut Branch Stream Restoration	$ 1,400,000
19	West Depot ST to Cambria ST Storm Drain	$ 240,000
Project Totals		$ 9,950,000
Potential CIP Plan Timeline		$ 15
One Project per year average		$ 664,000
Per year average Town cost assuming 50% match		$ 332,000

This list is not comprehensive nor is it prioritized. It simply illustrates the magnitude of the potential projects

Potential Capital Improvement Projects



Refining the Fee

Utility Fee Summary			FEE RATE: **$6.00**/ERU/Month	
No. of Single Family Residential Units:	7650			
Total SFRU Yearly Fee:	$550,800			
Non-Single Family Yearly Fee:	$727,086			
	$701,638	*assumed 35% credit on 10% of total non-sf properties (0.035 decrease in value)		
Total Projected Revenue:	**$1,252,438**	Note: This does account for credits.		

Refining the Fee

- Why $6.00/ERU/Month?
- Substantially Similar to Neighboring Communities
- The Lowest Possible Rate To Manage Fund into the Future
- Attempted to Minimize the Burden of a New Fee of Residents and Commercial Interests

Billing and Administration

- Overriding Principal was to minimize Administrative Costs
- No Residential Tier, Minimum Fee applied
  - Residential Use of Roads and other Municipal Impervious Areas
- Use Existing Financial Infrastructure
  - Add to water/sewer/refuse bill
- "Follow the Meter"
  - Individual Meter = Individual Bill (in the majority of cases)
  - Master Meter Serving Multiple Units or No Meter = Bill the Owner
- All Aspects of these Recommendations Will Be Specified in a Town Ordinance.

Who Pays, and How Much?

- The ERU for the town is 3,030 square feet. All residential units would be charged 1 ERU, or $6.00, per month per unit, regardless of size.
- All other uses would be charged $6.00 for every 3,030 square feet of impervious surface per parcel, with a minimum charge of $6.00.

Proposed Residential Fee

1 ERU Per Month Per Unit = $6.00 per month

Residential Fees

- Minimum Rate
  - The flat rate of $6.00 per month will be the minimum charge applied to all properties with greater than 500 square feet of impervious surface. All properties that are assessed a fee will potentially be eligible for a credit, if they operate a Best Management Practice (BMP) that is subject to maintenance agreement with the Town, and that BMP is determined by the Town to be functioning in a manner that meets the criteria for a credit.
- Residential Fees
  - All residential properties (single family detached, Townhomes, Condominiums, Apartments, Duplexes, Triplexes, Quadplexes, and Manufactured homes) will be billed at the minimum rate of $6.00 per month per unit. Individually metered units will receive their bill individually along with their water, sewer and refuse bills. The bill for Master metered properties will be sent to the operating entity of the complex, and that bill will be based on the number of residential units within the complex.

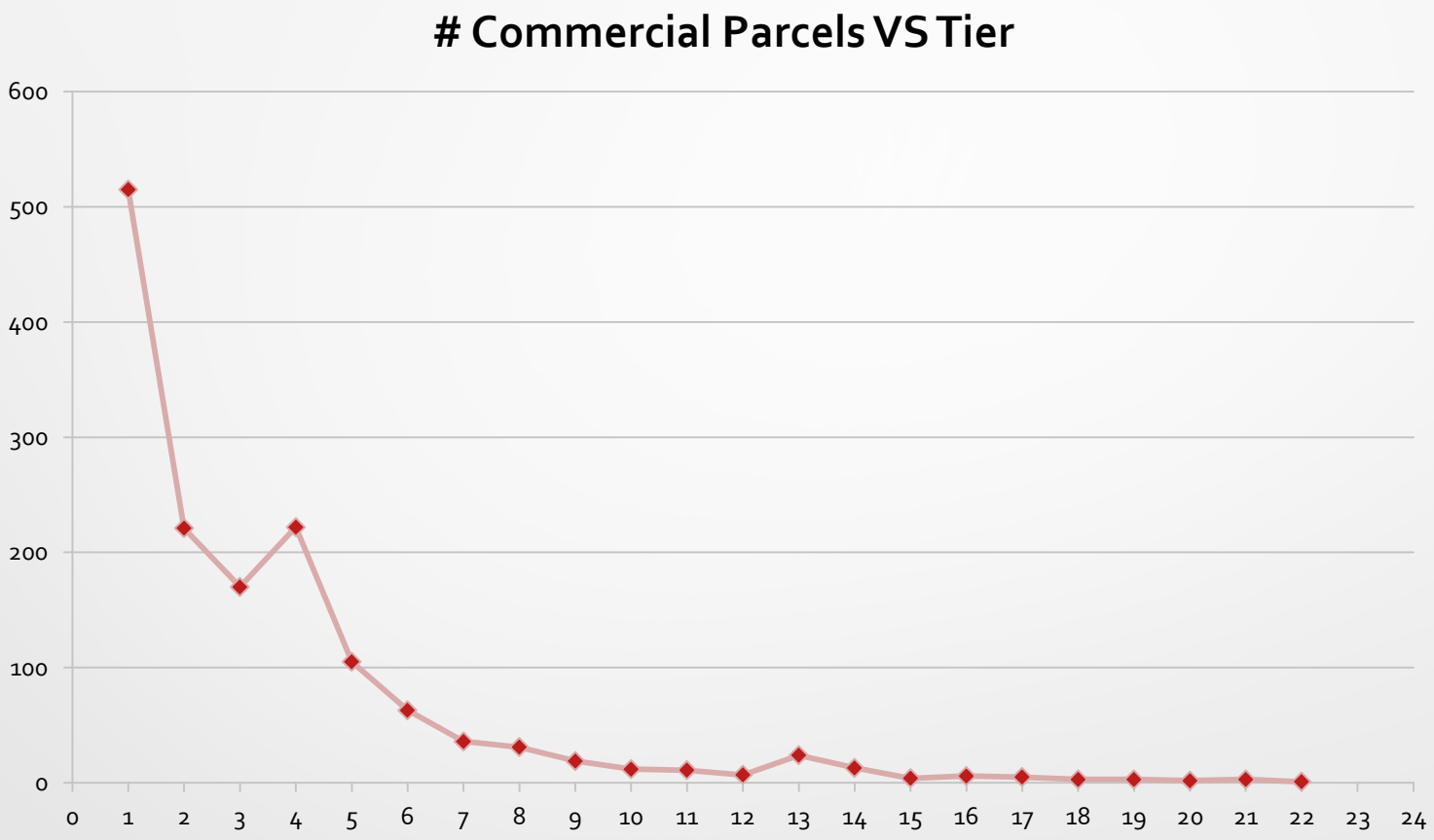
Commercial Fees

- Commercial Fees
  - All non-residential developed parcels having greater than 500 square feet of impervious area will be assessed to determine the total impervious area (see non-residential tiers). Similar to residential billing, individually metered commercial entities will receive their bill individually along with their water, sewer and refuse bills. The bill for Master or multiple metered properties will be sent to the operating entity of the complex, and that bill will be based on the total impervious area within the property. Adjacent properties owned by a common entity may apply to be grouped and assigned a tier based on the aggregate impervious area and billed in a single bill.
- Mixed Use Properties
  - Certain properties contain both residential units and impervious area associated with non-residential use, such as commercial, industrial, or agricultural uses. These properties will be evaluated and the monthly rate will be the greater of the commercial tier rate based on impervious surface, or the number of residential units times the monthly minimum fee.

Non-Residential Tier System

Tier No.	Range of Impervious Area (sf)		Monthly Utility Fee	Average Equivalent Runoff Unit (ERU)
1	0	3,030	**$6.00**	1.0
2	3,031	6,060	$6.00	1.0
3	6,061	10,000	$12.00	2.0
4	10,001	20,000	$19.80	3.3
5	20,001	30,000	$39.61	6.6
6	30,001	40,000	$59.41	9.9
7	40,001	50,000	$79.21	13.2
8	50,001	60,000	$99.01	16.5
9	60,001	70,000	$118.81	19.8
10	70,001	80,000	$138.62	23.1
11	80,001	90,000	$158.42	26.4
12	90,001	100,000	$178.22	29.7
13	100,001	133,000	$198.02	33.0
14	133,001	167,000	$263.37	43.9
15	167,001	200,000	$330.70	55.1
16	200,001	300,000	$396.04	66.0
17	300,001	400,000	$594.06	99.0
18	400,001	500,000	$792.08	132.0
19	500,001	600,000	$990.10	165.0
20	600,001	750,000	$1,188.12	198.0
21	750,001	1,000,000	$1,485.15	247.5
22	1,000,001	>1,000,001	**$1,980.20**	330.0

Relationship of Parcels to Tiers



Non-Residential Tier System

- Three Reasons to Support the Tier
  - Limits Administrative Costs
  - Comparable to Surrounding Communities
  - Reduces Fee Burden on Major Industries/Employers

Credit Proposal

- Mandated by the enabling legislation.
- Property owner must apply for credit.
- Any property that operates a stormwater facility that is subject to a current maintenance agreement, that is found to be properly maintained and effective, is eligible for a credit.
- Credit approval would be valid for a specific term in years, then would need new inspection for renewal.
- Maximum Credit would be represented in percent

Proposed Credit Values

- Stormwater ***Quantity*** Control (**entire site**)
  - 1 year storm 5 %
  - 2 year storm 5 %
  - 10 year storm 5 %
  - 25 year storm 5 %
  - 100 year storm 5 %
- Stormwater ***Quality*** Control (to current standards) 20%
- Maximum total credit per property = 35 %

The Town Staff will consider additional credit on a case by case basis for innovative stormwater management strategies

Credit Proposal

- Any storm water management facility, also known as a Best Management Practice or BMP, that meets the credit manual criteria will be eligible for a credit. Therefore, any Condominium Association, Commercial Owners Association or Homeowners Association that operates a BMP that is subject to a maintenance agreement, can apply to the Town for a reduction of their fee. Credits will apply for meeting specific water quantity and quality reductions defined in a Stormwater Utility Credit Manual and will range from 5% to a 35% maximum.
- Single Family Detached homes will be eligible for a credit for a BMP that meets the criteria of the credit system.

Credit Proposal

- **A residential example** would be an Apartment Complex with 50 units. The owner of that complex will receive a bill for $300 per month (50 units X $6.00 per month minimum rate) if master metered. If individually metered, the individuals would pay $6.00 per month.
  - If that Complex operates a BMP that meets the technical performance criteria for a 35 percent credit, they could apply to the Town for a credit.
- **A commercial example** would be a non-residential parcel containing 75,000 square feet of impervious area. This parcel would be billed under tier 10 at a monthly rate of $138.62.
  - If that property operates a BMP that meets the technical performance criteria for a 35 percent credit, they could apply to the Town for a reduction of the monthly fee.
- Properties identified as mixed use under the stormwater utility ordinance will also be eligible for credits assuming they operate a BMP that meets the criteria for a credit.

The Recommendation

- **Implement a Stormwater Enterprise Fund** based on the amount of impervious surface controlled by landowners in accordance with Virginia Code § 15.2-2114. Regulation of stormwater.

- **Establish the Equivalent Residential Unit (ERU)** based on 3,030 square feet of impervious area. The value was established by determining the median amount of impervious surface of a statistical sample of all single family residential properties.

- **Establish a single rate** for all single family residential structures. The established rate is one ERU or $6.00 per month.

The Recommendation

- **Charge all non-residential land** uses based on the number of ERUs of impervious surface they contain.
- Charge $6.00 per month per ERU of impervious surface. This rate will not generate 100% funding of the stormwater obligations of the Town. Many of these obligations are mandated and are currently funded by the general fund. This funding level may result in a need for periodic general fund augmentation depending on capital projects requiring matching funds or full funding. It was selected after review and was determined to be an effective rate that is comparable to neighboring localities. Initial anticipated revenue is approximately $1.25 Million annually. While not currently self-supporting, the proposed rate will reduce the burden on the general fund.

The Recommendation

- Commercial operations serviced by master water meters will be charged based on the number of ERUs of impervious surface of the entire property in accordance with a tiered system based on discrete ranges of impervious surface area.

- For multi-family residential units that are serviced by either **individual or master water meters**, charge one ERU per housing unit.

The Recommendation

- **Provide a credit system that will allow non-residential** landowners to achieve a credit of up to 35% for stormwater management BMPs that are subject to a maintenance agreement with Town. The landowners would apply for these credits in accordance with a credit manual to be developed by the Town.

- **Provide anyone that operates BMPs,** that are subject to Stormwater Maintenance Agreements, a 5% - 35% annual credit based on the credits earned by maintained onsite BMPs, and the result of an annual performance inspection by the Town.

- Utilize the **existing** financial and billing infrastructure of the Town to collect the fees.

Proposed Timeline

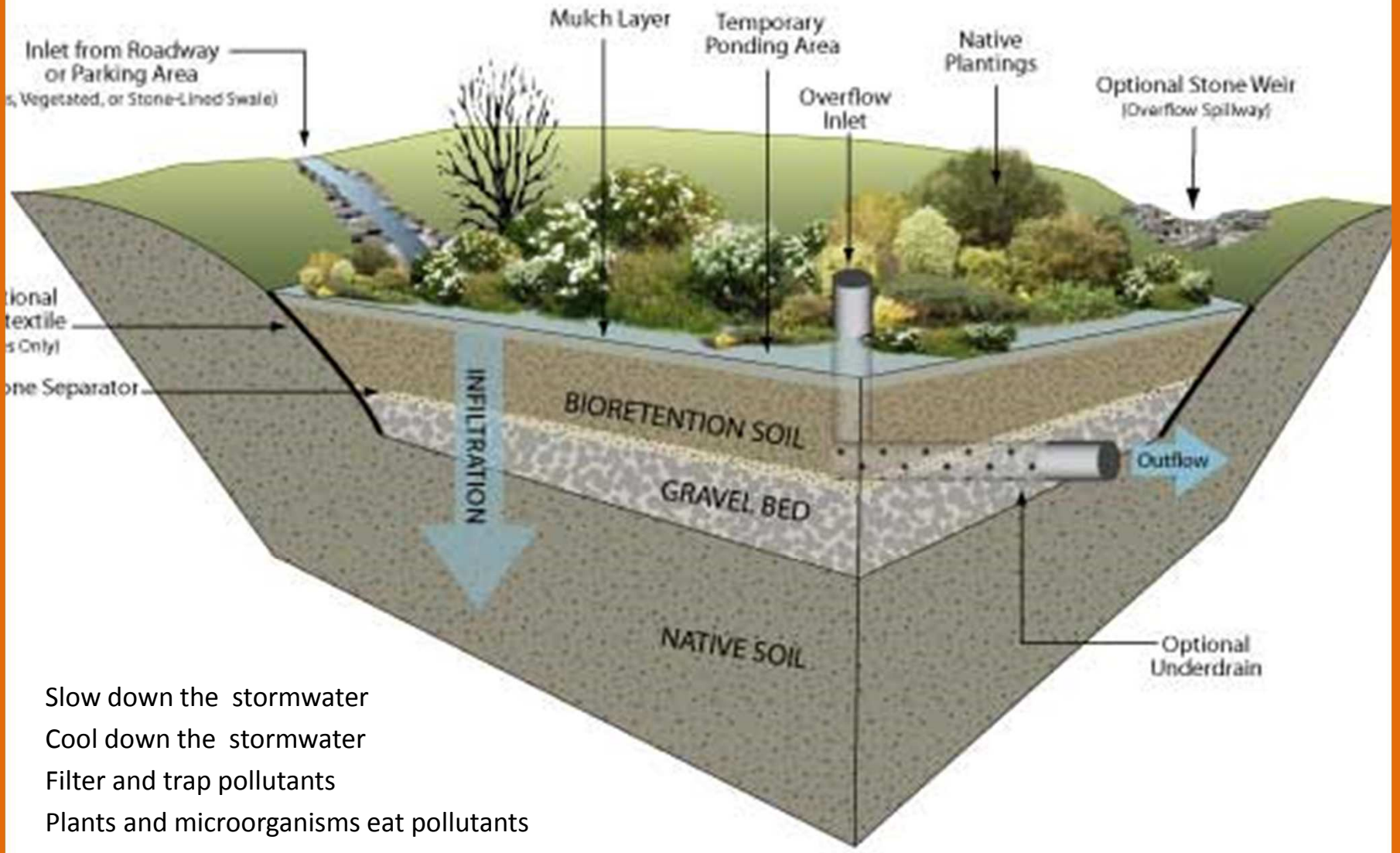
Dates	Actions
February, 2016	Hold Public Information Meeting
February, 2016	Incorporate Public Comment
March, 2016	Finalize Recommendation
April, 2016	Hold Public Hearings
May, 2016	Adopt Ordinance
July, 2016	Enact Fee


Watershed Divide
Watershed Divide

Streams and Water Quality

Stream restoration improves water quality by stabilizing stream banks and, when possible, returning the stream bed to the natural floodplain

Bioretention Filter



Slow down the stormwater

Cool down the stormwater

Filter and trap pollutants

Plants and microorganisms eat pollutants

Benthic: related or occurring at the bottom of a body of water

Macro-: Visible to you

Invertebrates: No internal skeleton

Benthic Macroinvertebrates – these are baby insects/bugs and snails, worms, leeches.

Why do we look at Macroinvetebrates

- Clean Water
  - Lots of different Critters
  - Plus critters that only live in clean water
- Impaired Water (not clean enough!)
  - Few types of Critters
  - Mostly types that can tolerate pollutants and poor conditions

Stormwater Survey

Town of Christiansburg

Visit the survey online

https://www.surveymonkey.com/r/ChristiansburgPEOP

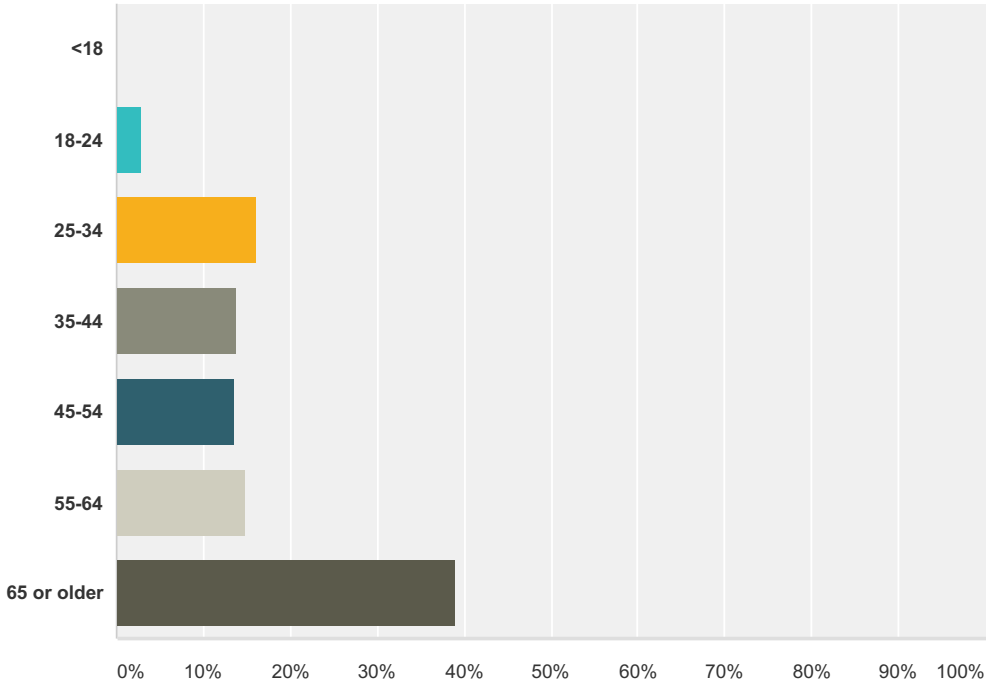
What do you know about our stormwater efforts?

We're asking residents to share their knowledge of and interest in the Town's stormwater program. The survey will be used as a base measurement to determine the effectiveness of forthcoming public outreach initiatives.

Survey Deadline: August 1, 2016

Q1 What is your age?

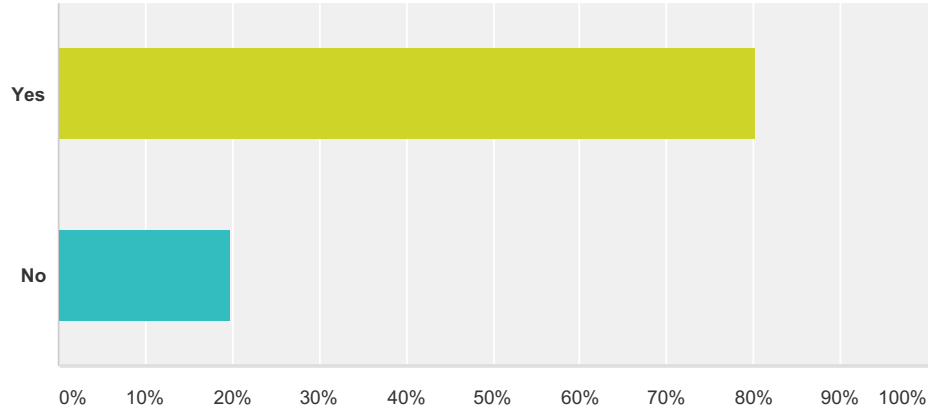
Answered: 318 Skipped: 0



Answer Choices	Responses	
<18	**0.00%**	0
18-24	**2.83%**	9
25-34	**16.04%**	51
35-44	**13.84%**	44
45-54	**13.52%**	43
55-64	**14.78%**	47
65 or older	**38.99%**	124
Total		**318**

Q2 Are you aware the Town of Christiansburg has a legal obligation to protect water quality, has a stormwater program in place to protect surface waters, and posts reports online regarding stormwater progress and accomplishments?

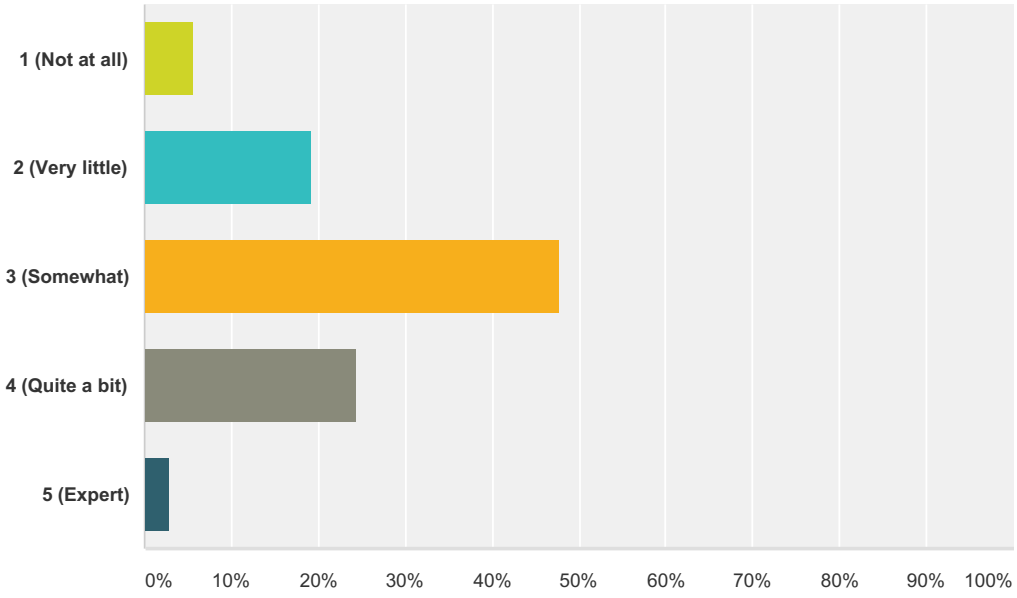
Answered: 318 Skipped: 0



Answer Choices	Responses	
Yes	**80.19%**	255
No	**19.81%**	63
Total		**318**

Q3 How much do you feel you know about the steps you can take to reduce stormwater pollution (1 being the least and 5 being the most)?

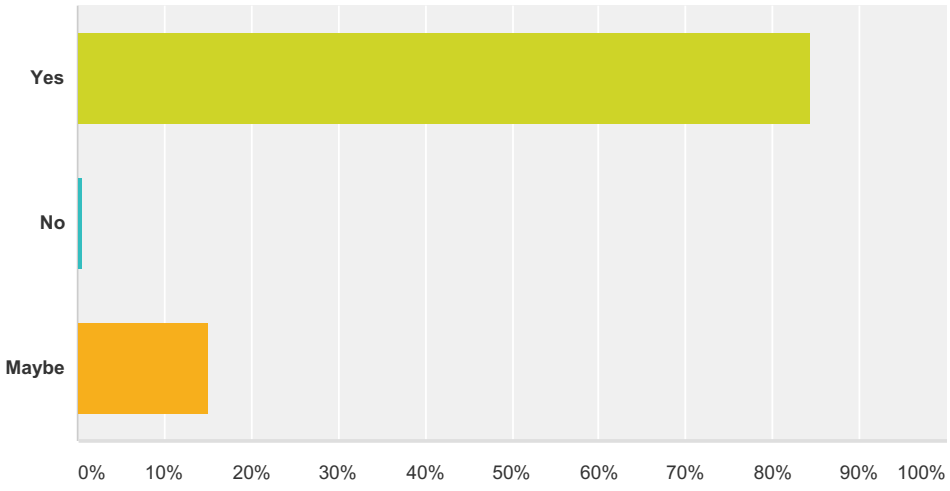
Answered: 318 Skipped: 0



Answer Choices	Responses	
1 (Not at all)	**5.66%**	18
2 (Very little)	**19.18%**	61
3 (Somewhat)	**47.80%**	152
4 (Quite a bit)	**24.53%**	78
5 (Expert)	**2.83%**	9
Total		**318**

Q4 Are you interested in improving environmental water quality in our streams?

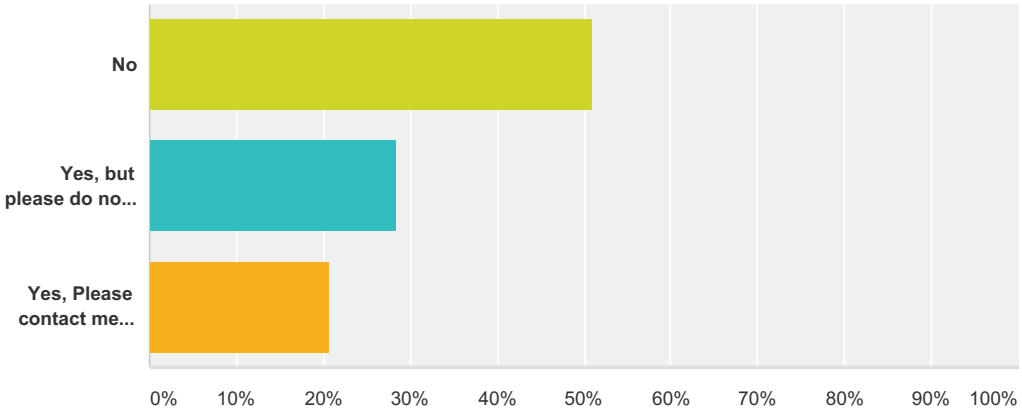
Answered: 318 Skipped: 0



Answer Choices	Responses	
Yes	**84.28%**	268
No	**0.63%**	2
Maybe	**15.09%**	48
Total		**318**

Q5 Are you interested in volunteering with local projects to improve environmental water quality?

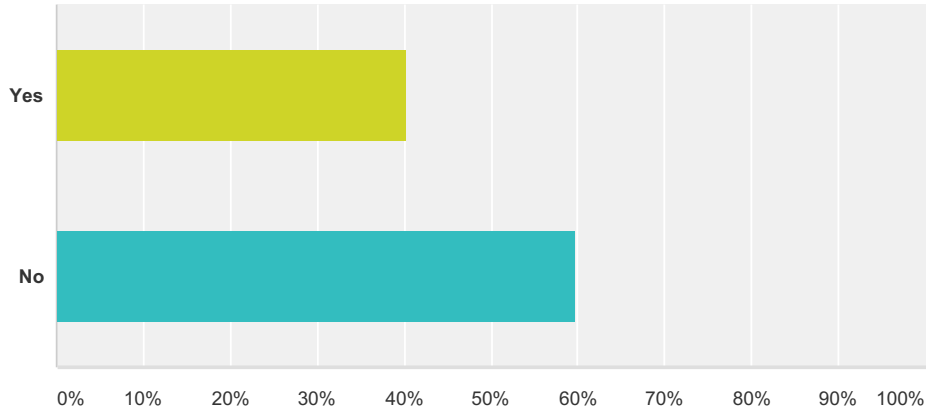
Answered: 318 Skipped: 0



Answer Choices	Responses	
No	**50.94%**	162
Yes, but please do not contact me regarding opportunities.	**28.30%**	90
Yes, Please contact me about opportunities (Please provide Name, Address, Phone # and Email information in the box below).	**20.75%**	66
Total		**318**

Q6 Are you aware of any current Town of Christiansburg projects to improve environmental water quality?

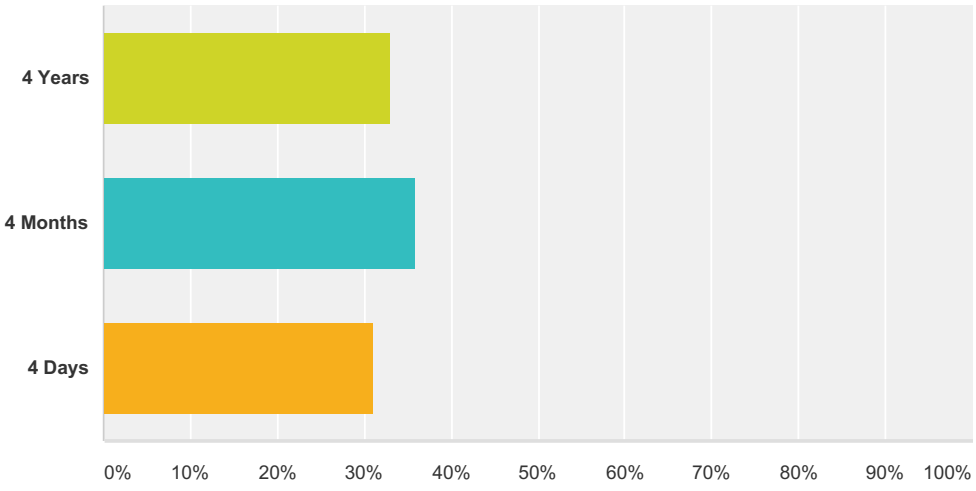
Answered: 318 Skipped: 0



Answer Choices	Responses	
Yes	**40.25%**	128
No	**59.75%**	190
Total		**318**

Q7 How long can pet waste left on the ground spread illness?

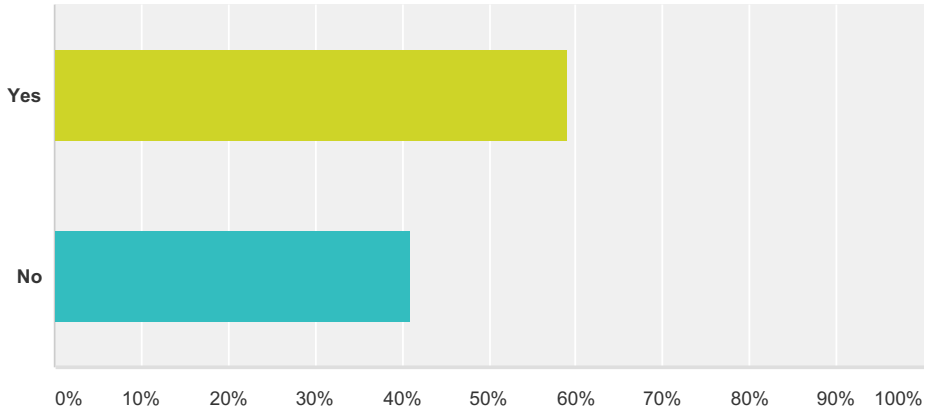
Answered: 318 Skipped: 0



Answer Choices	Responses	
4 Years	**33.02%**	105
4 Months	**35.85%**	114
4 Days	**31.13%**	99
Total		**318**

Q8 Have you seen storm drain markers (like the one shown) placed on any storm drains around Town?

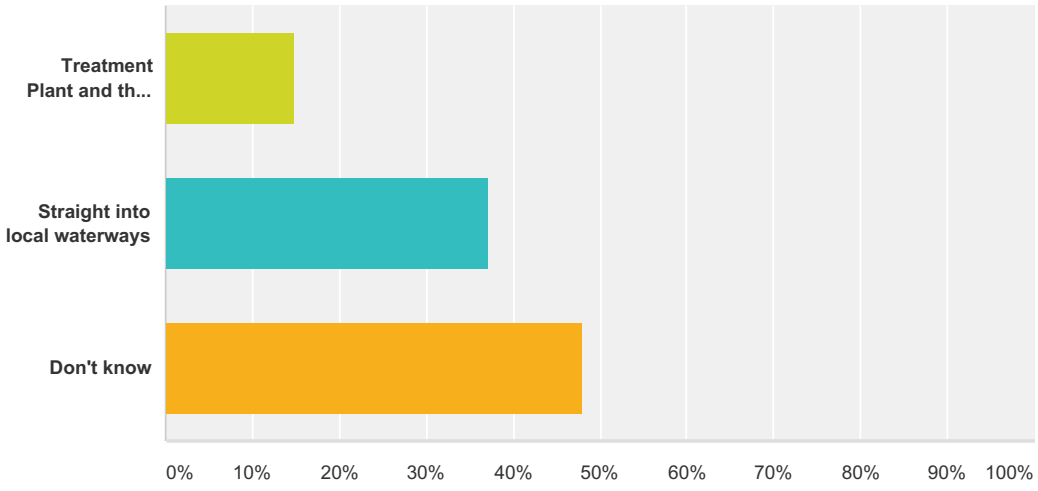
Answered: 318 Skipped: 0



Answer Choices	Responses	
Yes	**59.12%**	188
No	**40.88%**	130
Total		**318**

Q9 Do you know where stormwater inlets in the Town drain?

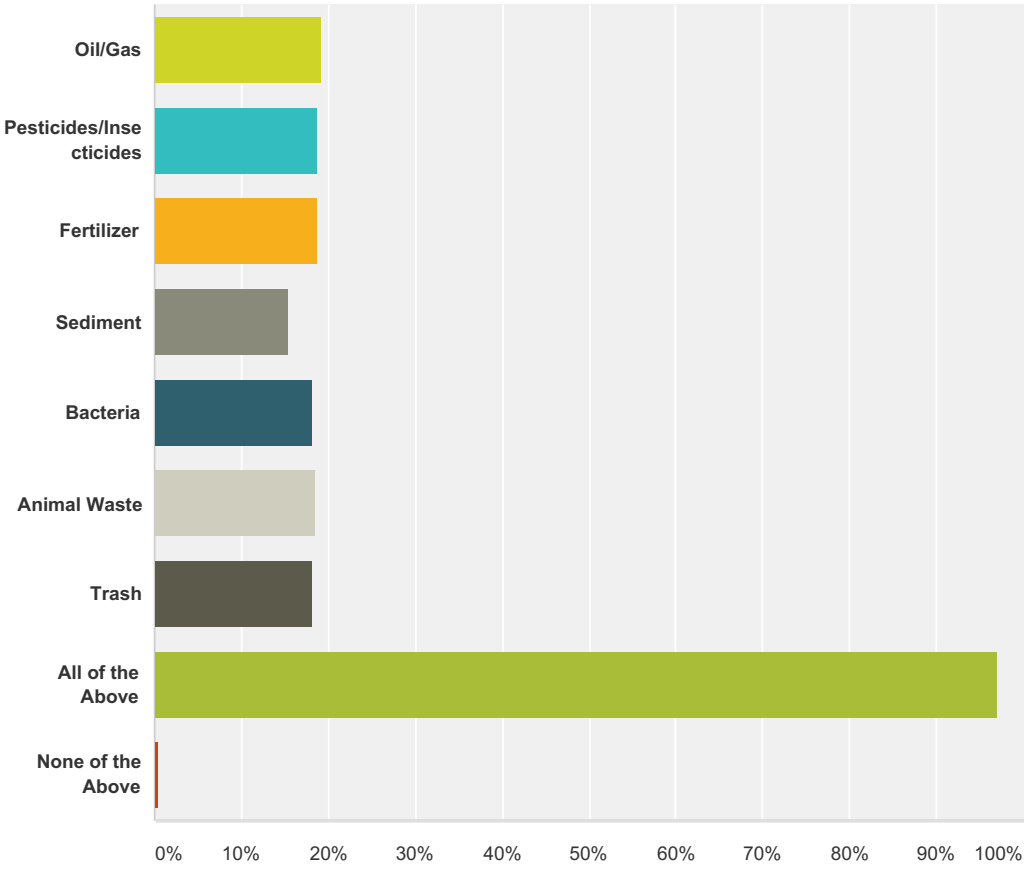
Answered: 318 Skipped: 0



Answer Choices	Responses	
Treatment Plant and then into the waterway	**14.78%**	47
Straight into local waterways	**37.11%**	118
Don't know	**48.11%**	153
Total		**318**

Q10 Which of the following would you classify as pollutants that can negatively impact surface waters?

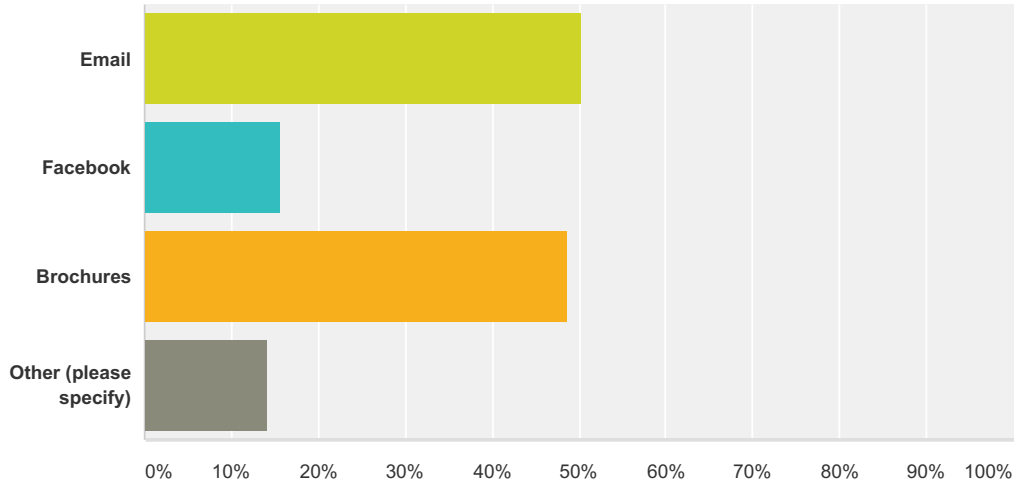
Answered: 318 Skipped: 0



Answer Choices	Responses	
Oil/Gas	**19.18%**	61
Pesticides/Insecticides	**18.87%**	60
Fertilizer	**18.87%**	60
Sediment	**15.41%**	49
Bacteria	**18.24%**	58
Animal Waste	**18.55%**	59
Trash	**18.24%**	58
All of the Above	**97.17%**	309
None of the Above	**0.31%**	1
Total Respondents: 318		

Q11 Which of the following would be effective methods to reach you regarding water quality education?

Answered: 312 Skipped: 6



Answer Choices	Responses	
Email	**50.32%**	157
Facebook	**15.71%**	49
Brochures	**48.72%**	152
Other (please specify)	**14.10%**	44
Total Respondents: 312		

Q12 Please use the below space to write any other comments or concerns you have about the Town of Christiansburg's stormwater program.

Answered: 77 Skipped: 241

Q12 Please use the below space to write any other comments or concerns you have about the Town of Christiansburg's stormwater program.

Answered: 77 Skipped: 241

#	Responses	Date
1	I was given a personal briefing on the stormwater program. Session when the public is is limited (1 hr or less) Would be very informative & would get those who are truly interested in the program features, cost, implementation, etc.	8/18/2016 3:51 PM
2	Its everyone that is able to make this a personal responsibility to do as much as we can to protect our environment and work toghether. To make our Town, state and country the best it can be. Small things can make a big difference.	8/18/2016 3:49 PM
3	Dog Walkers Don't clean up their mess in pepeles yards.	8/18/2016 3:47 PM
4	We get ALL of the stormwater off of South Franklin St. and Cemetery South to I-81 overpass. We have pictures that prove it. It is just ignored. We shouldn't have to pay a penny on our utility bill for providing stormwater waste we aren't supplying. We are supplied with the runoff from a very large area and unbelievable amounts. At times our yard is completely covered and goes through window wells and breaking basement windows. Our basement is 50% finished. We've had to replace everything. No one will do anything to help us. Sincerely, Vicky Oliver (625 Canaan Rd. SE)	8/18/2016 3:45 PM
5	My concern is that apparently you are letting this "stormwater" drains fee on everyone - We live on a street with no sidewalks, so therefore, no drains. It seems to me that if you don't have the luxury of sidewalks/drains, it is a little unfair to put that on us. Also, would be nice if you could put the sign "Be Responsible - Clean It Up" in & around communities with the problem of people NOT picking up after animals - It is a stable here (225 Walnut Dr.) I have gone so far as to put a sign up asking people to clean up afterwards & not to let their animals pee on grass. It didn't work - I guess it wasn't officially enough!	8/18/2016 3:35 PM
6	The Oak Tree subdivision's lawn and snow removal contractor is not very good. The drainage there is bad and leaf removal is a joke. Much foliage ends up in a clogs waterways	8/18/2016 3:31 PM
7	Pet waste section in the accompanying brochure logically was about dog owners who are the most prevalent. But what about cat owners who let their cats outside. 1) Is there any ordinance on cats? 2) Four house cats from immediate houses in our neighborhood are let out to kill birds, poop in our flower beds, etc.	8/18/2016 3:29 PM
8	I live at 690 Hill Crest Drive at the corner of Hill Crest Drive and Center Street. My neighbor at the base of center street walks his dogs by my yard and poop in my and other neighbors yards. When I tell him to clean up his dogs poop he makes obscene gestures at me. Please help me stop this... you're my only hope	8/18/2016 3:27 PM
9	Please keep the water clean and safe to drink.	8/18/2016 3:26 PM
10	Sorry I can't volunteer for projects, but glad to support the program.	8/18/2016 3:25 PM
11	Local businesses should have to comply with the same rules	8/18/2016 3:22 PM
12	Should have included a return envelope with this	8/18/2016 3:21 PM
13	I have a problem with storm water across my driveway resulting in erosion of the drive. Would like to have a discussion with the appropriate people to help me correct the problem. Mr. Oliver Strawn 15 Scattergood Dr NE Christiansburg, VA 24073 phone 239-1038	8/18/2016 3:18 PM
14	I came here 5 years ago from Pheonix, AZ, and Fairfax, VA before that. The water here tastes wonderful. And the air smells good. Love the changing seasons and just now the wildflowers are pretty. Soooo Happy to have retired here... - Mrs. Wadell	8/18/2016 3:17 PM
15	I am so impressed at ALL staff in town. So far been wonderful since our move here	8/18/2016 3:13 PM
16	What are you going to do about wild animal feces? That is a larger problem than pets. I don't have pets. I've lived in Cburg 25 years, I have yet been notified of an health epidemic related to pet feces. I'm on a fixed income and there comes a point your elderly citizens will no longer be able to afford all these fees. Also, how does getting water bill every month save money? 2x the postage and paper cost for the town.	8/18/2016 3:09 PM
17	We are willing to do all we can from our home and lots that we have in town and anywhere we go	8/18/2016 3:05 PM

18	The town has a stormwater drainage problem. I have noticed during a heavy rain/severe storms in some areas around town. Water stands or maybe there are not enough drains to handle the rain.	8/18/2016 3:03 PM
19	On limited income. Cant afford bill for this.	8/18/2016 2:56 PM
20	Stormwater is ruining homes in Christiansburg. No Insurance. They have to help homeowners repair and replace damage! They need to clean or replace drains! SAD!	8/18/2016 2:54 PM
21	My Mom is 96 years old and the only thing she understands about the "stormwater program" is that her monthly bill will increase....	8/18/2016 2:47 PM
22	Congratulations for it being a concern. Need to protect the environment for younger generation. - Thank You	8/18/2016 2:45 PM
23	Glad to hear about reporting status and as in other parts of the country not enough is done to protect these resources. eg: The Charleston WVa problems with chemical spill and the Flint Mich piaster	8/18/2016 2:39 PM
24	Thank you!	8/14/2016 3:21 PM
25	After taking this survey, I realize I do not know much about the program at all! I would love to join a facebook group if there is one that posts information about things I can do as a member of the community to help!	8/1/2016 3:51 PM
26	Thank you for this initiative!	7/29/2016 8:46 AM
27	I applaud our town's efforts to deal with this problem. Clean water is a limited resource and should not be ignored.	7/23/2016 9:35 AM
28	I think we pay enough in taxes that we should not have to pay anymore per month to aide in this project. Especially living in town limits we pay both taxes for Montgomery Co. I can understand why people like to live in the County and not in town.	7/22/2016 9:39 AM
29	Control pesticide use - encourage companies, HOA, etc. to use alternative and safer methods and not to spray carcinogenic chemicals all over the town.	7/19/2016 1:00 PM
30	Sanitary sewer overflows on Phlegar between 2nd and 3rd after SW run off. Should be corrected.	7/17/2016 4:37 PM
31	pizza hut parking lot gets 3-4 ft of water when it rains.	7/12/2016 8:12 AM
32	pizza hut parking lot gets 3-4 ft of water when it rains. stephen gillespie	7/12/2016 8:12 AM
33	na	7/10/2016 7:23 PM
34	No comments at this time.	7/7/2016 7:01 PM
35	Thanks for your attempts to be proactive w/ environmental education!	7/5/2016 2:21 PM
36	Use every means to inform public. I've taken the tour more than once and is so informative	7/5/2016 1:50 PM
37	I live on Wimmer Street, but I often walk with my children to the cul-de-sac on Overlook (off Ragan/Clearview). There are storm drains under the curb that have no grate on them but are quite large---obviously I'm always with my girls when we walk by them, but surely those drains are big enough to allow a small child or animal to be swept in. I know a normal grate would clog to easily, but something?	7/5/2016 1:04 PM
38	How about fixing our flooding problem on our street Ash Drive? Huge rain or potential flooding our street gets all the water from all streets above us. the drains under some driveways (like mine) can't contain the water flow. water backs up into our yards then our basements flood. nasty water-sewage this past flood we had sewage floating by our yard and backing up in our yard.we have reported this several times in the 17 years of living here. concentrate on this community. need drain pipes that run the entire street. not just certain yards. our drain is cracked, broken, falling apart and once water gets to the end of our drain at my yard its has no where to go except back up into my yard. this entire street takes in water due to this on going problem. we are all getting together on our neighborhood to come to a town meeting to discuss this issue that has been on going for years. thanking you in advance for taking care of this problem first. thank you	7/4/2016 10:32 AM
39	Concerned about impact of RAAP's past or current practices that could impact our water quality and safety	7/4/2016 7:50 AM
40	Hope it don't cost too much.	7/3/2016 3:07 PM
41	Interesting, yet frustrating. All I know is that since I moved into my house in 1991 on 114 Evans Street, my side and back yard have flooded, including my basement, every time we get more than a downpour for an hour at a time because my street gets all of Evans, most of Park and Lester that pours into my back yard. I have plenty of pictures that shows proof. All this because the Town stopped short of taking the drain all the way down the street into the drain off at the end to Roanoke Street. I know no one will have anything to say to me about this...you ask for people's opinions in a survey, but you really don't care, you won't do anything...probably won't even read this. Oh well, we've lived here and put up with this and sucked up water forever, guess we'll have to do it till we die...and now have to pay an extra $6.00 a month now too. Thanks. The Spencer's 114 Evans Street Christiansburg, Va	7/3/2016 1:41 PM

42	Is run off water entering my cellar during large storms part of the stormwater program?	7/2/2016 11:22 PM
43	Why should I pay $6.00 a month when there are no sidewalks, curbs, storm drains, etc. in my neighborhood?? Is this another tax? The city can't patch all the pothole in town yet.	7/1/2016 4:49 PM
44	some one to look at the problem and tell the homeowner what they can do, rather than just bill	7/1/2016 1:40 PM
45	I trust the town to be responsible and understand the increase of 6.00 in my bill	7/1/2016 11:07 AM
46	Possibly more Passive wastewater treatment options (wetlands)	7/1/2016 10:12 AM
47	God Bless!	7/1/2016 9:15 AM
48	As an over-taxed and over-charged devoted Christiansburg citizen, we have and will continue to volunteer to help with the success of the stormwater program by continuing to police my yard and my neighbors yards and scream and yell at the stupid animal lovers who continue the take advantage of our neighborhood. Why can't people walk their dogs in their own yard????? Why can't the town put restrictions/penalties for the nasty offender pet owners? What about cat poop? What about the disgusting furniture and trash residents are permitted to leave on the streets for months? What about the free compost leaves - is there a possibility of having bacterial infested poop in the leaves? We personally keep our yard clean, our home clean, and are very particular what goes into the trash. Come on - let's make this work if we have to pay for the habits of ignorant people who don't care. Put some teeth into your policies!!!!!! Otherwise, don't bill me to clean up everyone's else's filth	7/1/2016 7:51 AM
49	I am very pleased the Town is being proactive dealing with this problem.	6/30/2016 10:10 PM
50	Many culverts along streets need to be larger to accommodate runoff during heavy storms, e.g.Ellett Rd and Cambria Streets.	6/30/2016 8:28 PM
51	Keep up the great work.	6/30/2016 5:53 PM
52	Impervious surface area for parcels should be publicly/graphically available to Town residents.	6/29/2016 2:50 PM
53	Just FYI: there is a single typo I noted on the "bacterial impairment" brochure regarding pet waste. Giardia was spelled 'Guardia'. Just hoping this is helpful if it can be corrected prior to future printings or mailings.	6/29/2016 10:36 AM
54	o.k. If it also addresses flooding problems of homes with water draining from Interstate "81 onto people,s property.	6/29/2016 10:00 AM
55	government overreach	6/28/2016 12:10 PM
56	Why do surrounding counties have the highest number residents with thyroid cancer IN THE NATION if our water is safe? Is the Army base polluting our water AND our air?	6/28/2016 10:14 AM
57	I'm excited about the storm water program that is building sidewalks on Park Street!	6/27/2016 8:43 PM
58	Not certain exactly what is meant by the cost being associated with square footage. Square footage of what?	6/27/2016 7:04 PM
59	We reside on Lucas St & there's a small creek that runs behind our house. A few years ago, young juveniles dammed up the creek to trap minnows. Now when we get heavy rains, our back yards flood, thus increasing the chance of pollutants entering the waterway. We have previously reported it to the town, but nothing was done. The flooding also causes damage to our lawns & lawn equipment. This dam needs to be removed.	6/27/2016 5:48 PM
60	I live in Prices Fork, in the county. Cburg is my mailing address. I mention this if programs are for Cburg residents only.	6/27/2016 5:27 PM
61	I'm interested in learning more.	6/27/2016 4:06 PM
62	Is this a do-able project without bankrupting the county? What about sources of pollution outside the county? What about the arsenal as a source of pollution? Would the town/county's efforts have a noticeable effect?	6/27/2016 2:46 PM
63	I like the water quality in town and am happy that efforts are made to keep quality positive.	6/27/2016 2:24 PM
64	This would be a good way for people interested to learn and get involved	6/27/2016 1:31 PM
65	Don't think the town should charge us or add extra fees to comply with federal laws regarding water quality it's already costly enough to have town water	6/26/2016 12:26 PM
66	Ruff	6/24/2016 10:46 PM
67	I don't feel this extra tax to the citizens of the Town of Christiansburg is fair. I understand the need, however this puts more burden on families who are already struggling. Lets try to bring more people into the town and not scare them away with more taxes/fees. We are already paying A LOT in taxes and this is just another way for the town to take even more money from hard working folks. It isn't right.	6/23/2016 8:59 AM
68	Please consider the heavy tax burden already placed on residents and minimize elsewhere before placing an additional tax (call it what you want, but it is a tax!) on taxpayers!	6/20/2016 8:54 AM

69	The town of christiansburg seems to be on the right track. However, the town needs to invest more money into older neighborhoods to reduce flooding around homes not only for the residents protection, but to keep water levels lowers do away from possible pollutants. The town has been notified multiple time about issues regarding depot street, school lane, and water street but no solutions have been offered. The town needs to address these issues so the polluted waters are controlled and flooding stops.	6/18/2016 2:44 PM
70	Are the culvert liners structural? If not it seems that cutting into the top of existing culverts to grout the liners damages the structural integrity. Aren't holding ponds the only effective way to slow the flow of runoff into streams?	6/18/2016 2:36 PM
71	Most drain markers need replacement (ex: Main St.) Not enough information to non-residential customers about what their fees will be, how assessed by staff, how/if credits can be applied.	6/17/2016 5:34 PM
72	Would be interested in how Christiansburg plans to improve grading or slope of roadways and storm water program in order to prevent roadways from becoming flooded by water following heavy rain. Pumps? Raise roadway height? Improve ditch drainage? Lay sidewalk with storm drains underneath making Christiansburg more pedestrian friendly and improve water intake? Would like to see concrete plans posted online in website. Get to it.	6/17/2016 12:17 PM
73	Just my point of few. My back yard don't have a covered ditch and my basement has flooded in the past. I think the city should fix problem areas if we have to pay a monthly fee for storm water maintenance	6/17/2016 11:02 AM
74	Our development, New River Village has extremely poor storm water management.	6/17/2016 10:58 AM
75	This is all you council members know how to do is.....Raise Taxes.....you are going to make it impossible for widow women on fixed incomes like me, to continue living in their homes because they can't afford to pay the taxes.....I'm already paying Town an County.....which is stupid..... When you all are running for office, your promises are "no new taxes"..... But if you win the election.....it's a different story!!!! Are all council members "for" this charge????? No point in attending the meeting, you've already made up your mind!!!!	6/16/2016 4:37 PM
76	Know there had to be some amount to charge each home owner but those of us with a very small house and short gravel driveway are not contributing as much to the problem as the very large homes with a paved parking lot for their cars, trucks and maybe a boat and RV.	6/16/2016 4:32 PM
77	3E consulting have been a great help in the Town's MS4 efforts and we appreciate the work that Chris, Sara and Lee have done!	6/16/2016 9:38 AM

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DAS MANUFACTURING, INC.
2340-A WHITFIELD PK AVE
800-549-6024

SARASOTA, FL 34243

PACKING LIST

SHIPPER #
00057158

SHIP TO
TOWN OF CHRISTIANBURG
100 E. MAIN ST.
CHRISTIANBURG, VA 24073
Attn: JOHN BURKE/ENGINEERING

ORDER DATE	SHIP VIA	
05/20/16	*Das- UPS Ground*	246762

QUANTITY ORDERED	QUANTITY SHIPPED	UNIT	ITEM NUMBER	DESCRIPTION
100	*100*	*EA*		NRD/CHRISTIANBURG 5/20
4	*4*	*EA*	*RS222-11*	* CAULK, STANDARD 11 oz TUBE RS222-11 TUBE, STANDARD CAULK
1	*1*	*EA*		CUST PO# VERBAL

All orders are subject to the print industry standard of 10% over or under run, and *are billed accordingly.*

Pick-Up Customers, please sign here:

X_____

☺

THANK YOU

WE APPRECIATE YOUR BUSINESS

ORIGINAL

DATE SHIPPED	**05/25/16**
SHIPPED BY	DFR
WEIGHT	12
CARTONS	1
SKIDS	0

MS4 Training 5/24/2016

Street Building

		8:30am	Signature			10:00am	Signature
1	✓	John Moore		1	✓	Tim Tucker	
2	✓	Jerry Lovern		2		Greg Dunn	
3		James Collins		3	✓	Tim Allen	
4		David Crapser		4		Tommy Spaulding	
5	✓	Michael Price		5	✓	Dale Lee	
6		John Crute		6	✓	Daniel Wright	
7		Dennis Minnick		7		Charlie Moore	
8	✓	Donald Cunningham		8	✓	Trey Griffith	
9	✓	William Dove		9	✓	Sammy Phipps	
10	✓	Ray Willis		10		Casper Violette	
11	✓	Matthew Link		11	✓	Curtis Goad	
12	✓	Roger Howell		12		Matthew Gillispie	
13	✓	Dale Gillespie		13	✓	Kenneth Custer	
14	✓	Ken Mummau		14		Carl Light	
15	✓	Adam Phillips		15		Freddie Price	FC Price
16	✓	John Ross		16		David Haskins	
17	✓	Tommy Price		17		Larry Rudisill	
18		Debbie Gibson		18		Bruce Harris	
19	✓	Gary Lawerence		19		Richard Weber	
20	✓	Mike Lucas		20		Dean Davis	
21	✓	Michael McCraw		21	✓	Travis Lester	Travis Lester
22	✓	Torrey Trussell		22		Brandy Hill	
23	✓	Steven Dalton		23		David Hughes	
24	✓	Terry Hungate		24	✓	Lloyd Lopes	Lloyd Lopes
25	✓	Dusty Adkins		25		Cris Hardwick	
26	✓	Randy Turman		26	✓	Tanya Hockett	
27		Rodney Shepherd		27		Leon Martin	
28	✓	Nathan Wells		28	✓	Justin Shepherd	
29	✓	Travis Hudson		29		John Kirtner	
30		Andy NewComb		30		Greg Dalton	
31	✓	Garry Moore		31	✓	Tommy Sullivan	
32	✓	Joe Booth		32	✓	Barry Martin	
33		Jason Price		33	✓	Brad Phillips	
34		Matthew Cavanaugh		34	✓	Richard Monday	Richard Monday
35		Billy Woolwine		35	✓	Jamie Boston	
36		Joseph Gleason		36		Ricky Bourne	
37	✓	Dewayne Gilmore		37		Jim Lancianese	
38	✓	Darrell Farmer		38		Ryan Hendrix	
39	✓	Steven Witt		39		David Sutphin	
40	✓	Joseph Rotella		40		Eddie Smith	
41	✓	James Hanshaw		41		WWTF	
42		~~WWTF~~ ENGINEERING		42		WWTF	
43		WWTF JOHN BURKE		43		WWTF	
44		WWTF		44		WWTF	
45		WWTF		45		WWTF	
46		WWTF		46		WWTF	
47		WWTF			✓	Travis Hudson	Travis Hudson

✓ Josh Dickerson ✓

Engineering Staff

Wayne Nelson	Director of Engineering
Todd Walters	Asst. Director of Engineering
Jessie Nester	Utilities Program Manager
John Burke	Environmental Program Manager

8:00 am to 5:00 pm

Public Works Staff

Ricky Bourne	Director of Public Works
Jim Lancianese	Asst. Director of Public Works
Ryan Hendrix	Wastewater Operations Superintendent
David Sutphin	Asst. Superintendent, Streets

8:00 am to 4:30 pm

For more information or to report spills of any kind, contact:

Public Works	**(540) 382-1151**
Engineering	**(540) 382-6120**
AFTER HOURS	**(540) 382-3131**

Town Council

Michael Barber	Mayor
Samuel Bishop	Councilmember
Harry Collins	Councilmember
Cord Hall	Councilmember
Steve Huppert	Councilmember
Henry Showalter	Councilmember
Bradford Stipes	Councilmember

Town Administration

Steve Biggs	Town Manager
Randy Wingfield	Asst. Town Manager

Town of Christiansburg

100 East Main Street
Christiansburg, VA 24073
Phone: 540-382-6128
Fax: 540-382-7338

www.christiansburg.org

Town of Christiansburg

Public Works & Engineering

Public Education and Outreach

Program:

Bacteria Impairment

For more information about the Stormwater Program:

www.christiansburg.org/index.aspx?nid=250

THE SCOOP ON POOP

It might not seem like a stormwater problem, but animal waste is one of the many seemingly small sources of pollution that can add up to big problems for water quality, and even human health.

Both Crab Creek and the Roanoke River Basins have Total Maximum Daily Load (TMDL) requirements to reduce bacteria levels in our waterways. The TMDL "pollution diet" requirements could lead to costly investments in infrastructure by the Town unless we all take cost-effective action. Citizens can work to lessen Town expenditures by eliminating sources of bacteria – and pet waste is a big contributor.

IT'S CHEAPER AND EASIER TO PICK UP PET WASTE THAN TO INVEST IN COSTLY STRUCTURES IN OUR STORM DRAIN SYSTEM TO ADDRESS BACTERIA.

In addition to contributing to water quality issues, failing to remove pet waste creates the potential for the spread of diseases to humans, pets and wildlife.

Bacteria and parasites, including *Guardia*, *Salmonella*, tapeworms, roundworms, hookworms and *E. coli*, can be present in pet waste and can last up to four years. Cat waste can also contain *Toxoplasma Gondi*.

IF YOUR DOG CAN'T DO THIS, YOU SHOULD HELP!

WHAT YOU CAN DO

Clean up pet waste in your yard. Picking up pet waste in your own yard will protect you and your neighbors from potential illness and reduce the amount of bacteria that can be carried by stormwater.

Carry a plastic bag with you on every walk. There are compact, refillable bag dispensers that you can attach directly to your dog's leash.

Bag your pet waste and drop it in a trash can. Once you've collected your dog's waste in the plastic bag, **throw it in the trash** – never into a storm drain or your toilet!

Some town parks and recreational areas have courtesy bags and disposal boxes, designed specifically for dog waste. Use these stations where they are available. If there is not a pet waste station in the park you like to visit, ask the Town to install one. We want to help!

PROTECT YOURSELF, YOUR PETS, YOUR NEIGHBORS AND THE ENVIRONMENT BY SCOOPING THE POOP

YOU CAN MAKE A DIFFERENCE!

It is good for you, the community and the environment to properly dispose of pet waste. Encourage your friends and neighbors to keep pet waste out of the sewers and educate them on how to reduce the spread of bacteria and illness. The best way to encourage others is to start addressing pet waste on your own property and when walking pets in public areas.

Wordsprint
design print mail

Blacksburg 540-382-9111
Wytheville 276-228-6608

P.O. Box 544, Wytheville, VA 24382

INVOICE

Invoice #	161526011
Invoice Date	06/17/16
Date Shipped	06/17/16
Ship Via	DELIVER EAST
Salesperson	CBURG
Terms	NET 20 DAYS
P.O. Number	
Job Number	161526

TOWN OF CHRISTIANSBURG
ACCOUNTS PAYABLE
100 E MAIN ST
CHRISTIANSBURG, VA 24073-3029

Quantity	Description	Unit Price	Amount
14,200.00	2015 WATER QUALITY, BAC FLYERS & SURVEY MAILERS	0.2465	3,499.60

RECEIVED JUN 2016 OF CHRISTIANSBURG

Late payments received after the due date may be charged a late fee of 1.5 % per month.

Subtotal	3,499.60
Sales Tax	0.00
Total Due	$ 3,499.60

CAPITAL PROJECT
Project Name: _____
PN/CN: _____
Budget Code: _____
Project Manager: _____
Director: _____

Customer Code : TOCHR
Invoice Number : 161526011
Invoice Date : 06/17/2016
Invoice Amount : $ 3,499.60
Amount Paid : _____

Remit To:

WORDSPRINT
190 WEST SPRING STREET
WYTHEVILLE, VA 24382

Remitter:

TOWN OF CHRISTIANSBURG
ACCOUNTS PAYABLE
100 E MAIN ST
CHRISTIANSBURG, VA 24073-3029

Appendix B – BMP 3.1 Outfall Inventory

(Attributes to be completed to address MS4 General Permit per BMP 3.1 schedule)

Outfall Reconnaissance Inventory

Outfall ID	Impared ID	TMDL	No illicit disc
NE58BLA01	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58BLA02	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58BLA03	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58BLA04	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58BLA05	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58BLA06	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58BLA07	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58BLA08	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☐
NE58BLA09	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58BLA10	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58BLA13	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58BLA14	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58BLA15	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58BLA16	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58BLA18	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☐
NE58BLA19	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58BLB01	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58CC08	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58CC12	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58CC19	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58CC21	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☐
NE58CC24	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58CC32	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58CC38	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58CC42	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58CC45	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58CC46	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58CC47	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58CC48	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑

Outfall ID	Impared ID	TMDL	No illicit disc
NE58CC49	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58CC50	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58CC52	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58CC53	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58CC55	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☐
NE58CC57	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☐
NE58CC58	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58CC59	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58CC60	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58CC61	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58CC66	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58CC67	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58CC68	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58CC77	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58CC78	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58CC79	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58CC80	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☐
NE58CC81	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58CC82	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58CC83	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58CC84	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58CC85	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58CC86	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58CC87	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58CC88	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58DH01	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58DH06	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58SH03	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58SH04	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58SH07	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58TBA01	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑

Outfall ID	Impared ID	TMDL	No illicit disc
NE58TBA02	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58TBA03	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58TBA04	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58TBA06	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58TBA07	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58TBA08	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58TBA09	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58TBA12	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☐
NE58TBA14	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58TBA15	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58TBA16	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58TBA17	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58TBA18	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58TBA19	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58TBA20	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58TBA21	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58TBA22	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58TBA23	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58TBA24	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58TBA25	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58TBA26	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58TBA28	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58TBA29	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☐
NE58TBA30	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☐
NE58TBA31	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58TBA32	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58TBB01	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58TBB02	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58TBB03	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58TBB04	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58TBB05	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑

Outfall ID	Impared ID	TMDL	No illicit disc
NE58TBB08	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58TBB09	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58TBB10	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58TBB11	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58TBB12	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58TBB13	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58TBB14	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58TBC01	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58TBC07	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58TBC14	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58TBC15	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58TBC16	VAW-N18R_CBC04A00	Crab Creek Bacteria and Sediment	☑
NE58WB07	VAW-N18R_ZZZ01A00	Crab Creek Bacteria and Sediment	☑
NE59SBA08	VAW-N22R_XEH01A08	NO TMDL	☐
NE59SBA28	VAW-N22R_XEH01A08	NO TMDL	☑
NE59SBD09	VAW-N22R_XEH01A08	NO TMDL	☑
NE59SBD12	VAW-N22R_XEH01A08	NO TMDL	☑
RU04FB01	VAW-L01R_ZZZ01A00	Roanoke River Bacteria and Sediment	☑
RU04FB02	VAW-L01R_ZZZ01A00	Roanoke River Bacteria and Sediment	☑
RU04FB03	VAW-L01R_ZZZ01A00	Roanoke River Bacteria and Sediment	☑
RU04FB09	VAW-L01R_ZZZ01A00	Roanoke River Bacteria and Sediment	☑
RU04FB10	VAW-L01R_ZZZ01A00	Roanoke River Bacteria and Sediment	☑
RU04FB16	VAW-L01R_ZZZ01A00	Roanoke River Bacteria and Sediment	☑

Appendix C – BMP 3.2 IDDE Follow-up Information

IDDE Report 1

The date or dates that the illicit discharge was observed and reported	The results of the investigation	Any follow-up to the investigation	The resolution of the investigation	The date that the investigation was closed
3/23/16	Town engineering staff observed concrete washout discharging directly to the ground adjacent to singe family home construction	The Town Environmental Program Manager directed the forming crew to halt concrete washout discharge to ground.	Driver was directed to the existing concrete washout constructed at 405 Roudabush Drive. Driver was unaware of the washout location	3/23/16

Photo 1. March 23, 2016. Illicit Washout in Progress. Driver was directed to the existing concrete washout constructed at 405 Roudabush Drive. Driver was unaware of the washout location

IDDE Report 2

The date or dates that the illicit discharge was observed and reported	The results of the investigation	Any follow-up to the investigation	The resolution of the investigation	The date that the investigation was closed
5/4/15	The engineering department was informed of an illicit discharge near College Avenue and Depot Street. Mulch and stained water were present in the street. The adjacent mulch and landscape material business, Hollybrook Mulch, was determined to be the source.	The Town Environmental program Manager interviewed the business owner. They indicated the material would be cleaned up and that the mulch dye was not harmful to the environment.	Town Staff returned on 6/2 to verify the cleanup and the dye material used.	6/2/2016

Photo 1. May 4, 2016. Illicit discharge on College Avenue.

Photo 2. June 2, 2016 Site Visit. Verified Material discharged.

Photo 3. June 2, 2016 Site Visit. Verified material cleanup.

IDDE Report 3

The date or dates that the illicit discharge was observed and reported	The results of the investigation	Any follow-up to the investigation	The resolution of the investigation	The date that the investigation was closed
6/17/2016	Investigation of illicit pool discharge determined that pool water was being discharged from a pool at 790 Murray Street without proper de-chlorination or neutralization of other possible pool chemical.	A notice of violation was sent to the property owner.	No subsequent violations have been reported or observed. Town staff discussed possible disposal to sanitary sewer system or a properly sized gravel drainage pit.	6/24/2016

Illicit Discharge Notification attached

Town of Christiansburg, Virginia 24073

100 East Main Street ~ Telephone 540-382-6128 ~ Fax 540-382-7338

June 24, 2016

Walter G. Crockett
c/o Crockett Home Improvement
1255 Radford Street
Christiansburg, VA 24073

RE: Illicit Discharge Notice for 790 Murray Street

Mr. Crockett,
Town staff has observed the swimming pool filter located at the referenced address discharging onto Murray Street. This action violates Town Code Chapter 16, Article IV, that prohibits discharges of anything other than stormwater to the town storm drain system. The article is attached for reference. The pool filter backwash discharge off the property must cease immediately and a remedy to properly discharge the backwash must be determined and executed. Chapter 16, Article IV, Section 16-111, Enforcement of article and penalties, states that any person who violates any of the provisions of this article shall be guilty of a Class 1 misdemeanor.

Please contact the current resident and notify them of this notice. The Town Building Official has further information on discharge to the sanitary sewer system that we will be glad to discuss with you in order to work towards a solution. Please contact me to discuss a path forward to compliance with our ordinance.

Sincerely,

Wayne O. Nelson

Wayne O. Nelson, P.E.
Director of Engineering and Special Projects

Enclosure

Appendix D – BMP 3.3 IDDE Screening Summary

3-3 APPENDIX D IDDE Screening Summary

Outfall ID	Impaired ID	No Indication disc	Possible III disc	Almost Certian Ill	Comments
NE58BLA0	VAW-N18R_CBC04A00	☐	☑	☐	overgrown with vegetation
NE58BLA1	VAW-N18R_CBC04A00	☐	☑	☐	Construction runoff/Outfall recently implimented
NE58CC21	VAW-N18R_CBC04A00	☐	☑	☐	Full of dirt and debris from lucas st. to creek
NE58CC55	VAW-N18R_CBC04A00	☐	☑	☐	overgrown with vegetation
NE58CC57	VAW-N18R_CBC04A00	☐	☑	☐	overgrown with vegetation
NE58CC59	VAW-N18R_CBC04A00	☐	☑	☐	bottom rusted out
NE58CC68	VAW-N18R_CBC04A00	☐	☑	☐	
NE58CC80	VAW-N18R_CBC04A00	☐	☑	☐	overgrown with vegetation
NE59SBA0	VAW-N22R_XEH01A08	☐	☑	☐	Pipe recently replaced. Sediment transport noted. Detailed investigation
RU04FB10	VAW-L01R_ZZZ01A00	☐	☑	☐	

Appendix E – BMP 5.2 SWM Facility Tracking Database

(Electronic Database Provided to DEQ as Enclosure)

	DCR USE					Town Use															
	Town of Christiansburg Permit No. VAR040025																				
ID	MS4 Permit Year	BMP Type	HUC	Impaired Waters	No. of Acres Treated	Pond Name	Nearest Address	Easting	Northing	Town Maintained Y/N	Maintenance Agreement Y/N	Maint Agreement date	Site Plan #	TOC Project Number	Parcel Number	Current Land Use	Impervious Acres Treated	Managed Turf Acres Treated (RR Method)	Phosphorous Removal	Directly in Series with ID#	Date Brought Online	Most Recent Inspection Date
2	2008-2009	Bioretention Filter	NE58	Crab Creek	TBD of 4.45	Mink Street Subdivision Ashton Ct West	100 Ashton Ct.	10919592.65840	3575224.94790	No	No		z-665	00665		Residential						5/10/2016
3	2008-2009	Extended Detention	NE58	Crab Creek	0.79	Badger St. Mini-Storage	925 Radford St	10921458.18270	3575737.49096	No	No		Z-812	00812		Commercial						5/10/2016
4	2008-2009	Underground Detention	NE58	Crab Creek	13.32	Cambria Crossing Phase 1	Welch Circle	10921243.58370	3585033.86402	No	No		Z-639	00639		Residential						
5	2008-2009	Detention	NE58	Crab Creek	16.58	Christiansburg Middle Front	1205 Buffalo Dr.	10922648.69050	3573607.05433	No	No		Z-517	00517		Commercial						5/12/2016
6	2008-2009	Detention	NE58	Crab Creek	27.26	Christiansburg Middle Rear	1205 Buffalo Dr.	10921278.64040	3574118.19463	No	No		Z-517	00517		Commercial						3/30/2015
7	2008-2009	Detention	NE58	Crab Creek	TBD	Falling Branch Elementary	735 Falling Branch Rd	10936410.68200	3574973.71800	No	No					Commercial						3/30/2015
8	2008-2009	Detention???	NE58	Crab Creek	159.10	Falling Branch Industrial Park	Technology Dr	10935341.94050	3574158.59277	No	Yes		Z-1979	01979		Commercial						6/2/2016
9	2008-2009	Detention	NE58	Crab Creek	TBD	VDOT Pond at Bypass / Roanoke St Intersection		10936108.46310	3577712.77389	No	No					Commercial						5/25/2016
10	2008-2009	Detention	NE58	Crab Creek	TBD	Windsong Heights	Behind 135 Melody Dr	10922561.79410	3574648.58774	No	No		Z-784	00784		Residential						5/10/2016
11	2008-2009	Detention	NE58	Crab Creek	TBD	Windsor Estates Phase 1	395 Windsor Dr	10918996.34270	3585704.36579	No	No		Z-792	00792		Residential						5/19/2016
12	2008-2009	Detention	NE58	Crab Creek	18.05	Windsor Estates Phase 4	490 Windsor Dr	10919369.90410	3586192.97609	No	No		Z-792	00792		Residential						5/19/2016
13	2008-2009	Detention	NE58	Crab Creek	0.46	Majestic Dr. Townhomes	Majestic Dr	10919271.18300	3588278.94718	No	No		z-541	00541		Residential						5/6/2016
16	2008-2009	Detention	NE58	Crab Creek	1.78	Holy Spirit Catholic Church	355 Independence Blvd	10922986.61560	3581326.06184	No	No		z-560	00560	032621	Commercial						5/24/2016
17	2008-2009	Detention	NE58	Crab Creek	2.28	NRV VASAP	175 Independence Blvd	10923783.88000	3581637.97128	No	No		Z-1409	01409	009503	Commercial						5/24/2016
18	2008-2009	Detention	NE58	Crab Creek	1.08	The Hillside	500 Block Radford St	10923325.31100	3575689.53830	No	No		z-633	00633	000161	Residential						5/10/2016
19	2008-2009	Detention	NE58	Crab Creek	TBD	Overlook Court	9 Overlook Dr	10924056.54040	3577722.79345	No	No		Z-794	00794		Residential						5/9/2016
20	2008-2009	Detention	NE58	Crab Creek	4.93	Warren Heights	Behind 670 Warren Ct	10921993.16510	3576414.73457	No	No		Z-763	00763		Residential						5/10/2016
21	2008-2009	Detention	NE58	Crab Creek	TBD	Henley Place	Behind 1650 -1680 York Dr	10921299.22800	3584495.98100	No	No		Z-1061	01061		Residential						5/19/2016
22	2008-2009	Detention	NE58	Crab Creek	1.78	Corner Stone Townhouses Ph 2	1473 Scott St	10934552.88300	3577695.50930	No	No		z-549	00549		Residential						5/25/2016
23	2008-2009	Detention	NE58	Crab Creek	3.46	Charleston Place Townhomes	Republic and Lester	10929685.08500	3579449.87766	No	No		z-622	00622		Residential						5/6/2016
24	2008-2009	Detention	NE58	Crab Creek	0.66	College St Apts North	1105-1145 College St	10922781.40450	3573212.65652	No	No		z-617	00617		Residential						5/12/2016
26	2008-2009	Detention	NE58	Crab Creek	2.02	College St Apts South	adjacent to 1145 College St	10922676.72540	3573051.82956	No	No		z-617	00617		Residential						5/12/2016
27	2008-2009	Detention	NE58	Crab Creek	TBD	Middle Ct Townhomes	Moose and Buffalo Dr	10922586.25520	3573441.04044	No	No		z-599	00599		Residential						5/12/2016
28	2008-2009	Detention	NE58	Crab Creek	TBD	Peppers Crossing Subdivision	85 Johns Ct	10919693.54900	3587446.38800	No	No		z-593	00593		Residential						5/19/2016
29	2008-2009	Underground Detention	NE58	Crab Creek	3.48	Deli-Mart # 22	1250 W Main St	10922948.88680	3572505.73000	No	No		z-584	00584		Commercial						
30	2008-2009	Detention	NE58	Crab Creek	5.17	Pilot Homes Mini-Storage	170 Simmons Rd SE	10938404.72300	3577958.60600	No	No		z-577	00577		Commercial						3/30/2015
31	2008-2009	Detention	NE58	Crab Creek	2.42	B&B Storage Mini Storage	645 Radford St	10922847.05690	3575775.66549	No	No		z-575	00575		Commercial						5/10/2016
32	2008-2009	Detention	NE58	Crab Creek	TBD	Rice Realty	600 Radford St	10922833.64320	3575680.46971	No	No		z-574	00574		Commercial						5/10/2016
33	2008-2009	Detention	NE58	Crab Creek	TBD	Haymaker St Apartments	Haymaker & Liberty St	10930449.96010	3577173.29188	No	No		z-567	00567		Residential						5/6/2016
34	2008-2009	Bioretention Basin	NE58	Crab Creek	0.25	chpc Youth Housing Project	446, 448 Depot St	10926118.93290	3579972.10424	No	No		z-563	00563		Commercial						
35	2008-2009	Detention	NE58	Crab Creek	1.20	Corner Stone Townhouses Ph 1	1422 Scott Street	10934547.82900	3578083.65100	No	No		z-549	00549		Residential						5/25/2016
36	2008-2009	Retention Pond	NE58	Crab Creek	TBD	Larry Martin Site Plan	2886 Roanoke St	10945051.00000	3579643.31100	HAS BEEN REMOV	No		z-527	00527		Commercial						3/30/2015
37	2008-2009	Detention	NE58	Crab Creek	4.46	Hunters Ridge Phase 2	Behind 230 Hunters Ridge Lane	10921787.37790	3584309.18836	No	No		z-502	00502		Residential						5/19/2016
38	2008-2009	Detention	NE58	Crab Creek	1.83	Hunters Ridge Phase 3	Adjacent to 1646 Providence Blvd	10921786.02370	3584769.95515	No	No		z-502	00502		Residential						5/19/2016
39	2008-2009	Detention	NE58	Crab Creek	TBD	Precision Business and Warehouse Front	806 Radford St	10922056.00700	3575454.29200	No	No		Z-491	00491		Commercial						5/10/2016
40	2008-2009	Detention	NE58	Crab Creek	TBD	Precision Business and Warehouse Middle	806 Radford St	10922061.01300	3575299.08100	No	No		Z-491	00491		Commercial						5/10/2016
41	2008-2009	Detention	NE58	Crab Creek	0.33	John Cromer Garage	845 E. Main	10928348.65900	3580265.65600	No	No		z-484	00484		Commercial						6/2/2016
42	2008-2009	Detention	NE58	Crab Creek	29.88	Target Pond	195 Conston Ave	10922462.93500	3586200.39900	No	No		z-478	00478		Commercial						5/24/2016
43	2008-2009	Detention	NE58	Crab Creek	TBD	Northgate Village Shopping Center Expansion	2025 Cambria St	10925859.89290	3584426.33311	NOT Installed per P	No		z-476	00476		Commercial						5/24/2016
44	2008-2009	Detention	NE58	Crab Creek	4.81	Twin Oaks Phase 1	Adjacent to 770 Republic Rd	10929719.98300	3579253.88500	No	No		z-461	00461		Residential						5/6/2016
45	2008-2009	Detention	NE58	Crab Creek	TBD	Kyle Manor	College and Buffalo	10922905.29750	3573513.04787	No	No		z-451	00451		Residential						5/12/2016
46	2008-2009	Underground Detention	NE58	Crab Creek	2.16	Hokie Honda / Hyundai Front	2040 Roanoke St	10937541.68160	3578210.02247	No	No		z-429	00429		Commercial						
47	2008-2009	Detention	NE58	Crab Creek	4.50	Marshall Concrete Batch Plant	700 Block Lane	10928134.59140	3583705.71354	No	No		z-415	00415		Commercial						
48	2008-2009	Detention	NE58	Crab Creek	6.00	Food Lion on Roanoke St.	1530 Roanoke St.	10935206.89920	3577374.77586	No	No		z-402	00402		Commercial						5/25/2016
49	2008-2009	Detention	NE58	Crab Creek	0.95	Clearview Townhomes	Wimmer and Clearview Dr	10922953.24710	3578212.81479	No	No		z-399	00399		Residential						5/9/2016
50	2008-2009	Detention	RU07	Wilson Creek	3.67	Super 8 Mini-storage	2840 Roanoke St	10944479.51030	3579605.20088	No	No		z-373	00373		Commercial						5/26/2016
51	2008-2009	Infiltration	NE58	Crab Creek	TBD	Mt Zion Holy Church of America	385 Depot St	10926669.41720	3579204.11970	PAVED OVER	No		z-194	00194		Commercial						5/9/2016
52	2008-2009	Detention	NE58	Crab Creek	TBD	New Energy Dist Inc	2300 Prospect Dr	10940425.96350	3580239.57420	No	No		z-152	00152		Commercial						5/31/2016
53	2008-2009	Detention	NE58	Crab Creek	1.22	Cambriatowne	S Grant and Collins St	10928785.42210	3580105.49460	No	No		Z-375 (Miss	01015		Residential						5/6/2016
54	2008-2009	Underground Detention	NE58	Crab Creek	0.99	Park Street Townhouses	702-740 Park Street	10930809.24880	3578660.16491	No	No		Z-532	00532		Residential						
55	2008-2009	Detention	NE58	Crab Creek	2.45	Old School Townhouses	School Lane	10927035.47700	3578583.41300	No	No		z-00433	00433		Residential						5/9/2016
56	2008-2009	Infiltration	NE58	Crab Creek	0.17	Valley Propane Infiltration 1	225 Cambria Street	10923465.08390	3585264.40961	No	No		Z-309	00309	031939	Commercial						5/19/2016
57	2008-2009	Infiltration	NE58	Crab Creek	0.85	Valley Propane Infiltration 2	225 Cambria Street	10923497.24350	3584906.07496	No	No		Z-309	00309	031939	Commercial						5/19/2016
58	2008-2009	Infiltration	NE58	Crab Creek	0.27	Forest Street Townhomes	1015-1045 Forest St	10929286.52830	3578548.40297	No	No		Z-457	00457		Residential						5/12/2016
59	2008-2009	Detention	NE58	Crab Creek	TBD	College and Depot St Intersection	560 College Street	10924378.52360	3574998.84220	Yes	N/A					Residential						5/25/2016
60	2008-2009	Detention	NE58	Crab Creek	490.10	Edgemont of Diamond Hill	Multiple Addresses	10920015.63120	3581457.19042	Yes	N/A		Z-1965	01965	033160	Residential						
61	2008-2009	Detention	NE58	Crab Creek	75.32	Hans Meadow	240 Village Lane	10935422.12140	3579348.62421	Yes	N/A		Z-1405	01405	090607	Residential						6/2/2016
62	2008-2009	Detention	NE58	Crab Creek	11.94	Kamran	355 Warren St	10922121.59100	3577544.69772	Yes	N/A		Z-1679	01679	031065	Residential						5/9/2016
63	2008-2009	Detention	NE58	Crab Creek	12.51	Old Landfill	Wades Lane	10921766.49060	3579408.07292	Yes	N/A		Z-1804	01804	070357	Open Land						6/3/2016
64	2008-2009	Detention	NE58	Crab Creek	48.18	R&W Subdivision	Behind 285 Epperly Dr.	10929633.71560	3574690.67876	Yes	N/A		Z-1831	01831	032510	Residential						5/25/2016
65	2008-2009	Detention	NE58	Crab Creek	121.87	Ridge View Subdivision	1515 Sleepy Hollow Rd	10920788.88820	3583290.90637	Yes	N/A		Z-1666	01666	031232	Residential						5/19/2016
66	2008-2009	Detention	NE58	Crab Creek	TBD	South Hill Park Addition	360 Auburn Dr.	10923912.97560	3572096.37753	Yes	N/A		Z-992	00992	030767	Residential						5/12/2016
67	2008-2009	Detention	NE58	Crab Creek	TBD	Sun Village East	470 Wakeman Court	10927046.78860	3583229.24862	Yes	N/A		Z-1117	01117		Residential						5/24/2016
68	2008-2009	Detention	NE58	Crab Creek	TBD	Sun Village West	240 Wakeman Court	10926346.78860	3583119.87362	Yes	N/A		Z-1117	01117		Residential						5/24/2016
69	2008-2009	Detention	NE58	Crab Creek	68.90	Vistavia Phase V	George Edward Via	10921941.84840	3580538.57661	Yes	N/A		Z-752	00725	029844	Residential						5/24/2016
70	2008-2009	Detention	NE58	Crab Creek	TBD	Alder Lane Pond	260 Alder Lane	10917321.33290	3584842.10176	Yes	N/A		Z-1959	01959	013232	Residential						5/24/2016
72	2008-2009	Detention	NE58	Crab Creek	10.17	Huff Heritage	Huff Heritage Lane	10935902.45140	3575488.15861	Yes	N/A		z-629	00629	121009	Residential						5/25/2016
73	2008-2009	Bioretention Basin	NE58	Crab Creek	1.43??	AEP Sub Station Bio-Retention	3785 Kirby Dr	10949202.05700	3579340.13500	No	Yes?		Z-2016	02016	140889	Commercial						6/2/2016
74	2008-2009	Bioretention Filter	NE58	Crab Creek	4.25	Cambria Point Self-Storage	Behind 405 Cambria St	10922104.64850	3585377.92247	No	Yes		Z-810	00810	140652	Commercial						5/19/2016
75	2008-2009	Extended Detention	NE58	Crab Creek	1.33	R.E. Michels	275 Scattergood Dr	10923302.09210	3581056.97808	No	Yes		Z-827	00827	036124	Commercial						6/3/2016
76	2008-2009	Extended Detention	NE58	Crab Creek	TBD of 7.16	Depot St. Townhomes	Behind 10 - 40 Station Lane	10928026.33400	3580521.06700	No	Yes		z-841	00841		Residential			158 to 76			5/9/2016
77	2009-2010	Manufactured BMP	NE58	Crab Creek	0.59	McDonalds	1595 N. Franklin St	10925038.01170	3583992.49153	No	Yes		Z-842	00842	013213	Commercial						5/24/2016
78	2009-2010	Manufactured BMP	NE58	Crab Creek	TBD of 0.8	O'Reilly Auto Parts Manufactured	1275 Roanoke St	10933682.71970	3577693.71555	No	Yes		Z-996	00996	021404	Commercial			166 to 78			5/25/2016
79	2009-2010	Bioretention Filter	NE58	Crab Creek	1.09	Aquatic Center Bioretention West	595 N. Franklin St	10925178.12210	3579432.82347	Yes	N/A		Z-642	00642	010896	Commercial						5/9/2016
80	2009-2010	Bioretention Filter	NE58	Crab Creek	8.26	Aquatic Center Bioretention East	595 N. Franklin St	10925895.58900	3579241.11546	Yes	N/A		Z-642	00642	070356	Commercial						5/6/2016
81	2009-2010	Extended Detention	NE58	Crab Creek	14.78	Good Samaritan Hospice	1160 Moose Dr	10922400.88730	3572980.38453	No	Yes		Z-846	00846	008095	Commercial						5/6/2016
82	2011-2012	Manufactured BMP	NE58	Crab Creek	2.45	Montgomery County Courthouse	55 E Main St	10926880.34510	3576462.42473	No	Yes		Z-845	00845	071124	Commercial			82 to 83			
83	2011-2012	Underground Detention	NE58	Crab Creek	2.45	Montgomery County Courthouse	55 E Main St	10926836.26030	3576436.75746	No	Yes		Z-845	00845	071124	Commercial			82 to 83			
84	2012-2013	Manufactured BMP	NE58	Crab Creek	TBD of 0.29	Waffle House Filterra	90 Oak Tree Boulevard NW	10924658.40200	3583385.03100	No	Yes		Z-1078	01078	080190	Commercial			84 to 167			5/24/2016
85	2008-2009	Bioretention Filter	RU07	Wilson Creek	TBD	CHP Energy Services Warehouse South	400 Industrial Dr	10940496.28850	3580380.01670	No	Pending		z-653	00653		Commercial						5/31/2016
86	2008-2009	Manufactured BMP	NE59	Slate Branch	TBD	NRV Mall Aqua-Filters at Shoppers Way North	Shoppers Way Parking Lot	10921679.62700	3590687.61800	No	Pending		Z-645	00645		Commercial			86 to 95			
87	2008-2009	Extended Detention	RU07	Wilson Creek	2.95	Harley-Davidson	2700 Roanoke St	10943352.68550	3579753.98241	No	No		Z-667	00667		Commercial						5/26/2016
88	2008-2009	Detention	RU07	Wilson Creek	6.65	Christiansburg Baptist Church	2895 Roanoke St	10944926.03610	3579134.19075	No	No		z-561	00561		Commercial						5/26/2016
89	2008-2009	Detention	RU04	Elliots Creek	3.44	Harbor of Hope Church Front	2720 Roanoke St	10943739.69700	3579264.75124	No	No		z-590	00590		Commercial						5/26/2016
90	2008-2009	Detention	RU07	Wilson Creek	5.64	Harbor of Hope Church Rear	2720 Roanoke St	10943695.42620	3579881.93874	No	No		z-590	00590		Commercial						5/26/2016
91	2008-2009	Detention	NE59	Slate Branch	TBD	Market Place/Arbor View Pond Modification	Rt. 460	10922729.37700	3589509.52500	No	No		Z-990 and z-	00990 and 01371		Commercial						5/16/2016
92	2008-2009	Detention	NE59	Slate Branch	16.29	New River Village Phase 1 A	Across from Albert Ln Entrance	10915579.84800	3589282.70300	No	No		z-781	00781		Residential						4/27/2016
93	2008-2009	Detention	NE59	Slate Branch	157.39	New River Village Phase 1 B	Behind 195 Sequoia Cir	10915662.86300	3590295.23200	No	No		z-781	00781		Residential						4/27/2016
94	2008-2009	Detention	NE59	Slate Branch	22.26	New River Village Phase 5	Behind 180 Aster Lane	10915834.77450	3591596.34196	No	No		z-781	00781		Residential						4/27/2016
95	2008-2009	Detention	NE59	Slate Branch	TBD	NRV Mall Pond at Shoppers Way	175 Shoppers Way	10921459.22120	3590514.87541	No	No		z-645	00645		Commercial						5/18/2016
96	2008-2009	Detention	NE59	Slate Branch	TBD	NRV Mall Pond North		10920871.22500	3590346.31000	No	No		z-1787	01787		Commercial						5/20/2016
97	2008-2009	Detention	NE59	Slate Branch	TBD	NRV Mall Pond West		10920635.41200	3589675.14000	No	No		z-1410	01410		Commercial						5/20/2016
98	2008-2009	Detention	NE59	Slate Branch	9.84	Stafford Farms	Meadow Dr	10917753.27290	3590777.08819	No	No		z-788	00788		Residential						5/3/2016
99	2008-2009	Detention	NE59	Slate Branch	25.90	Wal-Mart Supercenter Big Pond	Peppers Ferry Rd at Huckleberry Tr	10921276.28300	3588194.33300	No	No		Z-1861	01861		Commercial						5/20/2016
100	2008-2009	Detention	NE59	Slate Branch	2.70	Wal-Mart Supercenter Small Pond	South of Wal-Mart	10922164.95500	3587553.05700	No	No		Z-1861	01861		Commercial						5/20/2016
102	2008-2009	Detention	NE59	Slate Branch	TBD	The Villas at Peppers Ferry Front Pond 1	West of Quin W. Stuart Blvd	10920069.69600	3589268.35200	No	No		Z-588	00588		Residential			102 to 168			5/4/2016
103	2008-2009	Detention	NE59	Slate Branch	TBD	The Villas at Peppers Ferry Middle	East of Patriots Way	10919975.65900	3590196.96600	No	No		z-790	00790		Residential						3/30/2015
104	2008-2009	Detention	RU07	Wilson Creek	8.24	Wheatland Hills	Behind 222 and 226 Wheatland Ct	10924966.66600	3587070.24000	No	No		Z-809	00809		Commercial						5/24/2016
105	2008-2009	Detention	NE59	Slate Branch	1.50	Church Of Jesus Christ Apostolic	783 Stafford Dr	10918741.42600	3591842.61100	No	No		z-628	00628		Commercial						5/3/2016
106	2008-2009	Detention	NE59	Slate Branch	0.99	Affordable Self Storage	1035 Peppers Ferry Rd	10917015.30300	3589032.31700	No	No		z-621	00621		Commercial						5/3/2016
107	2008-2009	Infiltration	RU04	Elliots Creek	0.46	Sink's Antiques	2150 Roanoke St	10938270.29000	3578498.77000	No	No		z-605	00605		Commercial						6/11/2016
108	2008-2009	Detention	NE59	Slate Branch	4.58	Adventure World	200 Midway Plaza Dr	10922861.57320	3592770.57968	No	No		z-595	00595		Commercial						5/18/2016
109	2008-2009	Underground Detention	RU04	Elliots Creek	6.60	Shelor Dodge	2395 Roanoke St	10940500.71500	3578087.57200	No	No		z-581	00581		Commercial						
110	2008-2009	Infiltration	RU04	Elliots Creek	0.47	Creative Family Solutions	180 Teel St	10938458.77500	3578708.72500	No	No		z-580	00580		Commercial						6/1/2016
111	2008-2009	Detention	RU04	Elliots Creek	2.16	84 Lumber	2245 Roanoke St	10938669.87100	3578093.92100	No	No		z-562	00562		Commercial						6/1/2016
112	2008-2009	Detention	NE59	Slate Branch	1.41	Midway Office Park (AHV Office)	20 Midway Plaza Drive	10923299.77400	3592791.01300	No	No		z-538	00538		Commercial						5/18/2016
113	2008-2009	Detention	RU04	Elliots Creek	TBD	Mud Pike Mini Storage	1335 Mudpike	10922463.40120	3572335.54529	No	No		z-526	00526		Commercial						5/12/2016

ID	MS4 Permit Year	BMP Type	HUC	Impaired Waters	No. of Acres Treated	Pond Name	Nearest Address	Easting	Northing	Town Maintained Y/N	Maintenance Agreement Y/N	Maint Agreement date	Site Plan #	TOC Project Number	Parcel Number	Current Land Use	Impervious Acres Treated	Managed Turf Acres Treated (RR Method)	Phosphorous Removal	Directly in Series with ID#	Date Brought Online	Most Recent Inspection Date
114	2008-2009	Detention	NE59	Slate Branch	0.92	3W Corp Mini Storage	5 Midway Plaza Drive	10923291.52	3593526.526	No	No		z-521	00521	030248	Commercial	0	0				5/18/2016
115	2008-2009	Infiltration	RU07	Wilson Creek	2.00	Midway Discount Center	215 County Dr	10924182.61400	3592542.02100	No	No		z-516	00516		Commercial						5/16/2016
116	2008-2009	Detention	RU04	Elliots Creek	1.63	Holiday Inn Express	2725 Roanoke St	10943681.22400	3578975.55200	No	No		z-513	00513		Commercial						5/26/2016
117	2008-2009	Underground Detention	RU04	Elliots Creek	TBD	Shelor Motor Mile	Across from 240 Jarret Lane	10939878.17040	3578004.29023	No	No		z-504	00504		Commercial						
118	2008-2009	Detention	NE59	Slate Branch	79.40	Spradlin Farms	Next to 180 Conston Ave	10921800.20830	3586885.34837	No	No		z-488	00488		Commercial						3/30/2015
119	2008-2009	nhanced Extended Detentic	RU04	Elliots Creek	3.53	Fairfield Inn / Homewood Suites	2659 Roanoke St	10943141.57200	3578265.97000	No	Yes		Z-1999	01999		Commercial						5/26/2016
120	2008-2009	Detention	RU04	Elliots Creek	TBD	Fleetwood Homes	1340 W Main Street	10923173.51400	3571842.82300	No	No		z-462	00462		Commercial						5/12/2016
121	2008-2009	Detention	NE58	Crab Creek	6.70	Rt 114 Mini Storage	710 Peppers Ferry Rd	10918654.72950	3588099.09703	No	No		z-453	00453		Commercial						5/4/2016
122	2008-2009	Detention	NE59	Slate Branch	15.50	Merchants Tire and Auto / Halberstadt Triangle Plaza	400 Peppers Ferry Rd	10920366.80200	3588219.85443	No	No		z-443 and z-	00443 an d 01383		Commercial						5/4/2016
123	2008-2009	Detention	RU04	Elliots Creek	4.84	Hokie Honda / Hyundai Rear	2040 Roanoke St	10937425.56620	3578848.73467	No	No		z-429	00429		Commercial						6/1/2016
124	2008-2009	Detention	NE59	Slate Branch	TBD	Affordable Efficiencies, Inc	1045 Peppers Ferry Road NW	10917148.96600	3588810.94500	No	No		z-404	00404		Commercial						5/3/2016
125	2008-2009	Detention	NE59	Slate Branch	TBD	Midas Muffler (Now Enterprise)	55 Ponderosa Drive	10923396.56000	3591519.31911	No	No		z-356 and z-	00356 and 00663		Commercial				130 to 125		5/16/2016
126	2008-2009	Detention	RU04	Elliots Creek	TBD	Cracker Barrel	30 Hampton Blvd	10942736.72050	3579563.84649	No	No		z-140	00140		Commercial						5/31/2016
127	2008-2009	Detention	RU04	Elliots Creek	TBD	Interstate - Near cracker barrel	30 Hampton Blvd	10942309.58510	3579215.98191	No	No					Commercial						
128	2008-2009	Detention	RU04	Elliots Creek	TBD	Interstate - Falling Branch Interchange		10939554.11500	3576501.43000	No	No		N/A	N/A		Open Land					Not Constructed	3/30/2014
129	2008-2009	Retention Pond	RU07	Wilson Creek	20.56	Hampton Blvd Pond	80 Hampton Blvd	10943253.55640	3580201.31359	No	No		z-82	00082		Commercial						5/31/2016
130	2008-2009	Detention	NE59	Slate Branch	1.00	Arbor View Phase 5/Burch Property Arbor View Plantation	95 Ponderosa Dr	10923699.55000	3591426.78600	No	No		z-663	00663		Commercial				130 to 125		5/16/2016
131	2008-2009	Detention	RU07	Wilson Creek	173.76	CIP 1 Big Pond	471 Houchins Rd.	10941048.69530	3581185.25456	Yes	N/A		Z-1981	01981	120346	Open Land						5/31/2016
132	2008-2009	Extended Detention	RU07	Wilson Creek	13.84	CIP 2 Smaller WQ	555 Industrial Dr.	10939323.43490	3581354.52540	Yes	N/A		Z-1054	01054	160190	Open Land						5/31/2016
133	2008-2009	Detention	RU04	Elliots Creek	15.99	Falling Branch	Glade Dr & Cullen Ct	10941899.17280	3577338.24936	Yes	N/A		Z-1845	01845	030406	Residential						5/26/2016
134	2008-2009	Detention	NE59	Slate Branch	TBD	Slate Creek Commons	Beside Walters Dr	10916829.85600	3589717.88383	Yes	N/A		Z-589	00589	110420	Residential						4/27/2016
136	2009-2010	Water Quality Swale	RU07	Wilson Creek	3.40	Air-Gas	2260 Prospect Dr	10939953.99730	3580037.93101	No	No		z-666	00666	025838	Commercial						5/31/2016
137	2010-2011	Detention	RU07	Wilson Creek	13.03	White Pine Ct	735 White Pine Dr NE	10947763.87380	3581904.13622	Yes	N/A		Z-923	00923	080053	Open Land						5/31/2016
138	2010-2011	Detention	NE59	Slate Branch	TBD	VDOT Pond on Quin W Stuart	Quin W. Stuart Blvd	10920369.49240	3588988.08791	Yes	N/A		Z-790	00790	110093	Commercial						5/4/2016
139	2010-2011	Extended Detention	NE59	Slate Branch	11.88	VDOT Pond for 114	1540 Peppers Ferry Rd	10914222.14110	3589525.23511	Yes	N/A		Z-1034	01034	110869	Open Land						6/3/2016
140	2011-2012	Bioretention Filter	NE59	Slate Branch	TBD of 0.94	Holiday Inn Biofilter North	99 Bradley Drive	10921255.47660	3588442.70857	No	Yes		Z-1057	01057	032241	Commercial				140 to 99		5/20/2016
141	2011-2012	Infiltration	RU07	Wilson Creek	1.36	Good Shepherd Baptist Church	155 Dunlap Drive	10945717.00860	3579398.24421	No	Yes		Z-1076	01076	071134	Commercial						5/26/2016
142	2012-2013	Extended Detention	RU04	Smith Creek	8.76	Melinda's Melody / Kensington	450 Thaddeus Ln NW	10919753.69820	3572275.48111	No	Yes		Z-1060	01060	170238	Residential						5/25/2016
143	2012-2013	Bioretention Filter	RU04	Elliots Creek	0.26	Shelor Service Center Addition East	295 Jarrett Dr SE	10939813.55800	3577623.76900	No	Yes		Z-1902	01902	036084	Commercial						6/1/2016
144	2012-2013	Bioretention Filter	RU04	Elliots Creek	0.21	Shelor Service Center Addition West	295 Jarrett Dr SE	10939578.34610	3577566.51355	No	Yes		Z-1902	01902	036084	Commercial						6/1/2016
145	2012-2013	Extended Detention	RU04	Elliots Creek	TBD	Shelor Toyota	2230 Roanoke St	10938867.06580	3578760.88647	No	Yes		Z-1066	01066	020545	Commercial						6/1/2016
146	2012-2013	Underground Detention	RU04	Elliots Creek	TBD	Shelor Toyota Underground	2230 Roanoke St	10938984.77410	3578740.57397	No	Yes		Z-1066	01066	020545	Commercial						3/30/2015
147	2013-2014	Underground Detention	RU04	Elliots Creek	TBD of 2.4	Collins Property Underground	2340 Roanoke St	10939488.16100	3578768.17200	No	Yes		Z-1900	01900	003759	Commercial	1.97	n/a		148 to 147		
148	2013-2014	Bioretention Filter	RU04	Elliots Creek	TBD of 2.11	Collins Property South	2340 Roanoke St (behind Wendy's)	10939575.75700	3578789.72200	No	Yes		Z-1900	01900	003759	Commercial	1.75	n/a		148 to 147		5/31/2016
149	2013-2014	Bioretention Filter (	RU07	Wilson Creek	1.71	Collins Property North	2340 Roanoke St (rear of property)	10939623.28300	3579259.02500	No	Yes		Z-1900	01900	003759	Commercial	1.39	n/a				6/1/2016
150	2013-2014	Extended Detention	RU07	Wilson Creek	2.40	Davenport Energy	2275 Prospect Dr NE	10939609.06690	3579448.56377	No	Yes		Z-1056	01056	170126	Commercial						5/31/2016
151	2013-2014	Bioretention Filter	RU07	Wilson Creek	5.00	C.C.S., Inc.	2285 Prospect Dr NE	10940018.78910	3579454.64015	No	Yes		Z-1065	01065	140661	Commercial	2.48	n/a				5/31/2016
152	2013-2014	Bioretention Filter	RU07	Wilson Creek	TBD of 0.79	Southern Refrigeration Bioretention	3235 N Franklin St	10923989.16500	3592671.13900	No	Yes		Z-1915	01915	027584	Commercial						5/16/2016
153	2014-2015	Detention	NE58	Crab Creek	TBD	VDOT pond behind First Church of the Nazarene	860 Peppers Ferry Rd	10918109.66000	3588454.54800	Yes	Town will assume from VDOT					Commercial						4/27/2016
154	2013-2014	Bioretention Filter	NE58	Crab Creek	0.31	Fisher St Townhomes	115 Fisher Street	10936924.22820	3577977.05048	No	Yes		Z-1899	01899	010610	Residential				154 to 159		6/2/2016
155	2013-2014	Bioretention Filter	NE58	Crab Creek	0.09	Rice Maco	1015 Radford Street	10920807.99300	3575707.23400	No	Yes		Z-1988	01988	010299	Commercial						5/10/2016
157	2008-2009	Bioretention Filter	NE58	Crab Creek	TBD of 4.45	Mink Street Subdivision Ashton Ct East	105 Ashton Ct.	10919592.65840	3575224.94790	No	No		z-665	00665		Residential						5/10/2016
158	2008-2009	Manufactured BMP	NE58	Crab Creek	TBD of 7.16	Depot St. Townhomes Filterra	adjacent to 40 Station Lane	10928026.33400	3580521.06700	No	Yes		z-841	00841		Residential				158 to 76		5/9/2016
159	2013-2014	Underground Detention	NE58	Crab Creek	TBD of 0.31	Fisher St Townhomes Underground	115 Fisher Street	10936856.57400	3577963.45500	No	Yes		Z-1899	01899	010610	Residential				154 to 159		
160	2011-2012	Bioretention Filter	NE59	Slate Branch	TBD of 0.94	Holiday Inn Biofilter Front	99 Bradley Drive	10921413.97800	3588396.07200	No	Yes		Z-1057	01057	032241	Commercial				160 to 99		5/20/2016
161	2011-2012	Bioretention Filter	NE59	Slate Branch	TBD of 0.94	Holiday Inn Biofilter South	99 Bradley Drive	10921255.47660	3588442.70857	No	Yes		Z-1057	01057	032241	Commercial				161 to 99		5/20/2016
162	2008-2009	Manufactured BMP	NE59	Slate Branch	TBD	NRV Mall Aqua-Filters at Shoppers Way Front East	Shoppers Way Parking Lot	10922029.01000	3590147.25300	No	Pending		Z-645	00645		Commercial				162 to 95		
163	2008-2009	Manufactured BMP	NE59	Slate Branch	TBD	NRV Mall Aqua-Filters at Shoppers Way Front Middle	Shoppers Way Parking Lot	10921969.34000	3590166.78400	No	Pending		Z-645	00645		Commercial				163 to 95		
164	2008-2009	Manufactured BMP	NE59	Slate Branch	TBD	NRV Mall Aqua-Filters at Shoppers Way Front West	Shoppers Way Parking Lot	10921808.75000	3590303.50300	No	Pending		Z-645	00645		Commercial				164 to 95		
165	2009-2010	Detention	NE58	Crab Creek	TBD of 0.8	O'Reilly Auto Parts Side	1275 Roanoke St	10933616.70000	3577605.37500	No	Yes		Z-996	00996	021404	Commercial				165 to 166		5/25/2016
166	2009-2010	Detention	NE58	Crab Creek	TBD of 0.8	O'Reilly Auto Parts front	1275 Roanoke St	10933732.18600	3577675.34900	No	Yes		Z-996	00996	021404	Commercial				166 to 78		5/25/2016
167	2012-2013	Detention	NE58	Crab Creek	TBD of 0.29	Waffle House Detention	90 Oak Tree Boulevard NW	10924743.69000	3583382.40700	No	Yes		Z-1078	01078	080190	Commercial				84 to 167		5/24/2016
168	2008-2009	Detention	NE59	Slate Branch	TBD	The Villas at Peppers Ferry Front Pond 2	East of Quin W. Stuart Blvd	10920317.09200	3589412.08300	No	No		z -790	00790		Residential				102 to 168		5/4/2016
169	2013-2014	Detention	RU07	Wilson Creek	TBD of 0.79	Southern Refrigeration Detention	3235 N Franklin St	10924011.57100	3592757.56500	No	Yes		Z-1915	01915	027584	Commercial						5/16/2016
170	2008-2009	Infiltration	NE58	Crab Creek	0.26	Haymaker St Apartments Infiltration A	Next to 143 Haymaker St	10930773.56800	3577420.48200	No	No		z-567	00567		Residential						6/14/2016
171	2008-2009	Infiltration	NE58	Crab Creek	0.04	Haymaker St Apartments Infiltration B	Next to 131 Haymaker St	10930710.08500	3577617.72200	No	No		z-567	00567		Residential						6/14/2016
172	2008-2009	Bioretention Filter	NE58	Crab Creek	TBD	AEP Tech Drive Station	Falling Branch Industrial Park Corpo	10933568.50500	3573717.18200	No	Yes		z-822	00822		Commercial						7/11/2016
173	2008-2009	Bioretention Filter	RU07	Wilson Creek	TBD	CHP Energy Services Warehouse North	400 Industrial Dr	10940496.28850	3580380.01670	No	Pending		z-653	00653		Commercial						7/22/2016
174	2016-2017	Infiltration Basin	NE58	Crab Creek	TBD	The Haven (Hill Street)	Behind 202 A- D Hill St.	10926755.02100	3577598.54900	No	Yes		z-2007	02007	021114	Residential					07/01/16	
175	2012-2013	Grass Swale	NE58	Crab Creek	TBD	Waffle House WQ Swale	90 Oak Tree Boulevard NW	10924765.69300	3583285.54900	No	Yes		Z-1078	01078	080190	Commercial						
176		Detention	NE58	Crab Creek	TBD	Nugget Ridge	Nugget Ridge Rd and Radford Rd.	10922641.39000		No	No		z-1324	01324		Residential						
177	2014-2015	Detention	NE58	Crab Creek	86.7	Diamond Hills Park SWM Basin	105 Oak Tree Boulevard	10924328.67	3583550.841	Yes	No		z-1965	01965	035570	Commercial	11.00				04/14/14	

Appendix F – BMP 6.3a Employee Training Record

(Final reporting for expired training program. Future training reporting will be provided in the BMP 6.3a Annual Reporting Form)

MS4 Training 5/24/2016

Street Building

		8:30am	Signature			10:00am	Signature
1	✓	John Moore		1	✓	Tim Tucker	
2	✓	Jerry Lovern		2		Greg Dunn	
3		James Collins		3	✓	Tim Allen	
4		David Crapser		4		Tommy Spaulding	
5	✓	Michael Price		5	✓	Dale Lee	
6		John Crute		6	✓	Daniel Wright	
7		Dennis Minnick		7		Charlie Moore	
8	✓	Donald Cunningham		8	✓	Trey Griffith	
9	✓	William Dove		9	✓	Sammy Phipps	
10	✓	Ray Willis		10		Casper Violette	
11	✓	Matthew Link		11	✓	Curtis Goad	
12	✓	Roger Howell		12		Matthew Gillispie	
13	✓	Dale Gillespie		13	✓	Kenneth Custer	
14	✓	Ken Mummau		14		Carl Light	
15	✓	Adam Phillips		15		Freddie Price	FC Price
16	✓	John Ross		16		David Haskins	
17	✓	Tommy Price		17		Larry Rudisill	
18		Debbie Gibson		18		Bruce Harris	
19	✓	Gary Lawerence		19		Richard Weber	
20	✓	Mike Lucas		20		Dean Davis	
21	✓	Michael McCraw		21	✓	Travis Lester	Travis Lester
22	✓	Torrey Trussell		22		Brandy Hill	
23	✓	Steven Dalton		23		David Hughes	
24	✓	Terry Hungate		24	✓	Lloyd Lopes	Lloyd Lopes
25	✓	Dusty Adkins		25		Cris Hardwick	
26	✓	Randy Turman		26	✓	Tanya Hockett	
27		Rodney Shepherd		27		Leon Martin	
28	✓	Nathan Wells		28	✓	Justin Shepherd	
29	✓	Travis Hudson		29		John Kirtner	
30		Andy NewComb		30		Greg Dalton	
31	✓	Garry Moore		31	✓	Tommy Sullivan	
32	✓	Joe Booth		32	✓	Barry Martin	
33		Jason Price		33	✓	Brad Phillips	
34		Matthew Cavanaugh		34	✓	Richard Monday	Richard Monday
35		Billy Woolwine		35	✓	Jamie Boston	
36		Joseph Gleason		36		Ricky Bourne	
37	✓	Dewayne Gilmore		37		Jim Lancianese	
38	✓	Darrell Farmer		38		Ryan Hendrix	
39	✓	Steven Witt		39		David Sutphin	
40	✓	Joseph Rotella		40		Eddie Smith	
41	✓	James Hanshaw		41		WWTF	
42		~~WWTF~~ ENGINEERING		42		WWTF	
43		WWTF JOHN BURKE		43		WWTF	
44		WWTF		44		WWTF	
45		WWTF		45		WWTF	
46		WWTF		46		WWTF	
47		WWTF			✓	Travis Hudson	Travis Hudson

✓ Josh Dickerson ✓

Christiansburg MS4 Training Graded Quiz Summary				
Name	**Date**	**Score**		**Percentage**
Tanya Hockett	5/24/2016	10	/10	100
Daniel Wright	5/24/2016	4	/10	40
Curtis Goad	5/24/2016	10	/10	100
Ray Willis	5/24/2016	5	/10	50
Steven Witt	5/24/2016	9	/10	90
John Moore	5/24/2016	7	/10	70
Gary Lawrence	5/24/2016	7	/10	70
Dale Gillespie	5/24/2016	5	/10	50
Dewayne Gilmore	5/24/2016	6	/10	60
Roger Howell	5/24/2016	6	/10	60
William Dove	5/24/2016	10	/10	100
Dusty Adkins	5/24/2016	5	/10	50
Lloyd Lopes	5/24/2016	10	/10	100
Michael Price	5/24/2016	5	/10	50
Joseph Rotella	5/24/2016	10	/10	100
Darrell Farmer	5/24/2016	7	/10	70
Jerry Lovern	5/24/2016	8	/10	80
Adam Phillips	5/24/2016	8	/10	80
Donald Cunningham	5/24/2016	3	/10	30
Randy Turman	5/24/2016	10	/10	100
Tommy Price	5/24/2016	10	/10	100
John Ross	5/24/2016	10	/10	100
Nathan Wells	5/24/2016	9	/10	90
Jamie Boston	5/24/2016	9	/10	90
Joe Booth	5/24/2016	10	/10	100
Terry Hungate	5/24/2016	9	/10	90
Garry Moore	5/24/2016	8	/10	80
Dave Crapser	5/24/2016	10	/10	100
Torrey Trussel	5/24/2016	8	/10	80
Mike McCraw	5/24/2016	9	/10	90
Josh Dickerson	5/24/2016	9	/10	90
Travis Lester	5/24/2016	8	/10	80
Ken Mummau	5/24/2016	10	/10	100
Matthew Link	5/24/2016	10	/10	100
Travis Hudson	5/24/2016	10	/10	100
James Hanshaw	5/24/2016	7	/10	70
Steven Dalton	5/24/2016	10	/10	100
Michael Lucas	5/24/2016	10	/10	100
Justin Shepherd	5/24/2016	9	/10	90
Brad Phillips	5/24/2016	10	/10	100
Richard Monday	5/24/2016	9	/10	90
Trey Griffith	5/24/2016	9	/10	90
Sammy Phipps	5/24/2016	10	/10	100
Barry Martin	5/24/2016	10	/10	100
Tim Allen	5/24/2016	10	/10	100

Thomas Sullivan	5/24/2016	9	/10	90
Timothy Tucker	5/24/2016	10	/10	100
Greg Dunn	5/24/2016	10	/10	100
Kenny Custer	5/24/2016	8	/10	80
Dale Lee	5/24/2016	5	/10	50
Matt Gillispie	5/24/2016	10	/10	100
No Name	5/24/2016	5	/10	50
Cannot distinguish name (Charley N ?)	5/24/2016	7	/10	70
Cannot distinguish name (Ian Calli ?)	5/24/2016	10	/10	100
Average		8	/10	84