

## Annual Reporting for VA0088617

The permittee shall submit the annual report to the Department in accordance with the following schedule:

Reporting Period	Annual Report Due Date
April 1, 2015 through December 31, 2015	March 31, 2016
January 1, 2016 through December 31, 2016	March 31, 2017
January 1, 2017 through December 31, 2017	March 31, 2018
January 1, 2018 through December 31, 2018	March 31, 2019
January 1, 2019 through December 31, 2019	March 31, 2020
January 1, 2020 through March 31, 2020	March 31, 2021

Each annual report shall include the following background information:

The permittee and permit number of the program submitting the annual report;

Henrico County / VA0088617

Any modifications to the MS4 Program Plan as a result of the annual report;

None

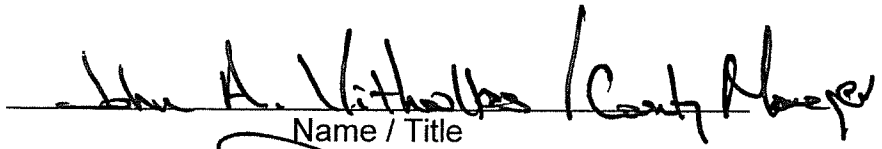
The reporting dates for which the annual report is being submitted; and

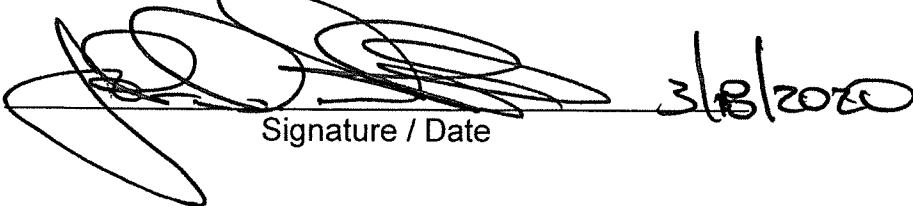
January 1, 2019 through December 31, 2019

### Certification as per Part II.K.

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

that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

  
Name / Title

  
Signature / Date

*For a municipality, state, federal, or other public agency signature by either a principal executive officer or ranking elected official. For purposes of this subsection, a principal executive officer of a public agency includes:*

- 1) The chief executive officer of the agency, or*
- 2) A senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency.*

**A summary of the implementation of each of the components established under Part I.B. and an evaluation of the effectiveness of each component. Additionally, the annual report shall include a summary of progress toward development of new MS4 Program components developed in accordance with the due dates as specified in the permit. The permittee should attempt to limit any component's narrative summary to no longer than two-pages plus any necessary tables and figures.**

#### Part I.B.1 - Planning

A stormwater retrofit project summary that includes potential stormwater management projects to be completed during the term of the permit is posted on the County's website. The information in the Annual Report Supplement and MS4 Program Plan adequately addresses the permit requirements.

#### Part I.B.2.a - Construction Site Runoff and Post Construction Runoff from Areas of New Development and Development on Prior Developed Lands

The County implements an Erosion and Sediment Control Program and a Stormwater Management Program that have been determined to be consistent with state law and regulations. Implementation of the programs listed in this section will adequately address the permit concerns for this MS4 program element.

#### Part I.B.2.b - Retrofitting on Prior Developed Lands

The status of the retrofit projects listed in part I.B.1 that are being conducted during this permit term is provided in the Annual Report Supplement. The information included in the summary adequately addresses the permit requirements.

#### Part I.B.2.c - Roadways

The various Departments / Divisions that are responsible for maintaining roads, streets, and parking lots are aware of proper management goals / objectives. Inventories of County-maintained roads, streets and parking lots have also been developed as well as the stormwater treatment details required by the MS4 Permit. Implementation of the programs listed in this section will adequately address the permit concerns for this MS4 program element.

#### Part I.B.2.d - Pesticide, Herbicide, and Fertilizer Application

County-maintained lands have been evaluated to determine where nutrients are applied to more than one contiguous acre and the Departments / Divisions responsible for the County-maintained lands have been made aware of proper management goals / objectives. Summaries of the implementation details are included in the Annual Report Supplement as required by the MS4 Permit. Implementation of the programs listed in this section will adequately address the permit concerns for this MS4 program element.

#### Part I.B.2.e - Illicit Discharges and Improper Disposal

The County continues to implement programs to identify and eliminate illicit discharges. The County also has a program to inspect sanitary sewer system. Community cleanups, litter prevention and collection programs, and development design requirements are in place to reduce floatables. Summaries of the implementation details are included in the Annual Report Supplement as required by the MS4 Permit. Implementation of the programs listed in this section will adequately address the permit concerns for this MS4 program element.

#### Part I.B.2.f - Spill Prevention and Response

The County continues to implement programs to prevent, contain, and respond to spills that may discharge into the MS4. These programs involve cooperation with various Departments / Divisions. The results of the implementation of these programs are included in the Annual Report Supplement as required by the MS4 Permit. Implementation of the programs listed in this section will adequately address the permit concerns for this MS4 program element.

#### Part I.B.2.g - Industrial and High Risk Runoff

The County continues to implement a program to identify and control pollutants in stormwater discharges to the MS4 from industrial and high risk runoff facilities. Summaries of the implementation details are included in the Annual Report Supplement as required by the MS4 Permit. Implementation of the programs listed in this section will adequately address the permit concerns for this MS4 program element.

#### Part I.B.2.h - Stormwater Infrastructure Management

The County continues to implement programs to maintain the County's stormwater infrastructure and to update the accuracy and inventory of the storm sewer system. The Departments / Divisions responsible for County maintained lands are aware of the management goals / objectives and summaries of the implementation details are included in the Annual Report Supplement as required by the MS4 Permit. Implementation of the programs listed in this section will adequately address the permit concerns for this MS4 program element.

#### Part I.B.2.i - County Facilities

County-maintained facilities have been evaluated to determine which ones are High Priority Municipal Facilities and the Departments/Divisions responsible for County facilities are aware of proper management goals / objectives. Summaries of the implementation details are included in the Annual Report Supplement as required by the MS4 Permit. Implementation of the programs listed in this section will adequately address the permit concerns for this MS4 program element.

#### Part I.B.2.j - Public Education / Participation

The various Departments / Divisions in the County implement many public education programs with the goal of increasing the stormwater knowledge

of target audiences and changing behavior to result in pollutant reductions. Summaries of the program activities and the audiences reached are listed in the Annual Report Supplement as required by the MS4 Permit. Implementation of the programs listed in this section will adequately address the permit concerns for this MS4 program element.

#### Part I.B.2.k - Training

The various Departments / Divisions in the County conduct and makes available to County staff many training opportunities to address the topics required by the MS4 Permit. Summaries of the training opportunities and the number of staff attending are listed in the Annual Report Supplement as required by the MS4 Permit. Implementation of the programs listed in this section will adequately address the permit concerns for this MS4 program element.

#### Part I.B.2.l - Water Quality Screening Programs

The County implements both dry and wet weather screening programs in accordance with the requirements of the MS4 permit. Summaries of the implementation details are listed in the Annual Report Supplement as required by the MS4 Permit. Implementation of the programs listed in this section will adequately address the permit concerns for this MS4 program element.

#### Part I.B.2.m - Infrastructure Coordination

The Annual Infrastructure Coordination meeting between County and VDOT representatives occurred on November 30, 2017. During the meeting, all topics required by the MS4 Permit were discussed and the meeting summary is included in the Annual Report Supplement as required by the MS4 Permit.

### **A summary report of the monitoring programs listed under Part I.C**

Summaries of the results of the monitoring programs listed under Part I.C are included in the Annual Report Supplement.

### **A summary of the implementation of each component listed under Part I.D.**

The TMDL Action Plans required by Part I.D have been developed and are posted on the County's website. A summary of projects implemented during this reporting period are included in the Annual Report Supplement.

**The Specific Reporting Requirements identified in this state permit.**

The Specific Reporting Requirements are addressed in the Annual Report Supplements..

**HENRICO COUNTY MS4 PROGRAM PLAN**

**PART I.A.1**  
**AUTHORIZED DISCHARGES**

There are no Specific Reporting Requirements associated with this part of the MS4 Permit.

**HENRICO COUNTY MS4 PROGRAM PLAN**

**PART I.A.2  
PERMITTEE RESPONSIBILITIES**

**Each annual report shall include a current list of roles and responsibilities.**

The roles and responsibilities for the appropriate Departments and Divisions have been established and are provided in the applicable part of the MS4 Program Plan. Given the extent of the tasks associated with the MS4 Permit and the numerous Departments and Divisions that have a role in implementing the requirements of the MS4 Permit, the roles and responsibilities have not been repeated here. Please refer to the MS4 Program Plan for the current list of roles and responsibilities.

**Each annual report shall include a list of those circumstances of non-compliance outside of the permittee's control.**

Circumstance of Non-Compliance Outside County's Control From January 1, 2019 through December 31, 2019	Date
None	



**HENRICO COUNTY MS4 PROGRAM PLAN**

**PART I.A.3  
LEGAL AUTHORITY**

There are no Specific Reporting Requirements associated with this part of the MS4 Permit.

# HENRICO COUNTY MS4 PROGRAM PLAN

## PART I.A.4 MS4 PROGRAM RESOURCES

A copy of the fiscal year's budget including its proposed capital and operation and maintenance expenditures necessary to accomplish the activities required by this state permit shall be submitted with each annual report.

The County's Approved Budget for Fiscal Year 2019 - 2020 can be found at <https://henrico.us/pdfs/finance/ApprovedBudgetFY20/ApprovedBudgetFY2020.pdf>  
Given the size of the document, the budget has not been included in this Annual Report Supplement.

	Approved Overall Budget	Approved Funding for MS4 Program Compliance	Source(s) of Funding
<b>CAPITAL</b>	\$189,389,458	\$2,795,514	General Fund Enterprise Funds
<b>OPERATION AND MAINTENANCE</b>	\$272,943,809	\$9,121,679	General Fund Internal Service Fund Enterprise Funds

**HENRICO COUNTY MS4 PROGRAM PLAN**

**PART I.A.5**

**PERMIT MAINTENANCE FEES**

A statement regarding payment of the applicable MS4 permit maintenance fee, including check date and check number shall be included with each annual report. Note: Please do not include copies of checks or other bank records.

A check (check # 01363059, dated September 1, 2019) for the MS4 Permit Maintenance Fee (\$8,800.00) was submitted on September 13, 2019 to:

Virginia Department of Environmental Quality  
Treasurer of Virginia - DEQ  
P. O. Box 1104  
Richmond, VA 23218

# HENRICO COUNTY MS4 PROGRAM PLAN

## PART I.A.6 MS4 PROGRAM PLAN

Utilizing the last annual report prior to this state permit effective date as a baseline, the permittee's first annual report submitted under this state permit (Initial Report) shall include the necessary updates to describe implementation of this MS4 Program Plan and meet the conditions described in this section.

The current MS4 Program Plan can be found at <http://henrico.us/works/engineering-environmental-services/2015-ms4-permit-and-ms4-program-plan/>.

**NOTE:** For purposes of the next permit cycle, the fourth annual report submitted under this state permit will be considered the updated MS4 Program Plan to be reviewed as part of permit reissuance.

Noted.

**HENRICO COUNTY MS4 PROGRAM PLAN**

**PART I.A.7  
MS4 PROGRAM REVIEW AND UPDATES**

All modifications and proposed modifications shall be reported in accordance with this section of the permit.

The current MS4 Program Plan can be found at <http://henrico.us/works/engineering-environmental-services/2015-ms4-permit-and-ms4-program-plan/>.

# **HENRICO COUNTY MS4 PROGRAM PLAN**

## **PART I.B.1 PLANNING**

The permittee shall provide a current web link to the analysis no later than 12 months after the effective date of this state permit with each annual report.

The stormwater management retrofit project summary can be found at <http://henrico.us/works/engineering-environmental-services/stormwater-retrofit-projects-summary/>.

## HENRICO COUNTY MS4 PROGRAM PLAN

### PART I.B.2.a

#### MS4 PROGRAM IMPLEMENTATION CONSTRUCTION SITE RUNOFF AND POST CONSTRUCTION RUNOFF FROM AREAS OF NEW DEVELOPMENT AND DEVELOPMENT ON PRIOR DEVELOPED LANDS

Each annual report shall contain the number of regulated land disturbing activities approved and the total number of acres disturbed.

Number of Regulated Land Disturbing Activities Approved between January 1, 2019 and December 31, 2019	Total Number of Acres Disturbed
130	636.05

Each annual report shall contain the number of land disturbing activity inspections conducted and the number and type of each enforcement action taken.

ESC and SWM Inspection and Enforcement Actions conducted between January 1, 2019 December 31, 2019	Number of Actions
ESC Inspection - Complete	5,980
ESC Inspection - Follow-Up	485
PreConstruction Meeting	89
SWPPP - Complete	506
SWPPP - Follow-Up	24
Notice to Comply	143
Stop Work Order	7

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## HENRICO COUNTY MS4 PROGRAM PLAN

### PART I.B.2.a

#### ANNUAL REPORT SUPPLEMENT

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## **HENRICO COUNTY MS4 PROGRAM PLAN**

Each annual report shall include a summary of actions taken by the permittee to implement Part I.B.2.a)1) through 3) of this state permit.

No actions such as ordinance revisions, additional staff, revised roles/responsibilities, etc. were taken between January 1, 2019 and December 31, 2019 to implement the local ESC and SWM programs.

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**HENRICO COUNTY MS4 PROGRAM PLAN  
PART I.B.2.a  
ANNUAL REPORT SUPPLEMENT  
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**HENRICO COUNTY MS4 PROGRAM PLAN**

**PART I.B.2.b**

**MS4 PROGRAM IMPLEMENTATION  
RETROFITTING ON PRIOR DEVELOPED LANDS**

Each annual report shall include a status update for those projects for which implementation began during the reporting period.

**Retrofit Projects for which Implementation\* began  
between January 1, 2019 and December 31, 2019**

None

\* For purposes of this reporting requirement, implementation means the construction or installation of the retrofit project.

**HENRICO COUNTY MS4 PROGRAM PLAN**

**PART I.B.2.c  
MS4 PROGRAM IMPLEMENTATION  
ROADWAYS**

The permittee shall include a copy of the written protocols identified in Part I.B.2.c)(2) with the annual report due March 31, 2019.

The written protocols were included in the annual report that was due March 31, 2019.

**HENRICO COUNTY MS4 PROGRAM PLAN**

**PART I.B.2.d**

**MS4 PROGRAM IMPLEMENTATION  
PESTICIDE, HERBICIDE, AND FERTILIZER APPLICATION**

Each annual report submitted after March 31, 2016 shall report on compliance with the turf and landscape nutrient management plan implementation schedule and include a list of the permittee's properties for which turf and landscape nutrient management plans have been implemented during the reporting year and the cumulative total of acreage under turf and landscape nutrient management plans.

MS4 Municipal Management Areas (MMMA) on which Turf and Landscape Nutrient Management Plans were implemented between January 1, 2019 and December 31, 2019		
MMMA	MMMA Description (if applicable)	Acreage Covered
	None	
	<b>TOTAL</b>	

Turf and Landscape Nutrient Management Compliance	
Total acres requiring coverage by a Turf and Landscape Nutrient Management Plan	279.18
Total acres managed by a Turf and Landscape Nutrient Management Plan	279.18
Percentage of identified acres requiring coverage by a Turf and Landscape Nutrient Management Plan that is covered by a Turf and Landscape Nutrient Management Plan	100

**HENRICO COUNTY MS4 PROGRAM PLAN**

Each annual report shall include the number of acres managed under Integrated Pest Management Plans.

Acres managed under Integrated Pest Management Plans	184.843
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**HENRICO COUNTY MS4 PROGRAM PLAN**

**PART I.B.2.e**

**MS4 PROGRAM IMPLEMENTATION  
ILLCIT DISCHARGES AND IMPROPER DISPOSAL**

Each annual report shall include a list of illicit discharges identified, the source, a description of follow-up activities and whether the illicit discharge has been eliminated.

Illicit Discharges Identified between January 1, 2019 and December 31, 2019		
IDDE00476		
Groundwater	<p>01/02/2019 Received notification about sewage seeping up out of the ground</p> <p>01/02/2019 DPW conducted a site visit and observed a saturated area near the sewer clean out for 609 Grayson Ave. The odor was not as strong as is typical for raw sewage although it appeared it may be raw sewage and/or iron bacteria. There was evidence of moisture flowing up out of the ground and the roadside ditch is adjacent to the seepage. The owner at 605 Grayson mentioned several county staff had been to investigate during the last month. DPW phoned DPU to get a status update. DPU conducted a camera investigation in late November of the county lines and determined there was no blockage. They stated the issue may be on the private side and associated with 609 Grayson. DPW left a business card at 609 Grayson Ave and the homeowner phoned back within the hour. DPW explained that it appears she may have a leak in the sanitary sewer line and that a sample was taken to test for fecal coliform. The owner mentioned she had spoken with DPU staff in the last month and while they were there, they observed the sanitary</p>	Illicit discharge eliminated

**HENRICO COUNTY MS4 PROGRAM PLAN**

**PART I.B.2.e**

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	<p>clean out while the plumbing inside the home was activated, and told her it does not appear there is a leak in the private sanitary sewer line.</p> <p>01/03/2019 DPW conducted a follow up site visit to further investigate the source of the saturated area. A plastic, 3", solid pipe was discovered underground of the saturated area. The underground pipe discharges rear yard drainage from 605 Grayson to the roadside ditch. It was clogged and covered up with mud and debris but once it was unclogged, water flowed out of the pipe. What appears to be groundwater was also observed flowing into the roadside ditch where the sanitary sewer lateral is located underground. DPW has requested the old septic system schematics from the Health Department. The sample taken 1/2/2019 was negative for fecal coliform.</p> <p>01/08/2019 DPU conducted a dye test at 609 Grayson Ave. and no leaks from the private side of the sanitary sewer line were observed. DPW has tested the county-owned lines in the vicinity and determined there are no leaks. This appears to be groundwater and Mr. Green was notified of this. Ms. Rosser has a large and deep depression in the backyard from an old pool site. It was recommended that the groundwater be pumped to the roadside ditch instead of across the property and onto 605 Grayson Ave.</p>	
IDDE00477		
Trash in roadway	<p>01/04/2019 Received notification via online spill reporting form about trash on the side of the road.</p> <p>01/04/2019 Requested that the West End Road Dept. pick up the bag of trash.</p>	Illicit discharge eliminated
IDDE00478		
Sediment-laden runoff	01/04/2019 Received notification about sediment-laden water flowing into a county road.	Illicit discharge

**HENRICO COUNTY MS4 PROGRAM PLAN  
PART I.B.2.e  
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	<p>01/04/2019 DPW received video footage and photos of the sediment flowing off private property. The property owner was notified to pursue appropriate corrective action to prevent the sediment-laden runoff.</p> <p>01/09/2019 Received phone call from the responsible party that the runoff is a result of a leaking fire hydrant and they are working with Public Utilities to have it fixed.</p>	eliminated
IDDE00479		
Trash on roadway and private property	<p>01/23/2019 - Received call regarding litter along roadways (Impala Dr, Vernon Rd, Ranco Rd) and on facility property for Virginia Green.</p> <p>01/23/2019 - Emailed Community Maintenance to discuss options for preventing trash from blowing from a company onto the complainant's company property. They have dealt with this issue in the past and will issue a formal Notice of Violation and see if the company can provide better fencing to prevent trash from leaving their property. Made complainant aware of the correspondence with Road Maintenance and Community Maintenance.</p> <p>01/23/2019 - Met onsite with complainant. Trash (mainly paper) is regularly blowing from the loading dock next door onto their company's property. Discussed options for litter removal along roadways and emailed the information to Road Maintenance for removal on 01/23/19. Forwarded issue of trash blowing onto property to Community Maintenance.</p>	Illicit discharge eliminated
IDDE00480		
Water from pipe	<p>01/25/2019 - Received notification from DPW staff stating that water from a pipe draining a field tested positive for chlorine.</p> <p>01/28/2019 - Tested for chlorine--results were negative. Will return to test again on 02/12/19.</p>	Illicit discharge eliminated

**HENRICO COUNTY MS4 PROGRAM PLAN  
PART I.B.2.e  
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	02/12/2019 - Tested again and results were negative.	
IDDE00481		
Drainage	<p>01/28/2019 - Received email from DPW staff regarding a possible utility leak with a slight positive on a chlorine test.</p> <p>01/28/2019 - Spoke with Road Department and they have determined that the water is washing down to this property, as it is 17 ft. below road elevation.</p>	Illicit discharge eliminated
IDDE00482		
Hydroseed dumping & tank rinsing	<p>01/22/2019 - Received voicemail from citizen concerned about a neighbor regularly washing and dumping a hydroseed tank in an area that drains behind the homeowner's property.</p> <p>01/25/2019 - Met onsite with Health Department staff to discuss dumping issue. Health Department provided information regarding testing of well water at the homeowner's property. DPW provided information on VDACS regulations for fertilizer disposal, as well as contact information for a VDACS manager for further inquiry. DPW was informed that the homeowner and other neighbors are disturbed by the large vehicles parked behind the property of the company.</p> <p>01/28/2019 - Forwarded large vehicle parking area issue to Community Maintenance.</p> <p>01/30/2019 - Spoke with Community Maintenance regarding business licensure and updated homeowner to make them aware that the research will take some time. Homeowner stated VDACS said they cannot do anything about the dumping/washing of the hydroseed tank, but that DEQ would be able to help. Discussed issue with DEQ.</p>	Illicit discharge eliminated

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IDDE00483		
Fecal coliform	<p>01/23/2019 - Received call from DPU staff requesting a fecal coliform test in the creek behind a resident's home.</p> <p>01/23/2019 - DPW staff collected samples from the creek to test for fecal coliform.</p> <p>01/28/19 - DPW was notified that the results were below the DEQ water quality standard for that type of water body. DPW notified DPU of the test results.</p>	Illicit discharge eliminated
IDDE00484		
Car wash soap discharge	<p>01/25/2019 - Received call from DEQ to notify DPW that HazMat was responding to a pink substance being washed across a parking lot behind a gas station and car wash facility.</p> <p>01/25/2019 - Met onsite with DEQ and Fire. Fire placed absorbent material on the spill to prevent further flow. DEQ issued a Request for Corrective Action (RCA) to ensure that the spill was properly cleaned and disposed. Gas station and car wash owner swept materials into a pile for removal by their contractor.</p> <p>01/28/2019 - Verified that the site had been properly cleaned.</p>	Illicit discharge eliminated
IDDE00485		
Trash bags in ditch	<p>01/23/2019 - Received notification via online form stating that several bags of trash had been dumped in a ditch the day prior.</p> <p>01/24/2019 - Forwarded to Road Maintenance and left voicemail notifying complainant that the issue has been sent to the Road Department.</p>	Illicit discharge eliminated
IDDE00486		
BMP odor	02/01/2019 - Received email from DPW staff	Illicit

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	<p>regarding a complaint about a noticeable odor that occurs intermittently and appears to be coming from a BMP.</p> <p>02/01/2019 - DPW staff chlorine tested the water flowing into the BMP. No indication of chlorine present. The storm sewer was traced across several streets in the neighborhood to determine the cause. Several cave-ins were noted around various DI-7s, and the first DI in the system with flowing water is located near a water meter. DPW staff notified DPU of the potential water leak to be investigated. Road Maintenance staff met onsite and has written up work orders to address the cave-in issues. DPW notified staff of the findings and requested that the homeowner contacts DPW if he/she notices the BMP odor again.</p>	<p>discharge eliminated</p>
<p>IDDE00487</p>		
<p>Paint dumped in inlet</p>	<p>02/06/2019 - 8600 Staples Mill Road- Henrico County Purchasing Building - Unknown party spilled a white substance (likely white latex paint since it sank in water). Substance estimated to be less than one gallon. Substance was discovered in IN00000046994 located on the side of the purchasing building. A small amount of white product had made it into the downgradient pipe but not to the next curb inlet. This complaint was sent to the Env Manager after a Road Maintenance staff member saw the white staining on the apron of the inlet. The Env Manager then called the Env Program Specialist tasked with spill response. The Env Program Specialist followed County Spill SOP and made the required notifications. First Call was called to conduct the cleanup. The inlet was vacuumed, and the white substance removed from the inlet box and from the down gradient pipe. A boom was place in the down gradient inlet and will be removed in one week by First Call. Pictures of the spill and cleanup can be found in the electronic</p>	<p>Illicit discharge eliminated</p>

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	file. We will follow up with First Call in one week to ensure that the boom was removed.  03/20/2019 - Boom was removed by contractor.	
IDDE00488		
Dumped tree	02/07/2019 - Received notification via online form stating that a Christmas tree had been dumped at the intersection of University Dr/Ziontown Rd.  02/08/19 - Forwarded to the Road Department for removal from right-of-way.	Illicit discharge eliminated
IDDE00489		
Vehicle washing on drop inlet	02/08/2019 - Received notification from DEQ that vehicle washing had just occurred at their building, which is shared with other businesses. The washing had stopped soon after notification.  02/14/2019 - Visited site upon receipt of another notification of vehicle washing. The washing had stopped before arrival to the site, but evidence of soapy water entering the drop inlet was present. Sent letter on 02/15/2019 to current property management, operators, and building owners regarding vehicles in question being washed regularly. Requested a follow-up call to discuss the washing issue.  02/19/2019 - Received a call from the tenants performing the regular washing. They were unaware that this practice is prohibited, and they agreed to stop immediately.	Illicit discharge eliminated
IDDE00490		
Biohazard bag in stream	02/13/2019 - Received notification from DPW staff of a biohazard bag located in the stream at a County park.  02/13/2019 - Notified and met onsite with DEQ staff, as the bag was located in state waters. DEQ	Illicit discharge eliminated

## HENRICO COUNTY MS4 PROGRAM PLAN

### PART I.B.2.e

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	confirmed that the bag was removed and placed with other medical waste for disposal.	
IDDE00491		
Rinsing tank near inlet	<p>02/15/2019 - Received notification from DEQ regarding a construction company using a fire hydrant to wash heavy equipment and dump out a 275 gallon tank in a grocery store parking lot's private storm sewer system on 02/14/19.</p> <p>02/15/2019 - Met DEQ onsite to inspect the private storm sewer system. No evidence of wash water or chemicals found in the private system or leaving the system. Documentation from the complainant indicates the company moved offsite to a nearby street to access another fire hydrant to continue washing. DPU has been made aware of the fire hydrant access and will send a letter to the company to notify them that they cannot use a fire hydrant without a construction meter and a utilities account.</p> <p>02/19/2019 - Sent letter to the company to make them aware that this practice is prohibited.</p>	Illicit discharge eliminated
IDDE00492		
Leaking truck	<p>02/22/2019 - Received a phone call from a resident stating that an oil sheen was seen along Buffapple Dr and neighboring streets.</p> <p>02/22/2019 - Made notifications per SOP. Placed booms at 5 outfalls to creek, one inlet, and one section of curb and removed free product from roadway, per discussion with DEQ. Contacted possible responsible party to notify them that their truck needs repair, and they agreed to look into it. Booms will be removed early next week after rainfall.</p>	Illicit discharge eliminated
IDDE00493		

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Drainage	<p>02/23/2019 - Received notification from online spill report stating that the drainage system in the area needs to be cleared of sediment, leaves, and debris, as it is causing flooding in the area.</p> <p>02/25/2019 - Called homeowner to get the address and sent drainage concerns to West End Road Department.</p>	Illicit discharge eliminated
IDDE00494		
Dumped mattress & litter	<p>02/18/2019 - Received notification via online form of mattress and litter dumped in the right-of-way.</p> <p>02/19/2019 - Forwarded to the East End Road Maintenance division for removal.</p> <p>02/25/2019 - Same nearby homeowner reported a large chair had been dumped at the same location. Sent to the East End Road Maintenance division for removal.</p>	Illicit discharge eliminated
IDDE00495		
Pipe to BMP	<p>03/08/2019 - Received notification from DPW staff stating that there is a pipe allowing water to flow to an onsite BMP.</p> <p>03/12/2019 - Several attempts were made to contact the company via phone and voicemail was not returned.</p> <p>03/15/2019 - Visited the facility and met with onsite facilities manager. The pipe is discharging ice melt from the ice manufacturing process.</p>	Illicit discharge eliminated
IDDE00496		
Motor oil on inlet	<p>03/13/2019 - Received notification from DPW staff stating there were waste motor oil containers on top of a storm drain and had leaked into the inlet.</p> <p>03/13/2019 - Contacted DEQ for spill response, as no County MS4 structures were impacted.</p>	Illicit discharge eliminated

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IDDE00497		
Power washing parking lot with soap	<p>03/22/2019 - Received notification from DEQ stating that a report of power washing with Dawn liquid soap of the parking lot located at the Shoppes at Crossridge had been sent to them.</p> <p>03/22/2019 - Power washing activity using soap in parking lot caused a soapy discharge to reach BMP ponds. BMP ponds drain to Henrico County MS-4 and ultimately an unnamed intermittent creek which runs parallel to Warren Road. No adverse effects were noted in the BMP ponds, MS-4, or in the creek. Called property manager and left a message. Letter sent to property management company on 03/26/19 informing them of wash water issue. Called number on power washing advertisement sign in parking lot and there was a message stating they "were unable to complete my call at this time."</p>	Illicit discharge eliminated
IDDE00498		
Firewood in roadway	<p>03/23/2019 - Received notification via online spill report regarding firewood stored in the public right-of-way.</p> <p>03/25/2019 - Road Maintenance provided information on the property indicating that this has been an ongoing issue with the homeowner. DPW reached out to Police, who will be sending a Community Officer to discuss storage in the right-of-way. Road Maintenance will remove the material if the homeowner does not comply.</p>	Illicit discharge eliminated
IDDE00499		
Dumped household trash	<p>03/27/2019 - Received phone call from homeowner stating that household trash had been dropped off of the roadway at the end of a nearby cul-de-sac that falls within the boundaries of Echo Lake Park.</p> <p>03/27/2019 - Contacted Environmental Crimes and</p>	Illicit discharge eliminated

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	Police regarding the dumping, as identifying information was contained in the trash. Police had received record of this prior, and they are handling the matter through their process. Recreation & Parks cleaned the trash.	
IDDE00500		
Dumped alkaline material	<p>04/01/2019 - Received call from the Road Department stating that a work order had been made to look at and confirm a possible oil dumping in the roadway.</p> <p>04/01/2019 - First Call Environmental was called to address the material. They pH tested the free product in the curb with a result of a pH 13, and they also tested the stained roadway for a pH between 8-9. First Call removed the free product in the curb and driveway apron and notified the homeowner that the County would be out to inspect the area.</p> <p>04/01/2019 - The nearby homeowner who rinsed the material into the roadway had spoken with Police to state that he wanted to handle cleanup, and Police agreed that this would be suitable. The homeowner notified First Call of this interaction, and we let him know that the proposed method would not be acceptable.</p> <p>04/03/2019 - Roadway was checked and appeared clear.</p>	Illicit discharge eliminated
IDDE00501		
Grease in inlet	<p>04/04/2019 - Received notification from DPW staff stating that there was a possible illicit discharge involving grease.</p> <p>04/04/2019 - Onsite inspection indicated grease issue coming from dumpster area to the storm drain, and the storm drain was impacted by grease. An employee who was outside stated that the trash</p>	Illicit discharge eliminated

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	<p>truck hit the grease bin with the dumpster, which led to the grease spill. A letter was sent to follow-up with management on proper cleanup procedures.</p> <p>05/02/2019 - Re-inspected the site to determine compliance. The dumpster area and affected storm drain were both clean.</p>	
<b>IDDE00502</b>		
Dumped seats	<p>04/09/2019 - Received notification via online spill form stating that vehicle seats had been dumped behind a homeowner's property in the woods.</p> <p>04/09/2019 - Spoke with homeowner and forwarded the complaint to Community Maintenance to handle as a private property matter.</p>	Illicit discharge eliminated
<b>IDDE00503</b>		
Hydraulic spill	<p>04/11/2019 - Received notification from the Road Department regarding a spill on a County-owned roadway.</p> <p>04/11/2019 - County staff went to the spill, and Fire had already closed St Claire, the impacted roadway. The hydraulic spill originated in a gas station parking lot and had both flowed and been tracked into the County roadway. The road was closed at its intersection with the State road, and First Call Environmental was called to address the material in the road. The towing company responsible for the truck that had spilled the hydraulic oil used their own spill materials and resources to address the spill on private property. No storm sewer structures were impacted.</p>	Illicit discharge eliminated
<b>IDDE00504</b>		
Dumped sofa	<p>04/14/2019 - Received notification via online spill form that a sofa had been dumped at the Savage's Station historical marker area on Meadow Rd.</p> <p>04/15/2019 - Sent the notification to the East End</p>	Illicit discharge eliminated

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	Road Department for a work order to remove the sofa.	
IDDE00505		
Iron bacteria	<p>04/15/2019 - The Road Department sent information about a drainage complaint in which the homeowner mentioned water flowing onto the property looked to be artificially blue with orange spots.</p> <p>04/15/2019 - Met homeowner onsite and discussed drainage issues, mosquitoes, and the potential contaminated water. The area of concern was determined to be iron-oxidizing bacteria, and the area was checked with a spill pad to ensure that the material was not petroleum-based.</p>	Illicit discharge eliminated
IDDE00506		
Private drainage	<p>04/16/2019 - DPW staff forwarded a concern regarding recurring water on a private road. The water has been intermittent over the years and has been noted to smell like sewage.</p> <p>04/16/2019 - Investigated the site and old plans. No County infrastructure is impacted, and the water appears to be coming from both groundwater and the uphill power easement. DPU confirmed that the sewer is fully functional with no signs of overflow.</p>	Illicit discharge eliminated
IDDE00507		
Residual grease in ditchline	<p>04/16/2019 - DPW staff noticed a sheen on water in a ditchline in front of a homeowner's property.</p> <p>04/16/2019 - The sheen appeared to be grease residual and could not be recovered by using oil, universal, or hazmat spill materials.</p>	Illicit discharge eliminated
IDDE00508		
Gas container in right-of-way	<p>04/17/2019 - Received notification via online spill form of a gasoline container in the right-of-way.</p> <p>04/17/2019 - The container was documented and</p>	Illicit discharge eliminated

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	sent to the West End Road Department for removal.	
<b>IDDE00509</b>		
Dumped vegetation	<p>04/25/2019 - Received notification via online form regarding a homeowner who is dumping old pumpkins, logs, and other trash in the wooded common area.</p> <p>04/26/2019 - Went to the site to determine location of the dumping but could not see anything from the roadway. A letter will be sent to the HOA in charge of the common area to notify them that this activity is occurring.</p> <p>05/09/2019 - Discussed the issue with someone from the HOA, and he plans to have the area verified and will address the issue with the homeowner.</p>	Illicit discharge eliminated
<b>IDDE00510</b>		
Dumped vegetation	<p>04/26/2019 - Received notification via online form stating that a recently purchased parcel of land now has several truckloads of tree limbs, stumps, and other yard waste/debris dumped along the front and side of the property on the roadway and roadside ditch.</p> <p>04/26/2019 - Forwarded to Road Maintenance East for removal of debris from the ditches and right-of-way.</p>	Illicit discharge eliminated
<b>IDDE00511</b>		
Mud tracking	<p>04/26/2019 - Road Maintenance forwarded a concern regarding tracked mud onto Beulah Rd.</p> <p>04/26/2019 - Contacted environmental inspector in the area to address as an erosion &amp; sediment control concern. Roadway will be cleaned by the operator.</p>	Illicit discharge eliminated
<b>IDDE00512</b>		
Concrete	04/26/2019 - Environmental Inspector sent a	Illicit

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washout overflow	<p>concern about a concrete washout that had overflowed into the gutter and into a curb inlet.</p> <p>04/26/2019 - The environmental inspector addressed this with the contractor as a SWPPP violation and required the concrete washout to be repaired/cleaned and inlet protection for upcoming rain.</p>	discharge eliminated
IDDE00513		
Heating oil spill	<p>05/06/2019 - Received a citizen complaint regarding cleanup methods for a heating oil spill on 05/05/2019.</p> <p>05/06/2019 - Heating oil had been dumped into a ditch by a heating oil company. Fire Hazmat crews and DEQ responded to the dumping, and Fire called the spill cleanup contractor to address the spill. A nearby homeowner stated that the booms had not been staked, so the rain moved the booms and rendered them ineffective. The cleanup contractor will be notified of this incident to ensure they take appropriate measures in the future.</p> <p>05/09/2019 - Gathered information from the cleanup contractor, Fire, and DEQ to relay to the concerned citizen. The material was removed from the creek using a vac truck and the impacted soil in the ditch was removed and replaced. All parties agreed that appropriate measures were used onsite to mitigate risk, and no further action is required by the County. The cleanup contractor will be conducting ongoing boom maintenance to ensure all product is captured.</p> <p>06/12/2019 - The cleanup contractor notified us that the ongoing boom maintenance for residual product was no longer required, as no product was observed on the absorbent booms. They are finalizing the invoice that will be sent to DPW and,</p>	Illicit discharge eliminated

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	ultimately, the Fire Marshal's office for them to settle with the responsible party. DPW went onsite on 06/13/2019 to ensure that all work was completed and sent information and photos to DEQ for their records.	
IDDE00514		
Grease dumping	<p>05/14/2019 - Received notification via online spill report of grease dumping on an embankment behind a restaurant.</p> <p>05/14/2019 - Noted the grease on the embankment behind the restaurant. No storm structures have been impacted. A letter will be sent to notify the restaurant that dumping grease into a grassy area is an improper disposal method.</p> <p>07/10/2019 - Visited the restaurant to ask for follow-up on the grease dumping. They stated that they had immediately stopped dumping the grease upon receipt of the letter.</p>	Illicit discharge eliminated
IDDE00515		
Leaked transmission fluid	<p>05/16/2019 - Car leaked transmission fluid from corner of Nine Mile Rd and Hanover Rd, then onto Hanover Rd and then stopped in Citgo parking lot (17 Hanover Rd).</p> <p>05/16/2019 - Road Dept called in spill. Car leaked transmission fluid (&lt; 5 gallons) from corner of Nine Mile Rd and Hanover Rd, then onto Hanover Rd and then stopped in Citgo parking lot (17 Hanover Rd). Road Department called First Call for spill response. Proper spill notifications were made per Spill SOP. Road Department will complete and send spill notification form to Environmental Manager. Spill was cleaned from roadway with sorbent and containerized. Pads and sorbent used on spill at leaking vehicle in parking lot. These materials were also containerized for disposal by First Call. Car leak was stopped. Fresh sorbent</p>	Illicit discharge eliminated

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	pads left with store owner in case any other fluid leaks from vehicle when vehicle is moved.	
<b>IDDE00516</b>		
Dumped household items	<p>05/15/2019 - Received online spill report describing a neighbor dumping miscellaneous household items in their backyard.</p> <p>05/15/2019 - Complaint forwarded to Community Maintenance to address as a private property issue.</p>	Illicit discharge eliminated
<b>IDDE00517</b>		
Private sewer overflow	<p>05/20/2019 - Received notification from DPU of a private sewer overflow impacting a creek behind an apartment complex.</p> <p>05/20/2019 - Field verified the overflow that ran down the curb into a private storm system, eventually making its way to the creek. Contacted DEQ to meet onsite and they spoke with the apartment manager to have them address the overflow immediately and vac out all sewage that was pooled at the outfall to the creek.</p>	Illicit discharge eliminated
<b>IDDE00518</b>		
Dumped couch	<p>05/23/2019 - Received notification via online spill report form stating that a couch had been dumped in the right-of-way.</p> <p>05/23/2019 - Sent email to East End Road Dept for a work order to remove the couch from the right-of-way.</p>	Illicit discharge eliminated
<b>IDDE00519</b>		
Dumped oil	<p>05/29/2019 - Received a notification from the East End Road Department stating that a homeowner called to notify them of dumped oil in the curb.</p> <p>05/29/2019 - Went to the location and saw evidence of dumped oil in the grass that made its way off of the curb into the gutter pan. No storm drains impacted, and all free product was removed using</p>	Illicit discharge eliminated

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	<p>oil pads and oil dry. All impacted vegetation in the curb was removed, as well. A neighbor came out to state that he has seen this in the past in the exact same area. There is no evidence pointing to a responsible party. He said he would notify me if he sees this again, and the site will be checked again to see if the issue persists.</p> <p>05/31/2019 - Went back to the site after a rain event to see if there was any evidence of the issue persisting. The staining was still present, but there was no indication of additional oil on the ground.</p>	
IDDE00520		
Water flow from sump	<p>05/22/2019 - Received notification via online reporting form stating that there is a persistent flow of water running through the ditch on the side of homeowner's house.</p> <p>05/22/2019 - Investigated the flow of water and traced it to a house further up the street. A corrugated pipe with a moderate flow was draining to the ditch that ultimately flows to the ditch of the homeowner who made the notification. The chlorine test was negative. Upon further research, it appears the house with the corrugated pipe had a sump pump installed to address the underground spring. The homeowner who complained was notified that this is an allowable discharge, and that if maintenance work/cleaning is required for the ditch or if he is requesting to pipe in the ditch, he would need to contact the West End Road Department.</p>	Illicit discharge eliminated
IDDE00521		
Dumping in alleyway	<p>05/31/2019 - Received online spill notification stating that the alleyway behind a homeowner's property is full of leaves, household materials, road signs, etc. and that the homeowner would like for the county to clean it.</p> <p>05/31/2019 - Went to address to determine the</p>	Illicit discharge eliminated

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	scope of the issue. The alley is wooded on both sides of her property, and no evidence of the dumped materials could be seen from the roadway. Left a voicemail with the homeowner stating that the Road Department could look into this matter for her and that she could contact them with any questions.	
IDDE00522		
Pesticide use	<p>06/02/2019 - DPW staff forwarded a complaint regarding pesticide use in the ditchline.</p> <p>06/03/2019 - Field verified dead vegetation along the edge of the ditchline. Contacted the Extension office and was told VDACS would be able to provide information on appropriate application of pesticides.</p> <p>06/04/2019 - Contacted the homeowner who notified us of the pesticide use and referred him to VDACS, as they would be able to determine if the pesticide was used appropriately.</p>	Illicit discharge eliminated
IDDE00523		
Overflowing dumpster	<p>06/03/2019 - Received notification from DEQ regarding overflowing trash at an apartment complex.</p> <p>06/03/2019 - Verified and documented the overflowing trash roll-off dumpster and gated trash area. Trash was piled to the side of the roadway near the roll-off dumpster, but it has not made its way to the nearby stream. Contacted Community Maintenance to confirm this is an issue they would handle--the inspector will receive the report and address the private property matter.</p>	Illicit discharge eliminated
IDDE00524		
Dark water	<p>06/10/2019 - DPW staff stated that there is black, cloudy standing water on a construction site.</p> <p>06/10/2019 - Onsite inspection conducted using</p>	Illicit discharge eliminated

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	<p>various spill materials (oil, universal, and hazmat) did not indicate any contamination of the standing water, as no material was recovered. The partially submerged trench box or organic matter could be the source. The water did not reach the MS4 or surface waters.</p>	
<b>IDDE00525</b>		
<p>Dumped rocks</p>	<p>06/12/2019 - Received a phone call stating that someone had dumped rocks in a drainage ditch on a county-maintained road in Battlefield Park.</p> <p>06/12/2019 - Contacted the East End Road Department to determine a possible location based on the landmarks given as a location description, and they will address the issue.</p>	<p>Illicit discharge eliminated</p>
<b>IDDE00526</b>		
<p>Hydraulic oil spill</p>	<p>06/13/2019 - Received a call from DPW staff stating that hydraulic was spilled in puddles with oil dry throughout a neighborhood.</p> <p>06/13/2019 - The material was hydraulic oil with staining around it throughout the neighborhood. Booms were placed at the outfalls to the creek to capture any material carried through the impending rain. Will check the streets the next day to see if additional time is required for the booms in the creek.</p> <p>06/13/2019 - The company suspected to be responsible for the trash truck hydraulic leak returned my phone call to state that the leak happened on Tuesday and they used oil dry to remove free product. I let them know that there was still some hydraulic on the ground and that booms were placed at the outfalls to ensure any additional product is captured in runoff. No remaining oil dry was observed. The truck was towed from the neighborhood and will be serviced before use.</p>	<p>Illicit discharge eliminated</p>

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	06/20/2019 - Oil-stained booms were removed after a rainstorm the night before.	
IDDE00527		
Water flow in inlet	<p>06/13/2019 - DPW staff informed us of high flow in an inlet with several cave-ins.</p> <p>06/13/2019 - The inlet high flow appeared to be the result of recent heavy rains. The cave-ins were forwarded to the West End Road Department, and the inlet will be inspected again in dry weather conditions.</p>	Illicit discharge eliminated
IDDE00528		
Leaking used oil drum	<p>06/13/2019 - A voicemail was forwarded from DPW staff requesting a call back for a potential drum leak.</p> <p>06/14/2019 - Returned the phone call to get more details. The landlord of a property is complaining that the tenants moved out and left a drum of used oil that could possibly be leaking. The backyard drains to a private system that eventually hits the County MS4 on the next street. This is a private property matter between the landlord, her property manager, and former tenants. I told her I would see if Community Maintenance has handled something similar before, but that DPW would not get involved, as there are no impacts to our infrastructure.</p> <p>06/17/2019 - Contacted Community Maintenance to ask if this is an issue they would handle. They said that because the tenants have already moved, they would go after the property owner. I let the owner know that this is a civil matter for her to pursue with her property management company and her former tenants.</p>	Illicit discharge eliminated
IDDE00529		
Low tree branches	06/14/2019 - Received a phone call from someone who is concerned about a tree that had recently	Illicit discharge

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	<p>been struck by lightning on a neighbor's yard and it or its branches are now hanging 4-6 feet over the sidewalk.</p> <p>06/14/2019 - Sent to the East End Road Department for a work order request.</p>	eliminated
IDDE00530		
Styrene blowing onto property	<p>06/17/2019 - Received email from DPW staff of a complaint investigated regarding styrene blowing from one company's property to another company's property.</p> <p>06/17/2019 - DPW staff was unsure if the MS4 is being affected. I contacted a manager to set up an onsite meeting for 06/18/2019 to document the situation and assess the site. **Update: this meeting was canceled, see next note for resolution.</p> <p>Email detailing complaint regarding styrene was forwarded to DEQ by DPW.</p> <p>DEQ called and updated DPW on status of complaint. DEQ personnel spoke to company that is the source of the airborne styrene and this company has offered to use water suppression. DEQ personnel stated they do not have the legal authority to require any action as no permit is required for the activities that this company conducts. I called a representative from the company that complained and informed him of this information. He stated that he would continue to monitor the situation to see if the water suppression worked. I recommended if it did not work to call DEQ and let them know.</p>	Illicit discharge eliminated
IDDE00531		
Construction dirt	06/19/2019 - Spill of tile dust slurry in front of 10413 Falconbridge Dr. Complaint received via online spill	Illicit discharge

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	<p>reporting form. Initially complainant thought it was latex paint.</p> <p>06/19/2019 - Spill of tile dust slurry in front of 10413 Falconbridge Dr. Complaint received via online spill reporting form. Complainant did not wish to be contacted. Initially complainant thought it was latex paint. Another neighbor spoke to the owner of 10413 Falconbridge Drive and the owner said it was tile dust. Spill extended in curblineline to the corner of 10419 Falconbridge Dr. and reached IN00000006055. The staining from the spill ended at IN00000006055. The downgradient receiving stream was not impacted. A shovel and broom were used to remove the material. A DPW employee was not able to speak to owner of 10413 Falconbridge Dr. A letter will be sent educating them on this illicit discharge. There was residual staining in the curb. EESD contacted the Roads Division and Roads agreed to put this street on their sweeper list.</p>	<p>eliminated</p>
<p>IDDE00532</p>		
<p>Grease rinsing</p>	<p>06/27/2019 - Received a complaint via email stating that a restaurant appears to be improperly disposing of their grease.</p> <p>06/27/2019 - Followed up with the person who submitted the complaint to gather more information. Based on the photo, the grease appears to be the result of rinsing greasy kitchen mats or other materials outdoors. The grease staining on the ground and the puddle around a drop inlet is draining to a private system that outfalls to a private BMP, which ultimately outfalls to state waters. I contacted the FOG program to see if this is an issue that they would handle. They said they would get with Building Inspections to meet with the restaurant to stop these practices.</p>	<p>Illicit discharge eliminated</p>
<p>IDDE00533</p>		

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<p>Dumped oil/fuel</p>	<p>06/28/2019 - Received an email from Road Maintenance stating that they have received several concerns that there is an automotive repair facility operating at the residential address. The complaints also stated wrecker equipment comes and goes, and there is gas and oil being dumped on the property.</p> <p>06/28/2019 - Contacted Community Maintenance for a history on this property, and the inspector for that area stated that he had received concerns about the wrecker in the past. He will open another case for this address. During a visual inspection of the front of the property from the roadway, two uncapped motor oil containers were noticed in the driveway, but there was no evidence of an oil on the ground in the driveway or in the front yard. The County does not have any easements around that parcel to see the back of the property. Contacted DEQ and they will look into the issue.</p>	<p>Illicit discharge eliminated</p>
<p>IDDE00534</p>		
<p>Dumped wastewater at car wash</p>	<p>07/10/2019 - Received an email from Building Inspections stating that a citizen expressed concerns regarding the dumping of wastewater in the storm drain.</p> <p>07/10/2019 - Checked the storm drain at the car wash and saw no evidence of dumping in or near the storm drain. Contacted the citizen to let him know that we will coordinate an evening investigation into the matter.</p> <p>08/14/2019 - Went onsite and spoke with employees who confirmed that they have been dumping their wastewater into the storm drain in the parking lot. I let them know that this is not allowed and that the drain reaches waterways. They agreed to use the bay drain that leads to sanitary sewer. I contacted the owner to discuss it with him, and he</p>	<p>Illicit discharge eliminated</p>

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	agreed to re-train his staff.	
IDDE00535		
Broken sewer line at a school	<p>07/10/2019 - Received an email from DPW staff asking to help identify a white liquid on a construction site.</p> <p>07/10/2019 - Went onsite and noticed the material was opaque and there appeared to be some strands of sewer fungus, although no sewer odor was noted. The inspector was unavailable, so a follow-up inspection will occur on 07/11/2019.</p> <p>07/11/2019 - Met onsite with Schools staff and the DPW inspector. Spoke with the contractor, who stated that the plans showed the Schools-owned sewer line to be deeper than they actually are, so his work caused the break in the pipe. Schools is working on contacting the person in their department who is responsible for the site. Upon further discussion, the maintenance superintendent stated that he had washed his paintbrushes out in the sink the day before. A dye test was conducted from the sinks and from a manhole in the line. The dye did discharge from the break, indicating that no paint dumping occurred. The material in the channel is a mixture of paint and sewage. DPW recommended vacuuming out the sewage/paint mixture.</p> <p>07/25/2019 - Schools stated that the sewer line had been repaired on 07/11/2019.</p>	Illicit discharge eliminated
IDDE00536		
Dumped seafood	<p>07/12/2019 - Received a phone call from a citizen who stated that she had noticed a seafood market employee dumping the contents of a bucket into the storm drain.</p> <p>07/12/2019 - Inspected the storm drain and noted staining on and in front of the curb inlet (IN019687),</p>	Illicit discharge eliminated

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	as well as a rotten seafood smell inside of the drain. I spoke with the cashier and let her know that dumping this material in the storm system is a violation of our stormwater permit and that this must stop immediately. She took my photos to the manager and they both stated that this will not happen again.	
IDDE00537		
Grass clippings in ditch	<p>07/17/2019 - Resident complained of chronic dumping of pet waste, landscape debris, and trash in the storm sewer that is washing out into Barrington West BMP wet pond and other outfalls.</p> <p>07/17/2019 - Resident complained of chronic dumping of pet waste, landscape debris, and trash in the storm sewer that is washing out into Barrington West BMP wet pond and other outfalls. The following neighborhoods were sent an educational mailing regarding proper disposal of pet waste, landscape debris, and trash: Barrington, Barrington West, Barrington Valley, Chaplewood, Summerwood and Wythe Trace. 395 letters were mailed.</p>	Illicit discharge eliminated
IDDE00538		
Iron bacteria	<p>07/16/2019 - DPW staff sent an email for a possible IDDE issue with what appeared to be a petroleum sheen in an inlet.</p> <p>07/22/2019 - This was suspected to be iron-oxidizing bacteria based on the photo sent with the email. Field verification with an oil pad confirmed this.</p>	Illicit discharge eliminated
IDDE00539		
Spilled tack coat	<p>07/22/2019 - DPW staff called about a brown spill on the road and in a storm drain.</p> <p>07/22/2019 - The spill appeared to be spilled tack</p>	Illicit discharge eliminated

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	<p>coat from a paving operation. All notifications were made to County personnel, as the material entered the storm drain and drained to the BMP. It did not appear to have made its way to the stream. The pooled material in the BMP appeared to contain product and sheen, so pads were used to absorb as much as possible. Although the material on the roadway appeared to be dry, booms were secured in the BMP and at the outfall to the creek due to impending rain. Will check on the booms during rainstorm.</p> <p>07/23/2019 - Inspected the booms during the rain, and the booms appeared to be absorbing the material appropriately.</p> <p>07/25/2019 - Booms were removed. All water in the BMP and creek appeared to be clear.</p>	
<b>IDDE00540</b>		
Flowing water in manhole	<p>07/16/2019 - DPW staff stated that a manhole had flowing water in dry weather conditions.</p> <p>07/22/2019 - The manhole did appear to have flowing water. Could not chlorine test because the dipper would not reach the bottom of the manhole. Forwarded to DPU for concerns about a water meter issue at property next door.</p>	Illicit discharge eliminated
<b>IDDE00541</b>		
Oil in inlet and irrigation issue	<p>07/30/2019 - DPU forwarded information on an inlet with motor oil in it.</p> <p>07/30/2019 - Oil was evident in the private drain (IN00000003039), but it did not reach the next downgradient inlet. A boom was placed at the outfall to the private BMP in case of rain. The property management company will be notified about the issue at their property. The neighbors mentioned a possible leak behind the townhomes, and upon investigation, it was determined that old</p>	Illicit discharge eliminated

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	<p>irrigation heads were stuck in the "on" position. The irrigation was turned off, and the management company will be made aware that they need to have this fixed.</p> <p>08/02/2019 - Sent a letter to make the property managers aware of the dumping situation that is occurring in the townhome community. Required a follow-up to determine appropriate cleanup actions.</p> <p>08/05/2019 - The property management company called to say that this is not one of their properties. They were told to disregard the letter, and that our system must have had them listed mistakenly. More research was conducted into the management company, and I contacted another possible company. They said that they do manage that area, and I told them about the situation and that they can contact me when they receive their letter.</p> <p>08/21/2019 - Followed up with the property management company for that area to see what actions they have taken. The property manager said that she forwarded the letter to the board president, and she said they plan to send out an educational email to everyone in the area where the dumping occurs. I told her that I would go back to the drain to make sure that no recent dumping has occurred that requires them to have the material removed.</p>	
IDDE00542		
Trash blowing in streets	<p>07/30/2019 - Received notification via online spill report that neighbors along this street are overfilling their trash cans and trash is blowing around the area.</p> <p>07/31/2019 - Investigated the area and did not see any trash.</p>	Illicit discharge eliminated
IDDE00543		
Dumped	08/01/2019 - Received notification via online spill	Illicit

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mattress on private roads	<p>reporting that a mattress and box springs had been dumped along the roadway.</p> <p>08/01/2019 - Both roads listed in the complaint are privately maintained roads. The complaint was forwarded to Community Maintenance to see if this is something they would be able to address with the private owners.</p>	discharge eliminated
IDDE00544		
Sheen in inlet	<p>07/29/2019 - DPW staff sent a possible IDDE concern regarding a sheen in an inlet.</p> <p>08/02/2019 - Inspected the site and did not see any evidence of material around or in the inlet.</p>	Illicit discharge eliminated
IDDE00545		
Potential water main break	<p>08/02/2019 - DPW staff forwarded a potential water main break concern.</p> <p>08/02/2019 - DPW staff forwarded a potential water main break concern.</p> <p>08/07/2019 - Henrico DPU confirmed this issue is with Richmond's utility. I contacted their DPU to make them aware of the situation, and they made a work order to have someone take a look at it.</p>	Illicit discharge eliminated
IDDE00546		
Sewage discharge	<p>08/02/2019 - DPW staff called regarding a sewage illicit discharge from a construction site.</p> <p>08/02/2019 - The contractor was pumping groundwater while tying a new sewer line into an existing manhole, and the measures in place failed, resulting in sewage backflowing into the trench. The silt bag was also not properly attached to the hose, which allowed pumped fluids to bypass the bag. Spoke with the DPU inspector and DEQ to coordinate appropriate cleanup measures. DPU submitted their Unauthorized Discharge and</p>	Illicit discharge eliminated

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	<p>Overflow Report to DEQ, and they, with DEQ's guidance, required the contractor to contact a cleanup contractor to vac out as much sewage as possible from the affected BMPs and storm sewer. This work was completed on the evening of 08/02/2019.</p> <p>08/05/2019 - Followed up with the contractor, DPU, and First Call Environmental—under guidance from DEQ, they used a vac truck to clean any part of the MS4 that they could and limed the affected ditches. No work was performed on the BMPs, as this would have created more of a disturbance than what they could clean. These cleanup methods satisfy our requirements, and First Call Environmental will prepare a report detailing this work to send to the contractor.</p>	
IDDE00547		
Pipe in inlet	<p>08/05/2019 - DPW staff forwarded a concern about a running pipe in an inlet.</p> <p>08/05/2019 - Inspected the site with Roads staff and found that the pipe is part of the water line to maintain appropriate chlorine levels for drinking water.</p>	Illicit discharge eliminated
IDDE00548		
Paint in inlet	<p>08/12/2019 - DPW staff sent photos of what appeared to be paint dumped in an inlet at a construction site for a middle school.</p> <p>08/12/2019 - Relayed the information to the Capital Projects Manager for Schools to address with the contractor. The contractor stated that the material was concrete grinding sediment, and that he had the manhole cleaned &amp; vacuumed. Confirmed that the material did not go any further than the one inlet and that the contractor made it clear to his crew that this is a prohibited activity.</p>	Illicit discharge eliminated
IDDE00549		

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<p>Flow in inlet</p>	<p>08/12/2019 - DPW staff sent a report of an inlet with flowing water in dry conditions.</p> <p>08/13/2019 - Inspected two of the three inlets in line with the inlet with flow and a positive chlorine test. The middle inlet appears to be located in a wooded area and not near any water infrastructure. Will reinspect with DPW staff.</p> <p>08/14/2019 - Chlorine tested the flow in the inlet and had another positive. Inspected the next inlet in line and it was mostly inaccessible, but there was a flow. Forwarding to DPU to determine if a leak is causing the issue.</p>	<p>Illicit discharge eliminated</p>
<p>IDDE00550</p>		
<p>Concrete dust and water flow</p>	<p>08/13/2019 - Received notification from DPW staff of an illicit discharge at a restaurant renovation.</p> <p>08/13/2019 - Met onsite with the contractor doing renovation work at the restaurant. I noted that grout had been dumped near the dumpster area, and they immediately dug out the material for disposal. They had cut out a section of the drive-thru, and this area was pooling water and concrete dust, which was flowing down the entrance, into the street, and ultimately to the storm drain (IN021733). The inlet had a very small amount of material in the pipe, and inspection of the next accessible inlet showed slight staining but no wet/recoverable material. The contractors agreed to dig the cut out drive-thru a little deeper for more capacity and to get control measures in place to prevent any flow from leaving the site. I also asked for inlet protection in the parking lot (IN021734), as concrete is piled nearby and that inlet drains directly to the impacted inlet. The street inlet did not have a boom placed for flooding concerns from potential severe weather that evening. Will inspect in the morning to ensure all measures were properly placed.</p>	<p>Illicit discharge eliminated</p>

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	08/14/2019 - All measures were in place and were functioning as intended. No material was leaving the site.	
IDDE00551		
Road paint washed in storm	08/15/2019 - DPW staff called to report paint washed away from their road striping operation.  08/15/2019 - Traffic Engineering notified me that they were striping the roadway when the heavy rains came in and washed the some paint off before it could dry. The rain washed the wet paint into the storm drains and likely into the nearby creek. Upon inspection, no impacts to the MS4 or creek were noted. Notified county staff and DEQ.	Illicit discharge eliminated
IDDE00552		
Mud tracking	08/20/2019 - Received notification via online spill report form stating that dirt & mud is being tracked from a construction site onto the roadway.  08/20/2019 - Contacted the environmental inspector for the area, who got in touch with the contractor to address the issue.	Illicit discharge eliminated
IDDE00553		
Oil dumped on private property	08/21/2019 - Received a phone call from a citizen stating that the neighbor is dumping oil onto the ground and it is making its way to her property.  08/21/2019 - Discussed the issue in detail and learned that an inspector from Community Maintenance has also been involved with this issue. There is no storm infrastructure in the nearby area, and the issue is occurring on private property. I have left a voicemail with the inspector in the area to discuss the matter further.  08/22/2019 - The Community Maintenance inspector stated that he has been working with the neighbors on various issues, and that the oil in	Illicit discharge eliminated

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	question is mostly on the concrete pad under the carport from what he has seen. The photos I received showed some staining on stone on the other side of the fence between the properties. This was forwarded to DEQ to address.	
IDDE00554		
Dumped stone material	<p>08/22/2019 - Received a complaint regarding a homeowner allowing companies to dump various materials on his property.</p> <p>08/22/2019 - The homeowner appears to allow companies to dump materials on his private property. The concern is that these companies, upon research, do industrial work and might have some product residual associated with the dumped material due to the nature of industrial operations. There is no storm infrastructure in this area. The Community Maintenance inspector for this area spoke with the homeowner and was told that the recently dumped material is stone that he plans to use. The inspector and I agreed that the potential exists for other unknown dumped materials. This was forwarded to DEQ to investigate.</p>	Illicit discharge eliminated
IDDE00555		
Herbicide leachate	<p>08/25/2019 - Received online spill notification regarding herbicide leachate draining to the creek from use in a power easement.</p> <p>08/26/2019 - Forwarded the concern to DEQ, as the easement drains to the creek.</p>	Illicit discharge eliminated
IDDE00556		
Algal bloom	<p>08/28/2019 - Received a call from a citizen stating that the wetland area nearby had a lot of discolored, strong smelling water.</p> <p>08/28/2019 - The site is located next to Shady Grove ES, but the parcel address is for a different street. Based on the various colors (blue, green,</p>	Illicit discharge eliminated

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	<p>brown) on the water and the consistency, we suspect this to be an algal bloom. DEQ was notified, and they explained the process with VDH. A Harmful Algal Bloom (HAB) report (#318) was sent to VDH, and appropriate County staff received notifications. The outfalls to the intermittent RPA that ultimately drains to the retention basin will be inspected.</p> <p>08/29/2019 - Inspected outfalls to the perennial stream and noticed flow in some areas, likely due to the rain the night before. VDH advised the HOA to place signs around the area to discourage contact with the water, and they have stated that the retention basin is private. It appears, based on emails, they consider the impacted perennial stream in the RPA to be private, as well.</p>	
IDDE00557		
Grass clippings in road	<p>08/29/2019 - Road dept. received a complaint about an apartment complex blowing grass clippings into the street.</p> <p>08/29/2019 - Spoke with the leasing office and let them know that they need to have their landscaper or staff blow the clippings back onto their property and continue to do so in the future to prevent the clippings from entering nearby storm drains.</p>	Illicit discharge eliminated
IDDE00558		
Sump pump hose	<p>08/29/2019 - DPW staff received a complaint regarding a black hose in a storm drain.</p> <p>08/29/2019 - Observed black garden hose running from the backyard to the front of the property and into the storm drain. Spoke with the homeowner to get more information, as the hose was not flowing at the time of inspection. The homeowner explained that this draining his sump pump, which is an allowable discharge.</p>	Illicit discharge eliminated

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IDDE00559		
Rock dust in roadway	<p>08/29/2019 - DPW staff received a complaint about a pile of rock dust in the street in front of a homeowner's property.</p> <p>08/29/2019 - Upon inspection, the pile was no longer in the street. The storm drain did not have any evidence of this material entering it.</p>	Illicit discharge eliminated
IDDE00560		
Dumped gravel	<p>08/30/2019 - Received voicemail stating that a driveway paving company had dumped gravel in an inlet.</p> <p>09/03/2019 - The inlet (IN018481) was inspected and there was no evidence of any dumped gravel.</p>	Illicit discharge eliminated
IDDE00561		
<i>E. coli</i> in creek	<p>09/03/2019 - DPW staff reported a positive test for <i>E. coli</i> in a creek.</p> <p>09/04/2019 - Sent information to DPU for inspection of the sanitary sewer that runs adjacent to the creek.</p>	Illicit discharge eliminated
IDDE00562		
Driveway sealant runoff	<p>09/04/2019 - Received a complaint stating that a homeowner had hired a driveway paving company to seal the driveway, but the material runs off during rain events and impacts wildlife.</p> <p>09/04/2019 - The driveway is graded to the back of the property and would not have any impacts on the MS4. There did not appear to be any runoff or strong odor associated with this driveway, and no impacts to the creek or wildlife were noted.</p>	Illicit discharge eliminated
IDDE00563		
Phosphate levels in water	09/04/2019 - Received an email from Henricopolis staff stating that their volunteer testing of basic water quality levels yielded a higher than normal	Illicit discharge eliminated

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	<p>result for phosphate (2.50 ppm).</p> <p>09/04/2019 - DPU staff will investigate a possible sewer overflow, and DPW staff will check the storm sewer in the area to ensure there are no sources of the excess phosphate in the MS4.</p> <p>09/05/2019 - DPW staff did not find any evidence of any material contributing to the test results. DPU also stated that they did not find any issues with their system.</p>	
IDDE00564		
Blue water in ditch	<p>09/12/2019 - DPW staff sent information regarding blue water in the ditch after a driveway pipe.</p> <p>09/12/2019 - The water appeared to be blue tinted with blue flowers in it. There were no other obvious sources nearby; could have been dye from artificially dyed flowers. No odor or sheen were detected, and universal spill pads were not able to recover any of the material.</p>	Illicit discharge eliminated
IDDE00565		
Iron bacteria	<p>09/19/2019 - DPW staff sent notification of a possible illicit discharge (oily sheen).</p> <p>09/19/2019 - The material was determined to be iron-oxidizing bacteria.</p>	Illicit discharge eliminated
IDDE00566		
Drywall dust flow to inlet	<p>09/24/2019 - DPW staff noticed a white, milky substance in two storm drains in proximity to a hotel being renovated.</p> <p>09/25/2019 - Inspected the County-owned inlets (IN025034 &amp; IN025030), as well as the private inlets that drain to the MS4. The reported inlets were confirmed to be holding the white material, as well as the private inlet (IN025032) leading to the MS4. Spoke with the project manager for the hotel, who</p>	Illicit discharge eliminated

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	<p>stated that it was likely one of the contractors who was responsible. We traced the material back to the loading area, and it appeared that the crews have been rinsing off the area where they cut drywall. The project manager stated that this will stop immediately, and that they will hire a company to clean the impacted storm drains.</p> <p>Actual date of correspondence is 09/25/2019 (system does not allow duplication). The project manager called to let me know that the material had been cleaned from the inlets.</p> <p>09/26/2019 - Inspected the inlets after the material had been removed. All recoverable material was gone, and there appeared to be some staining in the bottom.</p>	
IDDE00567		
Chlorinated water - heavy flow	<p>09/25/2019 - DEQ relayed a concern regarding a high flow of clear water behind a homeowner's property.</p> <p>09/26/2019 - Investigated the area and noted a heavy flow of water next to a nearby recreation center. It tested positive for chlorine and did not appear to be coming from the pool area. Spoke with DPU about the possibility of a utility issue, and they will investigate and follow up.</p>	Illicit discharge eliminated
IDDE00568		
Algal bloom	<p>09/26/2019- Received notification of a BMP with water that has potentially been harming dogs and cats.</p> <p>09/26/2019 - The BMP had a red algal bloom on the surface of the water. No odors were detected and no impacts to wildlife or the receiving channel at the time of inspection. Reported this to VDH through their Harmful Algal Bloom reporting page (Report #335).</p>	Illicit discharge eliminated

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	09/27/2019 - Contacted the homeowner who submitted the complaint to let her know that no wildlife impacts were noted and that VDH had been made aware of the issue.	
IDDE00569		
Algal bloom	<p>09/27/2019 - DPW staff forwarded a complaint received regarding a strong odor in the lake behind their property.</p> <p>09/27/2019 - The lake appeared to have cyanobacteria, as well as some white foam. A HAB report (report #336) was submitted to VDH to make them aware of the situation. DPU was notified that there could be a potential issue with their sewer line in that area, as well. No impacts to wildlife noted. The homeowner was advised to avoid contact with the water until it clears and no odors are present.</p>	Illicit discharge eliminated
IDDE00570		
Cat food in storm drain	<p>09/30/2019 - Received a voicemail forwarded from Community Maintenance stating that someone dumped pellets from a bag into two storm drains in a neighborhood.</p> <p>09/30/2019 - The homeowner stated that the person dumping this material is not part of her neighborhood. The dumped pellets were cat food that someone is likely putting out to feed feral cats. Contacted the homeowner who complained to let us know if she can get a license plate so that we can identify the responsible party.</p>	Illicit discharge eliminated
IDDE00571		
Tires in creek	<p>09/30/2019 - A voicemail was forwarded from the Road Dept. stating that tires had been dumped into the creek.</p> <p>09/30/2019 - Verified that 7 tires had been dumped in and near the creek. Forwarded to the appropriate department for removal.</p>	Illicit discharge eliminated

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IDDE00572		
Leaves in ditch	<p>10/01/2019 - A homeowner called DPW staff to inquire about wetlands and her neighbor's activities in them, as well as notifying us about a leaf issue.</p> <p>10/01/2019 - Her neighbor's ditch is considered both MS4 and WOTUS. She was referred to DEQ, and her leaf concerns were forwarded to Road Maintenance.</p>	Illicit discharge eliminated
IDDE00573		
Diesel leak on construction site	<p>10/03/2019 - Received a call from DEQ stating that they had received a complaint regarding diesel fuel leaking from construction equipment.</p> <p>10/03/2019 - Contacted DPU to have them address their contractors on their utility project. Will go inspect.</p> <p>10/03/2019 - Visited the site with the environmental inspector. The contractor had removed the material using oil dry, and we field verified that no fuel had entered the storm drain.</p>	Illicit discharge eliminated
IDDE00574		
Carpet in ditch	<p>10/04/2019 - Received notification of carpet dumped in roadway and ditch via online spill report form.</p> <p>10/04/2019 - Forwarded the complaint to the West End Road Department for a work order to address the issue. Contacted the homeowner to let him know that the Road Dept. has received his concern and I provided him with the phone number in case he had any follow-up questions for them.</p>	Illicit discharge eliminated
IDDE00575		
Chlorinated water – heavy flow	<p>10/02/2019 - DPW staff forwarded a concern regarding a strong flow of clear water that tested positive for chlorine in a storm drain.</p>	Illicit discharge eliminated

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	10/02/2019 - Forwarded the concern to DPU for investigation into their lines.	
IDDE00576		
Gravel piled in roadway	<p>10/09/2019 - Received notification via online spill report form that two large gravel piles were in the roadway from the curb to centerline.</p> <p>10/10/2019 - Visited the site and it would appear that the homeowner is having work done involving the gravel. A truck and skid steer were parked in front of the gravel, and there were several workers on the property. Left a voicemail for the person listed on the report to let them know that it looks like they've already worked through one pile of gravel and to let us know if the problem persists.</p>	Illicit discharge eliminated
IDDE00577		
Water flow	<p>10/04/2019 - DPW staff sent notification of an inlet (IN015472) with flowing water discharging into MN138623.</p> <p>10/04/2019 - Forwarded to DPU for inspection.</p> <p>10/10/2019 - Investigated in the meantime and everything was dry. Work was occurring in the parking lot, and they verified that they were not doing work on this issue. Updated DPU.</p>	Illicit discharge eliminated
IDDE00578		
Chlorinated water	<p>10/04/2019 - DPW staff sent notification of flowing water in a concrete ditch in dry weather conditions. Tested positive for chlorine.</p> <p>10/04/2019 - Forwarded to DPU for inspection.</p>	Illicit discharge eliminated
IDDE00579		
Truck drafting water	<p>10/11/2019 - Report of possible dumping at Creek crossing</p> <p>10/11/2019 - A possible dumping was reported via the on-line spill reporting form. Description:</p>	Illicit discharge eliminated

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	<p>"there was a large red truck, unmarked, with a large green hose dumping an unknown material into Deep Run right near Poplar Springs Baptist Church. I ended up turning around and taking pictures of the plate because I was so bothered by the idea of someone dumping something into the water there. I have the photos that I can share. I think the plate (Virginia with a TT on it) reads 81-476 but I am happy to share images." Complainant emailed images. It appeared a contractor was drafting water from the crossing into a small sized tank. This is an allowable activity as long as the contractor does not exceed an amount that would require a permit. This did not appear to be the case based on the size of the tank in the pictures. During inspection, the contractor was no longer there and there were no signs of any spill/dumping. Water was clean and clear, no odors noted.</p>	
IDDE00580		
Hose to inlet	<p>10/11/2019 - Small black hose extending from privacy fence to inlet, not discharging</p> <p>10/11/2019 - Small black hose extending from privacy fence to storm inlet IN24267. Discovered during MS-4 inspections. No discharge from hose at time of discovery nor during follow-up visit later that day. Will monitor to test discharge if discharge discovered.</p> <p>10/22/2019 - Pipe was no longer in inlet. No evidence of discharge. See file for picture.</p>	Illicit discharge eliminated
IDDE00581		
Logs dumped in right-of-way	<p>10/14/2019 - Received a call from a homeowner who stated that a tree company dumped large logs in the right-of-way next to her property.</p> <p>10/14/2019 - Forwarded concern to the Road Department.</p>	Illicit discharge eliminated

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IDDE00582		
Storm sewer pipe collapse	<p>10/14/2019 - Received a notification from DPW staff that a storm sewer pipe had collapsed and ruptured a sanitary pipe that the discharged to the creek.</p> <p>10/14/2019 - DPW Roads communicated that the ownership of the pipe was in question. Research is being done to determine ownership, and the paint company has shut off its water to ensure nothing is being discharged to the creek. DEQ was closed, but this information was relayed to them.</p> <p>10/15/2019 - Met with Roads staff onsite to look at the issue. Our BMP specialist conducted a BMP inspection to ensure that the BMP was functional and not the main cause of the failure. The storm pipe that had broken looked to be part of a stream that had been piped in. Historic research showed that the previous company had a railroad spur crossing over that section of stream to go to the warehouse, which indicates the pipe was likely installed to allow this movement. DEQ was updated on this information and they are visiting the site, as well. Because the pipes do not belong to the County, the State will advise the company on its repair work and facilitate any contact with the railroad company to pursue ownership determinations.</p>	Illicit discharge eliminated
IDDE00583		
Car wash area drains to creek	<p>10/10/2019 - Received a notification from Community Maintenance that a resident of a private apartment complex is concerned about a designated car wash area that drains into an inlet.</p> <p>10/14/2019 - Visited the site to determine what type of facility is there. They have a pergola with a car wash hose attached, as well as a sign designating the area as a car wash area. The inlet is full of leaves and debris, and it would appear that the</p>	Illicit discharge eliminated

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	water is overtopping the inlet and eroding the back side of it. This private storm drain drains to the creek behind the property. Spoke with DEQ, and I will send them the photos to determine how they want to address this issue.	
IDDE00584		
Mud in roadway	<p>10/21/2019 - DPW staff called regarding mud in the roadway.</p> <p>10/21/2019 - A sinkhole from a broken water line was undergoing repairs and dump trucks hauling away material were leaking mud onto the roadway. Road Maintenance was contacted to make them aware that DPU trucks were causing the issue, and they agreed that the material needed to be removed by the end of the day. DPU was contacted on their behalf, and they agreed to use the sweeping contractor to address the mud/dirt concerns. Several roadways were involved and are listed in the email saved in the folder for this IDDE.</p>	Illicit discharge eliminated
IDDE00585		
Sediment-laden water in culvert	<p>10/21/2019 - Road Dept staff sent notification of muddy water in the culvert that leads to a creek where repair work was being performed.</p> <p>10/21/2019 - Met the environmental inspector for that area onsite and determined that nearby DPU work was contributing to the issue, but not strong enough flow to match what was coming into the culvert. The inspector mentioned a project upstream may be a factor, so upon investigation, he determined this to be the case. They will pump some water from their sediment trap through a filter bag to allow for more capacity for upcoming rains. DPU was notified that their work was not the main source, but there was some sediment in the gutter that was contributing to the issue. They had their contractor clean the gutter to ensure no sediment was leaving their work area.</p>	Illicit discharge eliminated

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IDDE00586		
Non-chlorinated pool water discharge	<p>10/21/2019 - Received a phone call stating that a blue, corrugated pipe was running from behind a property and flowing into a ditch.</p> <p>10/21/2019 - The blue pipe was flowing into the ditch and appeared to run from behind a fence where a pool was observed. The water flowing from the pipe was chlorine tested and was negative. The homeowner was discharging dechlorinated pool water. I left a return voicemail letting the nearby homeowner know that this is an allowable discharge per our stormwater permit.</p>	Illicit discharge eliminated
IDDE00587		
Containerized motor oil in curblines	<p>10/18/2019 - Bucket of used motor oil and pan of used motor oil left in curblines</p> <p>10/18/2019 - Complaint came in through Community Maintenance. Spoke to neighbors and they said the pan and bucket appeared there randomly and that none of them left it there. First Call disposed of the liquids. They had not spilled out of their containers. There were no impacts to the MS-4.</p>	Illicit discharge eliminated
IDDE00588		
Duckweed	<p>10/22/2019 - A citizen called to express concerns regarding potential algae in the pond behind her property.</p> <p>10/22/2019 - Inspected the pond and determined the material to be duckweed. The homeowner came out to discuss this and she was made aware that it is not algae, but that she should call back if it changes in appearance or develops an odor.</p>	Illicit discharge eliminated
IDDE00589		
Grease dumping	<p>10/22/2019 - A business owner called to state that the restaurant next door was dumping grease into the sanitary sewer and had caused the system to</p>	Illicit discharge eliminated

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	<p>clog.</p> <p>10/22/2019 - Called DPU staff to respond on my way to the site. The grease trap had grease around it, the curblineline had piles of grease, and the curb inlet was full of grease. DPU contacted Building Inspections to have someone come out to evaluate from their perspective. DEQ was notified of the issue in the private system to state MS4.</p>	
IDDE00590		
Paint spill	<p>10/22/2019 - Received notification from DPW staff that paint had been dumped near a ditch but was dry when noticed.</p> <p>10/23/2019 - Met onsite with the people renovating the house next to the ditch. They stated that paint had accidentally been spilled, and they dug out the material to remediate. They understood that paint should be kept away from the ditch.</p>	Illicit discharge eliminated
IDDE00591		
Private sewer overflow	<p>10/24/2019 - DPW staff sent notification of a private sanitary sewer manhole overflowing into a private storm drain in a parking lot in front of a restaurant.</p> <p>10/24/2019 - Spoke with DPU and learned that they had been out to investigate earlier and determined that the blockage was in the private lateral close to the building with the restaurant. Met with the contractor the landlord sent and he was able to jet the blockage. He stated that they will bring out more equipment to vac out the line. Building inspections sent two inspectors, and they told the manager about how their practices could improve to prevent this in the future. DPU Monitoring &amp; Compliance will be scheduling this restaurant for inspection to check the levels of grease entering their system. This did not appear to reach the county storm drain where the private system connects.</p>	Illicit discharge eliminated
IDDE00592		

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Broken glass in roadway	<p>10/23/2019 - Received online spill report stating that a recycling truck had left broken glass throughout several neighborhoods.</p> <p>10/23/2019 - Contacted the responsible company to make them aware. They agreed to have their contractor address the issue.</p>	Illicit discharge eliminated
IDDE00593		
Mattress in roadway	<p>10/25/2019 - A homeowner left a voicemail to express concern over a mattress &amp; box spring in the roadway.</p> <p>10/25/2019 - Forwarded to the East End Road Department.</p>	Illicit discharge eliminated
IDDE00594		
Heavy flow in creek	<p>10/21/2019 - DEQ forwarded information regarding an unusual flow in Deep Run Creek and wanted to verify that nearby activities had not caused it.</p> <p>10/21/2019 - Contacted DPU to determine if any nearby flushing had occurred.</p> <p>10/25/2019 - DPU was not aware of any activities that could have caused the sudden increase in water in the creek. They requested an onsite meeting with DPW and DEQ to review the findings.</p> <p>10/29/2019 - Met onsite with DEQ, DPU, and the environmental inspector for the area. She made us aware of a nearby dredging operation that occurred at the time the increase in water flow was noted. The operation was permitted and inspected and was likely the source of the water increase.</p>	Illicit discharge eliminated
IDDE00595		
Broken sewer line	<p>10/29/2019 - A homeowner called the Road Dept to notify them of a broken sewer line that was flowing to the creek.</p>	Illicit discharge eliminated

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	10/29/2019 - DPU was notified and they went out to investigate the issue. They updated DPW on their work to perform bypass pumping until the repair can be made, and they installed a piping plug to prevent the overflow in the meantime.	
IDDE00596		
Paint in road	<p>10/31/2019 - Paint in Road - Road Department emailed the following: "Three Chopt Rd/John Rolfe pkwy.....Right there a Pocahontas Middle School He said it had been there and it believed to be dry but wanted to file a claim with the county he said"</p> <p>10/31/2019 - Upon inspection, paint was dried onto surface of Three Chopt Road and had not reached MS-4. Called and relayed this message back to Roads Dept and sent them pictures.</p>	Illicit discharge eliminated
IDDE00597		
Dumped furniture	<p>11/03/2019 - Received a notification via online spill report form of a dumped recliner.</p> <p>11/04/2019 - Forwarded to the East End Road Department.</p>	Illicit discharge eliminated
IDDE00598		
Bentonite spill to creek	<p>11/12/2019 - Received a call from DPW staff stating that the contractor at one of their sites had reported a bentonite spill, but the material was not reaching the creek.</p> <p>11/12/2019 - Upon inspection, the material was reaching the creek, especially with the heavy rainfall. DEQ was contacted to make them aware of the impact to state waters, and other required agencies and staff were notified of the issue. A boom was placed at the low point to the creek, and a turbidity curtain was installed for extra measure. The area with the spilled material was treated as a</p>	Illicit discharge eliminated

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	<p>concrete washout with straw bales around the perimeter, and the pit area would be dug ~2ft lower to accommodate water and prevent the material from leaving the site. The environmental inspector will be revisiting the site to ensure these measures are in place and functional.</p> <p>11/15/2019 - The environmental inspector sent notification of another bentonite overflow that resulted from an employee who left a valve open. The material entered Upham Brook. A turbidity curtain was placed, and plans to clean and prevent future issues were put into place. A stop work order was put into effect until the work is completed and approved by the inspector.</p>	
IDDE00599		
Water main leakw	<p>11/13/2019 - DPW staff reported an apparent water main leak in an adjacent wooded area.</p> <p>11/14/2019 - The ground is saturated, and flow is entering IN000000008556. Tested positive for chlorine. Forwarded to DPU.</p>	Illicit discharge eliminated
IDDE00600		
Potential water main leak	<p>11/13/2019 - DPW staff sent notification of a possible water main leak.</p> <p>11/14/2019 - Forwarded to DPU for inspection of their recent repair.</p>	Illicit discharge eliminated
IDDE00601		
Landfill leachate discharge to creek	<p>11/14/2019 - DEQ sent notification of landfill leachate leaving the site at BFI Old Dominion Landfill.</p> <p>11/14/2019 - Met with DEQ and landfill staff onsite. The incident was reported to have been an overflow of approximately 1,000 gallons of leachate from a leachate manhole that ran onto Darbytown Rd. Republic staff clarified that the issue was the result</p>	Illicit discharge eliminated

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	<p>of a pump failure between two tanks during a transfer process. The leachate entered a road trench and flowed from the outfall into a ditch that runs parallel to the creek before tying into the creek. The leachate was still flowing through and reaching the creek. Road Dept. staff were onsite to assist with flagging operations as the cleanup contractor for the landfill used a water truck to wash the leachate off the roadway into the road trench. A berm was set up in the ditch, and vac trucks were staged to remove the material that was being washed down from the roadway.</p>	
IDDE00602		
Dumped sewage	<p>11/14/2019 - Received notification via online spill report form stating that residents have been dumping pails of human waste in the sewer weekly and have been doing so for 6 months.</p> <p>11/14/2019 - Inspected the storm sewer in the area and did not note any dumped human waste. No buckets visible and no odors noted.</p>	Illicit discharge eliminated
IDDE00603		
Black water	<p>11/14/2019 - DPW staff sent notification of a waterway that appeared to be black.</p> <p>11/14/2019 - The environmental inspector was checking on his site when he noticed that the stream appeared to be black. I was at another spill with DEQ when the notification was received. DEQ and DPW met the inspector and saw that the black water ran through a large stretch of the stream. The material appeared to be evenly distributed throughout the water column and there were wet marks along the banks indicating that a heavy flow had come through and receded. No consistent odors were noted. We walked the length of the stream until we reached the City of Richmond. The water still appeared to be black/inky, but no sources were noted within the county. DEQ will be working</p>	Illicit discharge eliminated

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	with the MS4 contact in the city to determine a source, if possible.	
IDDE00604		
Soy product discharge	<p>11/21/2019 - DEQ had previously sent notification of a spill that had occurred at one of their permitted facilities. The quality manager had later changed information on the registration statement to reflect that they do not connect to a MS4.</p> <p>11/21/2019 - DEQ was sent the GIS mapping to show that the company does connect to the County's MS4. To confirm, I pulled old plans on the facility, and it appeared that some of the mapping was drawn incorrectly. A field visit and more research is required to determine the point of connection.</p> <p>11/25/2019 - A field visit was conducted to determine the point of connection from the facility to our MS4. While pulling manhole lids, a very strong odor with some flow was noted in our MS4. Further research of plans and the field visit indicated that a 72" run of storm sewer needed to be added to GIS, and that the two underground 50/10 BMPs at the facility connect to the 72" run across the street. DEQ was contacted to notify them that their permitted facility appeared to be discharging something other than stormwater to the County's MS4.</p> <p>11/27/2019 - Met onsite with DEQ, DPU, and the company representatives to determine the source of the odor and appropriate cleanup methods. DPU assisted to eliminate the sanitary sewer as a contributing factor. We pulled the manhole lids to the BMPs and determined the one nearest where the reported spill had occurred was holding a liquid soy product. It appeared that the facility operators and quality manager were unaware that their tank</p>	Illicit discharge eliminated

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	farm secondary containment valve should be in the 'closed' position at all times until it needs to be drained, and that only rainwater can go to the storm sewer, while contaminated water should go to the sanitary sewer with approval from DPU. This was explained to them, and they agreed to contact a cleanup contractor to vac out the material from the BMP to prevent further discharge to our MS4. This procedure is compliant with their SPCC plan, and they agreed that they will follow their plan in the event of a spill in the future. The cleanup contractor is confirmed to pump the BMP on 12/02/19.	
IDDE00605		
Potential water line issue	11/26/2019 - DPW staff sent notification of a possible water main issue. The flow could not be chlorine tested due to deep structures, and the outfall could not be accessed.  11/26/2019 - Forwarded to DPU.	Illicit discharge eliminated
IDDE00606		
Dumped household materials	11/27/2019 - Received notification via online spill report form of a homeowner who had dumped two large piles of various household materials; one in front of their property and the other at the entrance of an alleyway that runs behind their property.  11/27/2019 - Documented the piles and spoke with Community Maintenance and Road Maintenance. Community Maintenance had already received the complaint, and they were working with DPU to address the issue. While the second pile extended into the roadway, Road Maintenance spoke with DPU and agreed it would be handled through DPU & Community Maintenance's efforts.	Illicit discharge eliminated
IDDE00607		
Dumped leaves	11/27/2019 - After-hours report via online spill report form stated that there were several instances of neighbors dumping leaves onto County property.	Illicit discharge eliminated

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	12/02/2019 - Forwarded to Road Maintenance and notified homeowner that it would be addressed.	
IDDE00608		
Oil on roadway	<p>12/09/2019 - The Road Department forwarded a concern regarding oil on the roadway in a neighborhood.</p> <p>12/09/2019 - The cul-de-sac appeared to have sheen and evidence of a previous attempt to clean the material with oil dry. The material ran from the cul-de-sac to around the corner on the next street, but the storm drain did not appear to be impacted. The homeowner who submitted the complaint came out to discuss an unknown company that had placed the oil dry 3 days prior, but they did not catch the name. I contacted the recycling company in the area, but this is the week they are in a different locality. The private trash service in this area said that they would call me back but that their pickup is scheduled for the next day in the area. The cleanup contractor was contacted to clean the affected areas.</p>	Illicit discharge eliminated
IDDE00609		
Leaves in storm drains	<p>12/09/2019 - A homeowner notified DPW of a private lawn care company that blew leaves into the storm drains in his neighborhood.</p> <p>12/09/2019 - Spoke with the homeowner and let him know that the Road Maintenance division would be responsible for cleaning the infrastructure and addressing the issue with the company. Forwarded to Road Maintenance.</p>	Illicit discharge eliminated
IDDE00610		
Fuel release	<p>12/09/2019 - Received notification of a fuel release at a construction site.</p> <p>12/09/2019 - A fuel tank nozzle was noted actively dripping fuel onto the ground near the James River.</p>	Illicit discharge eliminated

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	The complainant notified DPW inspectors and DEQ. The DPW inspector addressed the issue with the contractor and will continue to monitor the area.	
IDDE00611		
Oil sheen discharge	12/10/2019 - DPU Operations sent notification of an oil sheen entering an inlet on their yard.  12/10/2019 - The sheen was captured in the sediment trap, and oil absorbent pads and booms were used to remove the material.	Illicit discharge eliminated
IDDE00612		
Deer in ditch	12/13/2019 - Received notification via online spill report form stating that a deer had been hit and was in the ditch.  12/13/2019 - Forwarded to Police to have Animal Protection remove the deer.	Illicit discharge eliminated
IDDE00613		
Green dye discharge	12/16/2019 - Received notification of a contractor who pumped a groundwater/green dye mixture into two curb inlets that drain to a creek.  12/16/2019 - Contacted DEQ to make them aware of the issue and to see if they needed additional reporting information based on the nature of the construction. The contractor had dye-tested the sanitary force main piping and pumped the groundwater/green dye mixture (estimated 50,000 gal.) into the curb inlets at two points, both of which drain to the creek. The contractor was stopped and then received approval from DPU to pump the remaining quantity into the sanitary sewer system. Notifications were sent to appropriate county staff and additional DEQ staff.	Illicit discharge eliminated
IDDE00614		
Petroleum in manhole	12/17/2019 - DPW staff reported a heavy petroleum odor in a manhole.	Illicit discharge eliminated

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	12/17/2019 - Placed boom at outfall during heavy rainstorm and removed the following day.	
IDDE00615		
Broken private sewer lateral	<p>12/20/2019 - Complaint forwarded from DPU alleging owner of 5800 Bloomingdale Avenue dumping sewage from private lateral sewer line break into ditch and ultimately the creek across the street.</p> <p>12/20/2019 - DPW met with DEQ representative and owner of 5800 Bloomingdale Avenue. The owner agreed to let DEQ &amp; DPW know when they have repairs scheduled.</p> <p>12/31/2019 - Homeowner's daughter called to let me know that the repair work had been completed by a plumber on 12/21/2019.</p>	Illicit discharge eliminated
IDDE00616		
Green dye discharge	<p>12/26/2019 - Received a complaint of turbid water with a green tint coming from an outfall below the Tucker H.S. construction project.</p> <p>12/26/2019 - This complaint was sent to the wrong division on December 23rd and did not reach the Env Division until Dec 26th. After inspection and record review with the E&amp;S inspector, the source for the turbid stormwater was identified. An unauthorized discharge of sediment laden water from the Tucker H.S. construction project occurred prior to the holiday and was addressed by the E&amp;S inspector and corrected by the contractor at that time. The outfall EN0000002051 was flowing clear at the time of inspection. There were a few pockets of water along the receiving ditch that looked like they may have had a slightly green tint. However, above and below this area and the receiving stream were both clear with no odor. At the time of my inspection, the ditch was flowing because a hydrant was in use across the street, therefore, I did not</p>	Illicit discharge eliminated

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	<p>perform a chlorine test. A utilities inspector at Tucker H.S. said no green dye had been used on the Tucker H.S. project but indicated that if it had been flowing green it was likely the result of green dye used to find a sanitary leak at a nearby pump station (see IDDE00613). I will check this outfall again for evidence of green water in a follow-up inspection. At the time of inspection, there was no release to report, nor any recoverable material.</p> <p>01/02/2020 - Water in outfall and channel is clear.</p>	
IDDE00617		
Potential water main break	<p>12/27/2019 - DPW staff forwarded a suspected water main break draining to Rocky Branch.</p> <p>12/27/2019 - Public Utilities was notified of the issue and responded accordingly. DEQ was notified of the flow into the creek.</p>	Illicit discharge eliminated
IDDE00618		
White film in ditch	<p>12/30/2019 - DPW staff reported a white film on the surface of standing water in a ditch.</p> <p>12/31/2019 - Inspected the ditch and did not note any white film or other material present.</p>	Illicit discharge eliminated
IDDE00619		
Iron bacteria	<p>12/31/2019 - DPW staff sent notification of a sheen on a section of a creek.</p> <p>12/31/2019 - The sheen appeared to be iron-oxidizing bacteria.</p>	Illicit discharge eliminated

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Sewage Discharges between January 1, 2019 and December 31, 2019		
1/14-15/19	A sewage overflow occurred at Gillies Creek SPS. The overflow was due to the station being shutdown for repairs to the 24" force main downstream. Sewage overflowed from one sanitary sewer manhole at the station. Approximately 165,200 gallons of sewage spilled.	A cleanup of the area was performed, and lime applied. Repairs to the force main were completed on 1-15-19.
1/17/19	A stoppage in the sanitary sewer main caused a sewage spill from MH #259SW054 and MH # 198NW020, located in the easement on the property of 2811 N. Parham Rd. Approximately 1,050 gallons of sewage spilled.	A cleanup of the area was performed and lime applied. A root mass was removed which appeared to be the cause.
2/23/19	Heavy rain caused a sewage spill from a cleanout located at 8015 Willkinson Rd. Approximately 11,925 gallons of sewage spilled.	A cleanup of the area was performed, and lime applied.
2/24/19	A bypass pumping failure caused a sewage overflow from MH #573NE021, located in an easement behind 12608 Wilde Lake Ct. Approximately 15,750 gallons of sewage spilled.	A cleanup of the area was performed.
2/23-25/19	Heavy rain caused a sewage overflow from 2 manholes onto surrounding grass areas and into Gillies Creek. Approximately 122,234 gallons of sewage spilled.	A cleanup of the area was performed, and lime applied.
2/26/19	A pump failure caused a sewage overflow at	A cleanup of the

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	the Almond Creek SPS. Sewage overflowed from one sanitary manhole onto the surround grass and into Almond Creek. Approximately 36,400 gallons of sewage spilled.	area was performed, and lime applied.
3/1/19	A stoppage in the sanitary sewer main caused a sewage spill from MH #261SW022 and MH # 261SW021, located in the easement on the property of 8350 Hermitage High Boulevard. Approximately 1,125 gallons of sewage spilled.	A cleanup of the area was performed, and lime applied.
3/2/19	A stoppage in the sanitary sewer main caused a sewage spill from MH #402SE017 and MH # 402SE018, located in front of 11260 West Broad St. Approximately 1,560 gallons of sewage spilled.	A cleanup of the area was performed.
3/4/19	Heavy rain caused a sewage overflow from one hatch cover on the sluice gate chamber at Gillies Creek SPS. Approximately 8,260 gallons of sewage spilled.	A cleanup of the area was performed, and lime applied.
3/21/19	Heavy rain caused a sewage overflow from 1 manhole onto surrounding grass areas and into Almond Creek. Approximately 21,100 gallons of sewage spilled.	A cleanup of the area was performed, and lime applied.
3/21/19	Heavy rain caused a sewage overflow from 2 manholes onto surrounding grass areas and into Tuckahoe Creek. Approximately 34,700 gallons of sewage spilled.	A cleanup of the area was performed, and lime applied.
3/29/19	Leak from a 30" force main leaving the River Road SPS left sewage in the surrounding grass area and into Tuckahoe Creek. Approximately 107,100 gallons of sewage	Investigating what caused the leak. Installed a trench and sump to

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	spilled.	contain any additional flow and pump it back into the station.
4/2/19	A stoppage in the sanitary sewer main caused a sewage spill from MH #407NE010, located in easement behind 10425 Marbury Terrace. Approximately 2,805 gallons of sewage spilled.	A cleanup of the area was performed and lime applied.
4/8/19	A stoppage in the sanitary sewer main caused a sewage spill from MH #261SW022 and MH #261SW021, located in easement on property of 8350 Hermitage High Boulevard. Approximately 550 gallons of sewage spilled.	A cleanup of the area was performed, and lime applied.
4/19/19	A stoppage in the sanitary sewer main caused a sewage spill from MH #259SE018 and MH #259SE017, located in easement on property of 3010 N Parham Rd. Approximately 1.110 gallons of sewage spilled.	A cleanup of the area was performed, and lime applied.
5/6/19	A stoppage in the sanitary sewer main caused a sewage spill from MH #145SW028 and MH #145SW038, located in easement behind 8107 Michael Rd. Approximately 2,200 gallons of sewage spilled.	A cleanup of the area was performed
8/2/19	While connecting the new 30-inch sewer to the existing manhole (MH #406SW511), it was discovered the manhole was leaking sewer into the trench, in which a groundwater sump pump was pumping up into a filter bag at the curb and gutter on Brays Fork Drive. This curb and gutter led	First Call Environmental was called to provide a cleanup of area. The leak was fixed.

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	to a BMP at a curb inlet along the road. Approximately 500 gallons of sewage spilled.	
8/6/19	A broken sanitary sewer main caused a sewage spill from MH #105NW003 - MH #150SW020, located at the intersection of Dumbarton Rd & Gillespie Ave. Approximately 1,500 gallons of sewage spilled.	After televising the main line, we will add this location to our emergency repair, rehab or replacement or to our non-emergency repair, rehab or replacement; location added to our scheduled cleaning program.
9/19/19	Less than 2 gallons of oil was leaked on the roadway when a crane lifted a cage drive assembly out of SC #8.	Absorbent pads and absorbent material were used to clean up the area.
9/24/19	Less than 10 fl oz of hydraulic oil leaked from a Godwin pump at the south end of ENR 9.	Absorbent material was used to clean up the area.
9/25/19	Less than 0.5 gallons of mineral oil leaked from transformer EDS-ETF-31.	Absorbent material was used to cleanup area.
10/4/19	50 gallons of 12% sodium hypochlorite solution was released via a broken underground line. This event was reported	Contractor was brought in to remove affected

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	to the NRC and other agencies	soils and make repairs.
10/19/19	Unknown amount of 12% sodium hypochlorite solution was released via a broken underground line. This event was reported to the NRC and other agencies	Contractor was brought in to remove affected soils and make repairs.
10/29/19	A broken sanitary sewer main caused a sewage spill from MH #263SW009 - MH #263SW061, located in an easement behind 8215 Rambler Drive. Approximately 843 gallons of sewage spilled.	After televising the main line, we will add this location to our emergency repair, rehab or replacement or to our non-emergency repair, rehab or replacement; location added to our scheduled cleaning program
12/4/19	A broken sanitary sewer main caused a sewage spill from MH #230SE500 - MH #230SE004, located in front of 1919 New Market Road. Approximately 20,625 gallons of sewage spilled.	A cleanup of the area was performed
12/4/19	A contractor broke a 16" force main in front of New Market SPS while installing guardrail. Sewage spilled from sanitary sewer manhole #SMH00137 for approximately 4 hours. Approximately 83,000 gallons spilled	A cleanup of the area was performed, and lime applied.
12/19/19	A broken sanitary sewer main caused a	After televising

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	sewage spill from MH #023NE040 - MH #023NE046, located in an easement on the property of 2300 Gordons Lane. Approximately 1,320 gallons of sewage spilled.	the main line, we will add this location to our emergency repair, rehab or replacement or to our non-emergency repair, rehab or replacement; location added to our scheduled cleaning program
12/21/19	Almond Creek SPS was shut down for emergency repairs which led to a sewage overflow at the plant. Approximately 201,500 gallons spilled. All repairs have been completed and station is back in service.	A cleanup of the area was performed, and lime applied.
12/27/19	Less than 15 gallons of MLSS leaked from NRCY 9A pump at the southside of ENR 9.	Absorbent pads and lime were used to cleanup area.
12/27/19	Less than 10 gallons of MLSS leaked from NRCY 10 pump at the southside of ENR 10.	Lime was used to cleanup area.
12/27/19	A stoppage in the sanitary sewer main caused a sewage spill from MH #409SW009 and MH #409SW502, located in easement behind 2271 Lincoln Ridge Lane. Approximately 3,050 gallons of sewage spilled.	A cleanup of the area was performed, and lime applied.

Each annual report shall include the amount of linear feet of sanitary sewer

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inspected during the reporting year.

Length of Sanitary Sewer Inspected between January 1, 2019 and December 31, 2019	363,935 feet
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The initial annual report shall include a description of the procedures the permittee will implement to reduce floatables as required by Part I.B.2.e)3).

### Public Works

DPW requires trash racks on all curb inlets in proposed shopping centers, fast food restaurants, convenience stores, auto parts stores, and other facilities where significant trash, debris and other contaminants may be generated. Due to flooding and safety issues, trash racks are not permitted on any inlets in the public right-of-way. The minimum design standards for the trash racks are specified in Chapter 15 of the Henrico County Environmental Compliance Manual.

Henrico County employs ARC to remove litter from County rights-of-way. The pick-up is performed daily, and progress is tracked in tons of litter removed as well as the number of bags of litter removed. ARC is also used bi-weekly on the West and East End maintenance yards to reduce floatables from entering the MS4. Program effectiveness is evaluated based on the tons of litter removed, as this decreases the quantity of floatables entering the MS4. Between 01/01/2019 and 12/31/2019, ARC removed 334,282.3 pounds or 11,142.7 bags and 230 tires worth of litter from county rights-of-way and maintenance facilities.

### Public Utilities

- Division of Solid Waste implemented programs:
  - Neighborhood clean-ups are a program designed to allow neighborhoods with homeowner's associations with an opportunity to remove trash/debris from their property. There is no qualification process for neighborhoods to be selected.
  - Community clean-ups are a program designed to allow older neighborhoods with an opportunity to remove trash/debris from their

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- property. There is a qualification process for neighborhoods to be selected.
- Hazardous Material Disposal is a program where residents can bring their oil/antifreeze/paints/solvents to the public use areas for disposal.
  - Bulky Waste Program is a program where residents can request a pickup of large items, brush, etc. from their property for a fee.
- Keep Henrico Beautiful implemented programs:
    - Because We Care Program is a program where groups or individuals can sign up to adopt any County road, park community or school within the County.
    - Yard Waste Disposal Education is a program where we discuss how to get rid of all your yard waste.
    - Litter Removal Education is a program where we discuss the importance of Keeping Henrico Beautiful by not littering.
    - Pet Waste Education is a program where we discuss the importance of picking up after your pets.
    - "Magic of Recycling" – Litter prevention program that targets kids ages 4-7.
    - Watershed Education Partnership – We now partner with NOAA BWISE grant that trains teachers in watershed education and teaches 6<sup>th</sup> graders watershed education.
    - ORBIT Program – We now partner with the Henrico Sheriff's Office to provide an inmate work crew to help keep Henrico roadways free of loose trash.

**Each following annual report shall include a list of sites monitored, a summary of the monitoring protocols used, and a summary of the monitoring results and analyses.**

This reporting language was originally included in a draft version of the MS4 Permit and was related to a "floatables monitoring" condition. Prior to finalization of the MS4 Permit, the "floatables monitoring" condition was eliminated after DEQ reviewed the federal rule making document and determined this condition was not required. However, the reporting language was moved to Part I.B.2.e without being edited to remove reference to the "monitoring" that was no longer required. When this oversight was discovered, DEQ agreed that the reporting element could be interpreted to read:

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*Each following annual report shall include a summary of the County's efforts to reduce floatables and an evaluation of the effectiveness of those efforts.*

Therefore, the following revised Specific Reporting Requirement is addressed in this Annual Report.

**Each following annual report shall include a summary of the County's efforts to reduce floatables and an evaluation of the effectiveness of those efforts.**

Although the reductions can't be quantified, observations of several sites on which trash racks have been installed display that the County's trash rack program appears to be effective at reducing floatables.

DPW removed 167 tons of litter from the County ROW using ARC.

Department of Public Utilities views its program to reduce floatables as a success. During this reporting period, Public Utilities have removed the following from our community:

- Community cleanups have removed 2,689.03 tons of trash and debris from our older communities.
- Neighborhood cleanups have removed 153.40 tons of trash and debris from selected neighborhoods.
- Our bulky waste program has removed 442 tons of trash and debris from the County.
- Public Utilities has collected 275.26 tons of tires.
- Solid Waste division has collected 19,479 gallons of used oil/antifreeze at our public use areas.
- Solid Waste division has collected 3,135 gallons of oil-based paint & solvents at our public use areas.
- Keep Henrico Beautiful has collected 1,843 bags of trash from our roadsides, communities, schools, and parks with their programs.

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### MS4 PROGRAM IMPLEMENTATION SPILL PREVENTION AND RESPONSE

Each annual report shall include a list of spills, the source (identified to the best of the permittee's ability), and a description of follow-up activities taken.

Spills that Occurred between January 1, 2019 and December 31, 2019	
01/08/2019	Less than 5 gallons of sodium bisulfite was spilled in front of the bisulfite fill station. There was a slight leak while filling. Spill was cleaned up.
01/22/2019	Less than 5 gallons of sodium bisulfite was spilled in front of the bisulfite fill station. There was a slight leak while filling. Spill was cleaned up
02/04/2019	Approximately 1-gallon hydraulic oil was released from an unknown source on the East End Road Maintenance yard.  Oil was contained to a depression in asphalt and addressed with oil dry, and a boom was placed around spill ensure containment. All cleanup materials were placed in clean harbors barrels.
02/05/2019	Administration Building Parking Deck 4301 E. Parham Road  On 2-5-19 a vehicle motor oil spill was noticed on the second level of the Administration building parking deck. Total amount of product was estimated to be 2 quarts. County staff put down sta-dri and swept up the product once the fluid was absorbed. Everything was contained to the immediate area. All materials were properly disposed of and there was no impact to the storm water.
02/05/2019	Unknown quantity of hydraulic oil was released from broken valve on truck 630 on I64 between Nine-Mile Rd and Tuckahoe.

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	EESD was alerted. No remediation was viable.
02/06/2019	5 gallons of hydraulic oil were spilled from truck 630 on the asphalt parking lot at the CAM Depot. A small portion entered a drainage swale but with no rain or running surface it didn't affect the soil.  Cleaned up with oil dry and absorbent pads. Placed used materials in Clean Harbors barrels.
02/12/2019	Hydraulic Oil leak from contractor's radial stacker located on the biosolids storage pad. Stay dry was applied and spill contained. Biosolids pad drains back to plant.
02/13/2019	Non-potable water leak from 1" copper line feeding WRAS water line. Contractor is replacing line.
02/14/2019	About 20 gallons of hydraulic fluid spilled from truck 694 on the West End Road Maintenance yard.  Oil dry was used to absorb free material and booms were placed at outfalls for precaution. Materials were disposed of in Clean Harbors barrels.
02/28/2019	Less than 1 gallon of diesel fuel leaked due to a mechanical failure/hose leak on contractor's delivery truck at the CAM Fueling station. Stay dry was applied and spill contained.
03/07/2019	Approximately 20 gallons of hydraulic oil were spilled from a county truck at 2129 Charles City Rd. Oil was contained to road/shoulder. Minimal amount reached soil.  5 bags of Oil Dry, oil only pads, and a containment pool were used to contain spill. First Call Environmental was called in to finish cleanup and dispose of materials.
03/26/2019	Stormwater from biosolids pad at the SE corner overflowed the containment. Less than 2 gallons observed. Sumped out the area, limed, and added sandbags. Will monitor.
04/01/2019	Republic Services (contractor) spilled less than 10 gallons of hydraulic fluid at the PTF pad. WRF staff put down stay dry material and hay and cleaned up spill. Spill was

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	contained on pad and pad drains back to the plant.
04/23/2019	Less than 25 gallons of MLSS leaked from a pump at the plant drain pump station. Spill did not reach any conveyance or gutter system. Lime was spread out and pump is being fixed.
05/15/2019	Less than 20 gallons of MLSS spilled due to ENR-VTP-22 leaking with a busted seal at ENR 10 NRCY C. The spill did not reach any conveyance or gutter system. Lime was spread and work order entered to repair pump.
06/12/2019	<5 Gallons of hydraulic oil were spilled when a line broke on a Vactor truck at the intersection of Hart St and Hanover Rd. Oil stayed within curb and gutter and was removed with along with any sediment in the road and oil dry used. All materials were put Clean Harbor barrels for disposal.
06/13/2019	Oil sheen from small hydraulic leak required quick response because it was near an inlet on the East end yard. Booms and absorbent pads were used to capture all the sheen.  All materials were placed in Clean Harbors Barrels.
06/14/2019	<1-quart hydraulic oil leaked from truck parked near inlet on the East end yard. All oil was removed with oil dry before it entered the inlet.  Used oil dry was placed in Clean Harbors Barrel.
06/14/2019	<5 gallons of diesel fuel were spilled from a tractor with a cracked fuel tank in bay, under cover at East end yard. Spill was immediately contained and absorbed with oil dry. Tank was pumped out to stop further leaking.  Used oil dry was placed in Clean Harbors Barrel.
06/17/2019	An unknown non-county vehicle spilled <5 gallons of used motor oil at the corner of W. Magruder St and N. Wilson Way as well as the corner of W. Union St and Pickett Ave. Spill stayed on the asphalt and was absorbed with oil dry.  Used oil dry was placed in Clean Harbors Barrel.

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06/27/2019	<p>Backhoe 708 had a leak of ~1/4 gallon in its bay. Fluid tank needed replaced.</p> <p>Oil dry was applied to the free product and disposed of in Clean Harbors barrels.</p>
07/08/2019	<p>Mental Health East Clinic 3908 Nine Mile Road</p> <p>On 7-18-19 a citizen's automobile had left a trail of motor oil in the parking lot of the Mental Health East Clinic. County staff became aware of the spill on 7-19-19. Approximately one quart of motor oil spilled onto the asphalt. County staff determine the product had been absorbed into the asphalt and dried. There was no impact to the storm water.</p>
07/10/2019	<p>&lt;1/4 gallon of hydraulic fluid was spilled in bay 605 at the West End yard. Spill was on concrete and away from any outfall.</p> <p>Oil dry was applied to collect free product and disposed of in Clean Harbors barrels.</p>
07/10/2019	<p>Spilled less than 100 gallons of MLSS at ENR 11 NRCY 11A due to pump failure. Spill reached storm sewer system (curb and gutter) but didn't reach SWO 002. Cleanup of material spilled was conducted.</p>
07/11/2019	<p>&lt;1 gallon of hydraulic oil was spilled in bay 745 at the East end yard. Spill stayed on concrete. Oil dry was used to clean up the oil and placed in Clean Harbors barrels.</p> <p>Implemented large rolling pad to catch further leaks until truck is serviced.</p>
07/15/2019	<p>&lt;10 gallons of hydraulic fluid were spilled from truck 744 in its bay and at 11508 Longview Landing Dr. The spill was under cover on the yard and on asphalt in the field.</p> <p>Oil dry was used on free material and an oil pool was used to contain the spill on the work site. All materials were disposed of in Clean Harbors barrels.</p>
07/16/2019	<p>&lt;1/4 gallon of hydraulic fluid was spilled outside the</p>

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	<p>maintenance shop by an unknown vehicle. Spill stayed on the asphalt and was treated before it could reach an outfall.</p> <p>Oil dry was applied and disposed of in the Clean Harbors barrels.</p>
07/16/2019	<p>1 gallon of hydraulic fluid was spilled by truck 689 on the West End yard. Spill was in the bay and along the concrete apron outside the bay.</p> <p>Oil dry was applied to collect free material before being disposed of in Clean Harbors barrels.</p>
07/18/2019	<p>Less than 5 gallons of oils was spilled at ENR9, Cell 9 due to Godwin pump failure. No product escaped the deck. Absorbent materials were used to clean spill up.</p>
07/23/2019	<p>&lt;1/4 gallon of hydraulic fluid was spilled beneath a paver on the West End Road Maintenance yard. It contacted rainwater and created a small sheen.</p> <p>15 absorbent pads were used to collect free product in the sheen and a boom was placed around the leak to prevent further issue. All products were disposed of in Clean Harbors barrels.</p>
07/25/2019	<p>~1 gallon of engine oil was spilled by truck 724 in its bay on the West End yard. Engine seized and caused a crack that allowed the spill.</p> <p>Contained with oil dry and disposed of in the Clean Harbors barrels after allowing the leak stopped.</p>
07/29/2019	<p>&lt;2 gallons of hydraulic fluid were spilled by truck 524 on the West End yard. Leak was under cover and truck was not in use.</p> <p>Truck was sent to the shop and oil dry was applied to the spill. Materials were disposed of in Clean Harbors barrels.</p>
07/29/2019	<p>Spilled less than 14 gallons of 12% sodium hypochlorite solution 5' North of DCB. WRF staff immediately began soaking up the free liquid and shut off the line. Contractor</p>

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	excavated affected soil.
07/31/2019	Truck #19062 – vehicle oil spill on concrete parking area. Approximately 1 cup.  Oil Dri was used to absorb the material. Truck was taken to Central Automotive Maintenance and repaired
08/3/2019	Approximately 20 gallons of hydraulic fluid spilled from truck 678 when a main line blew at 1502 Brigham Rd. It was on the road and in the ditch immediately beside the vehicle.  First Call Environmental was called to clean the area after county crews contained the spill. FCE removed the topsoil in the ditch and reseeded the area.
08/12/2019	<1/4 gallon of hydraulic fluid was spilled by an unknown vehicle outside of the maintenance shop in the West End.  Oil dry was applied and allowed to absorb free material before being disposed of in the Clean Harbors barrels.
08/12/2019	Less than 1 gallon of polymer was spilled at the Solids Handling Polymer delivery area by a contractor. This was caught and cleaned up quickly.
08/15/2019	<1/4 gallon of hydraulic fluid was spilled by a paver on the West End yard and outside the West End maintenance shop.  Oil dry was applied to the spill and disposed of in Clean Harbors barrels.
08/15/2019	Less than 3 gallons of Sodium Hypochlorite was spilled outside of the sludge blend facility while filling the hypo day tank. The area was immediately rinsed with water and allowed to degrade in the sunlight.
08/15/2019	Paint truck – traffic paint washed away in rain prior to drying. Approximately 17 gallons.  Appropriate Spill Notifications were made, including DEQ due to nearby creek. No impacts were noted. A meeting was held to inform paint truck crew to keep an eye on the

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	weather
08/17/2019	<p>¼ gallon of hydraulic fluid was spilled by an unknown vehicle outside the West End maintenance shop.</p> <p>Oil dry was applied to the spill and after collecting the free product, was disposed of in Clean Harbors barrels.</p>
08/19/2019	<p>&lt;10 gallons of motor oil were spilled from the vector truck due to a loose oil filter at the East End yard. The spill stayed on asphalt and was contained immediately with oil dry, booms, and pads.</p> <p>Materials were disposed of by Sweeping Corp. of America.</p>
08/30/2019	<p>&lt;5 gallons of transmission fluid were leaked from a foreman truck at the corner of Beulah Rd and Williamsburg Rd. Spill stayed on asphalt and all free product was removed with oil dry.</p> <p>Used oil dry was placed in Clean Harbors barrels.</p>
08/30/2019	<p>Truck 654 had a diesel spill of &lt;1/4 gallon outside the West End maintenance shop after being overfilled.</p> <p>Oil dry was applied to the spill and after being recovered, disposed of in the Clean Harbors barrels.</p>
09/05/2019	<p>&lt;1/4 gallon of hydraulic fluid was spilled by paver 711 on the West End yard and while being moved to the West End maintenance shop. No outfalls were impacted by the spill.</p> <p>Oil dry was applied to the trail and individual spill spots. Spill materials were disposed of in the Clean Harbors barrels.</p>
09/09/2019	<p>¼ gallon of Citrus Clean was found outside the shop due to a leaky spray bottle on a truck.</p> <p>Spill was contained on asphalt and treated with oil dry before being disposed of in the Clean Harbors barrels.</p>
09/09/2019	<p>Less than 2.5 gallons of used centerfuge oil spilled from the bed of a truck at the parking lot in front of the Admin building. The area was cleaned up using absorbent</p>

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	material.
09/13/2019	Less than 0.5 gallons of hydraulic oil was spilled by a contractor's crane at the scale house. Absorbent material was used to cleanup area.
09/15/2019	< 13 cubic yards of mud and water from vector truck was dumped into the back-right rock outfall at East End Yard. The spill flowed through outfall and out onto the forest floor.  All soiled stone was removed and replaced, pipe was cleaned, mud on forest floor behind outfall was shoveled and removed.
09/19/2019	Less than 2 gallons of oil was leaked on the roadway when a crane lifted a cage drive assembly out of SC #8. Absorbent pads and absorbent material were used to cleanup spill.
09/20/2019	Public Safety Building 7721 E. Parham Road  On 9-20-19 a contractor poured approximately one to two gallons of floor cleaning solution containing water and floor cleaner onto a splash block adjacent to the dumpster at the Public Safety building. The resulting discharge left a white dry powder residue. County staff became aware of the issue on 9-23-19. The affected area was cleaned with clean water and contained. All products were properly disposed of and there was no impact to the storm water.
09/24/2019	Less than 10 fl oz of hydraulic oil leaked from a Godwin pump at the south end of ENR 9. Absorbent material was used to cleanup spill.
09/25/2019	Less than 0.5 gallons of mineral oil leaked from transformer EDS-ETF-31. Absorbent material was used to cleanup area.
10/07/2019	Gradall 771 had a hydraulic spill of <1/4 gallon outside the West End maintenance shop waiting for maintenance.  Oil dry was applied and absorb free material and disposed of in Clean Harbors barrels.
10/08/2019	<1/4 gallon of oil was spilled by truck 750 outside the West

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	<p>End maintenance shop. It was away from outfalls.</p> <p>The oil was recovered with oil dry and disposed of in Clean Harbors barrels.</p>
10/09/2019	<p>&lt;1 gallon of hydraulic fluid leaked onto bay 573 and stayed on concrete, under cover at East End yard.</p> <p>Floor dry was applied, hydraulic fluid was removed and used floor dry was placed in clean harbors barrels.</p>
10/10/2019	<p>&lt;1/4 gallon of Citrus Clean was spilled off of paver 610 when a leaky sprayer fell over.</p> <p>Oil dry was applied to the free product and recovered before being disposed of in Clean Harbors barrels.</p>
10/10/2019	<p>&lt;1/4 of Hydraulic fluid was spilled by Gradall 771 in the West End shop parking lot.</p> <p>Oil dry was applied to the spill and disposed of in the Clean Harbors barrels.</p>
10/10/2019	<p>&lt;1/4 gallon of coolant was spilled by truck 604 outside the West End shop.</p> <p>The spill was contained with oil dry and disposed of in the Clean Harbors barrels.</p>
10/16/2019	<p>Residual hydraulic fluid from salt spreaders became an oil sheen in heavy rain and washed across the asphalt towards the grass/soil at East End yard.</p> <p>A boom was placed to catch the flow and pads were used to skim up the oil sheen. Affected soil is to be removed. Used pads were placed in clean harbors barrels.</p>
10/20/2019	<p>&lt;1-gallon Hydraulic fluid washed into retention pond in heavy rain at East End yard. Created an approximately 1x7ft oil sheen.</p> <p>Universal pads were used to skim up majority of sheen, Boom was placed across part of pond to contain the sheen. Oil Only pads were left on surface to soak up</p>

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	remainder. Used materials were placed in Clean Harbors barrels.
11/20/2019	Vehicle #507 – vehicle oil spill on concrete parking area. Approximately 1 quart.  Oil Dri was used to absorb the material. Truck was taken to Central Automotive Maintenance and repaired.
11/21/2019	Liquid from a scum line at SEC 7 spilled. Less than 10 gallons spilled. Absorbent material was used to clean up the area.
11/21/2019	Less than 2 quarts of hydraulic fluid leaked from a vendor's case loader at the biosolids pad. The vendor promptly cleaned up the affected area.
12/03/2019	<1/4 gallon of hydraulic fluid was spilled by an unknown vehicle outside of the West End shop.  Oil dry was applied to the spill and disposed of in the Clean Harbors barrels.
12/05/2019	¼ gallon of hydraulic fluid was spilled by truck 694 in its bay on the West End yard.  Maintenance was notified of the spill and oil dry was applied and disposed of in the Clean Harbors barrels.
12/10/2019	Found an oil sheen in our Woodman Road Operations parking lot. Absorbent booms and absorbent pads were used to clean up the sheen. Items were disposed of after cleanup.
12/23/2019	A small amount of oil dripped from a vehicle onto Deep Bottom Boat Ramp Pavement.  A spill kit absorbent material was used to clean the dripping as much as possible. Will continue to monitor location in 2020.
12/31/2019	East Government Center 3820 Nine Mile Road  On 12-31-19 a citizen's vehicle spilled approximately one gallon of gasoline in the drive thru lane of the Henrico Credit Union ATM. A tow truck contractor was called to

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	assist, and all product was contained to the immediate area using absorbent material. All material was properly disposed of and there was no impact to storm water.
Various	Police Impound Lot  Four instances of motor oil drippage was discovered when vehicles were moved. These areas were excavated with all contaminated material being disposed of. Fresh gravel was used to back-fill the area formerly contaminated. There was no indication that any of these spots were allowed to enter the ground water or exposed to runoff.

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**PART I.B.2.g**

**MS4 PROGRAM IMPLEMENTATION  
INDUSTRIAL AND HIGH RISK RUNOFF**

The annual report due March 31, 2016 shall include a list of all known industrial and high risk dischargers including any non-VPDES regulated industrial and commercial stormwater dischargers determined by the permittee as contributing a significant pollutant load and that discharge to the MS4 system, a schedule of inspections and procedures for inspecting outfalls.

Industrial and High Risk Dischargers Determined to be Contributing a Significant Pollutant Load to the MS4 between January 1, 2019 and December 31, 2019		
Industrial and High Risk Discharger	VPDES Permit (Permit # or None)	Outfalls to the following to MS4 Structure(s)
No Industrial and High Risk Dischargers were found to be contributing a significant pollutant load to the MS4.		

No fewer than fifty MS4 structures that Industrial and High Risk Runoff Facilities discharge into will be inspected during each permit year and each will be inspected at least once during the permit cycle. In addition, Industrial and High Risk Runoff Facilities outfalls with a history of contributing significant pollutant loading to the MS4 during the previous permit year will be re-inspected the following permit year. These outfalls will be subject to the established inspection procedure, including evaluations of identified flows and maintenance and repair needs.

Each annual report shall report on implementation of the inspection schedule and include a list of the facilities and/or facility outfalls inspected during the reporting period.

During the permit year, fifty outfalls from Industrial and High Risk Dischargers were inspected.



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Inspections of Outfalls from Industrial and High Risk Dischargers  
conducted between January 1, 2019 and December 31, 2019

Industrial and High Risk Discharger	Outfall Location	Inspection Date	Determined to be Contributing Significant Pollutant Load to the MS4?
IC0052	MN000000026321	09/04/2019	No
IC0074	IN000000016232	10/11/2019	No
IC0090	IN000000025447	11/20/2019	No
IC0239	MN000000038312	12/05/2019	No
IC0256	MN000000034231	12/06/2019	No
IC0300	IN000000017273	09/04/2019	No
IC0329	IN000000024975	10/17/2019	No
IC0392	MN0000000143720	09/30/2019	No
IC0534	IN000000025443	11/22/2019	No
IC0534	MN000000038782	11/20/2019	No
IC0590	IN000000025372	12/18/2019	No
IC0618	IN000000021582	09/30/2019	No
IC0704	IN000000017336	10/10/2019	No
IC0709	MN0000000139407	03/27/2019	No
IC0734	MN0000000140939	04/25/2019	No
IC0739	MH000000002627	09/03/2019	No
IC0739	IN000000015480	09/03/2019	No
IC0843	IN000000017208	09/11/2019	No
IC0887	IN000000015467	10/28/2019	No
IC0889	IN000000040856	09/30/2019	No
IC0889	IN000000040872	09/30/2019	No
IC0890	IN000000024869	10/10/2019	No
IC0893	IN000000024837	11/20/2019	No
IC0952	MN0000000037972	10/10/2019	No
IC1012	IN000000017209	09/11/2019	No
IC1084	IN000000003914	06/06/2019	No
IC1138	MN0000000067764	05/08/2019	No
IC1138	MN0000000091612	05/08/2019	No

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IC1154	MN000000141518	05/14/2019	No
IC1176	MN000000038652	12/18/2019	No
IC1210	MN000000077443	10/10/2019	No
IC1428	MN000000046178	01/16/2019	No
IC1442	MH000000004261	11/05/2019	No
IC1555	MH000000006030	08/21/2019	No
IC1563	IN000000042968	08/05/2019	No
IC1723	IN000000005332	11/26/2019	No
IC1813	IN000000017295	11/25/2019	No
IC1813	IN000000017294	11/25/2019	No
IC1917	MN000000121137	01/09/2019	No
IC1938	IN000000044818	09/10/2019	No
IC1938	IN000000044818	09/10/2019	No
IC2040	IN000000052544	06/17/2019	No
IC2072	IN000000017266	09/04/2019	No
IC2107	MN000000142185	06/04/2019	No
IC2193	MN000000026346	09/04/2019	No
IC2208	MN000000037799	10/10/2019	No
IC2211	MN000000026341	09/04/2019	No
IC2223	MH000000008958	11/25/2019	No
IC2234	IN000000017281	11/25/2019	No
IC2241	IN000000017284	11/25/2019	No
IC2334	MN000000079890	05/09/2019	No

Inspections of Industrial and High Risk Dischargers determined to be contributing significant pollutant load to the MS4 conducted between January 1, 2019 and December 31, 2019

Industrial and High Risk Discharger ID#	Inspection Date	Results of Inspection
No Industrial and High Risk Dischargers were found to be contributing a significant pollutant load to the MS4. Therefore, no Industrial and High Risk Dischargers were inspected during the permit year.		

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Each annual report shall include a list of referrals to the Department.

Industrial and High Risk Dischargers referred to the Virginia Department of Environmental Quality between January 1, 2019 and December 31, 2019		
Industrial and High Risk Discharger	Referral Date	Reason for Referral
San J International (VAR050623)	11/25/2019	Strong odor and flow noted in MS4 at point of connection.
VPDES Industrial Stormwater Permitted Facilities located in Henrico County are listed below.		

DMRs received from VPDES Industrial Stormwater Permitted Facilities* as of December 31, 2019		
Permitted Facility	VPDES Permit #	DMR Date Received
Alfa Laval Incorporated	VAR051131	No DMRs Received
AMF Bakery Systems	VAR050885	No DMRs Received
BFI Old Dominion Landfill	VAR052236	No DMRs Received
Bunge Oils Incorporated	VAR050595	No DMRs Received

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CHEP Recycled Pallet Solutions LLC	VAR052375	No DMRs Received
Coca Cola Refreshments USA Inc.	VAR050709	No DMRs Received
CSX Transportation Inc. – Bryan Park Terminal	VAR051056	No DMRs Received
Ennis Paints Incorporated	VAR051550	No DMRs Received
Federal Express Corporation – Sandston	VAR051169	No DMRs Received
Gillies Creek Industrial Recycling	VAR052249	No DMRs Received
Hankins and Johann Incorporated	VAR051060	No DMRs Received
Henkel Corporation	VAR050574	No DMRs Received
Henrico County DPU Springfield Road Waste Management	VAR051025	No DMRs Received
Henrico County Water Reclamation Facility	VAR051633	07/01/2019
Hilex Poly Company LLC	VAR051636	No DMRs Received
IR Engraving LLC	VAR051142	No DMRs Received
IMTT – Virginia LLC	VAR052455	No DMRs Received

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Johns Manville	VAR051167	No DMRs Received
Lee Hy Paving Corporation	VAR051024	No DMRs Received
Mondelez Global LLC	VAR051209	No DMRs Received
Polykon Manufacturing LLC	VAR052405	No DMRs Received
Premier Fixtures LLC	VAR050656	No DMRs Received
Republic Services of Richmond	VAR051152	No DMRs Received
Rolling Frito Lay	VAR051607	No DMRs Received
San J International	VAR050623	No DMRs Received
S.B. Cox Recycling Center MRF	VAR051869	No DMRs Received
The East End Landfill	VAR050624	No DMRs Received
TRANSFLO Terminal Services TTSI	VAR051821	No DMRs Received
WestRock CP LLC – Laburnum	VAR052154	02/26/2019

\* The list of Permitted Facilities was obtained on February 11, 2020 from VDEQ's website

<http://www.deq.virginia.gov/Programs/Water/PermittingCompliance/PollutionDischargeElimination/PermitsFees.aspx#GGPs>

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# HENRICO COUNTY MS4 PROGRAM PLAN

## PART I.B.2.h

### MS4 PROGRAM IMPLEMENTATION STORMWATER INFRASTRUCTURE MANAGEMENT

Each annual report shall include a progress report on efforts to repair failed storm sewer outfalls.

Progress Reports on Efforts to Repair Failed Storm Sewer Outfalls			
OUTFALL ID	DATE	ACTION	RESULT
EN00000000445	3/7/2019	MAINTENANCE ACTIVITY	REMOVE OBSTRUCTION
	3/29/2019	MAINTENANCE ACTIVITY	JET PIPE
EN00000000744	7/22/2019	MAINTENANCE ACTIVITY	REMOVE TRASH
	11/5/2019	MAINTENANCE ACTIVITY	CLEAR OUTFALL
	12/9/2019	MAINTENANCE ACTIVITY	REMOVE TRASH
EN00000000827	6/19/2019	MAINTENANCE ACTIVITY	CLEAN CHANNEL
EN000000001661	6/19/2019	MAINTENANCE ACTIVITY	REMOVE OBSTRUCTION
EN000000001849	1/31/2019	SCREENING INSPECTION	SEDIMENT BUILDUP
EN000000001882	1/28/2019	SCREENING INSPECTION	NEEDS CLEANOUT
EN000000001997	5/28/2019	SCREENING INSPECTION	LARGE SINKHOLE
EN000000002065	9/19/2019	SCREENING INSPECTION	EROSION UNDER PIPE
EN000000002066	9/20/2019	SCREENING INSPECTION	PIPE NEEDS REPAIR
EN000000002096	5/15/2019	MAINTENANCE ACTIVITY	MOW
	6/26/2019	MAINTENANCE ACTIVITY	MOW
	10/18/2019	MAINTENANCE ACTIVITY	MOW
EN000000002299	9/30/2019	SCREENING INSPECTION	EROSION
EN000000002395	2/4/2019	SCREENING INSPECTION	SEDIMENT BUILDUP
EN000000002721	1/10/2019	SCREENING INSPECTION	OUTFALL OBSTRUCTED
EN000000002763	3/18/2019	SCREENING INSPECTION	EROSION
EN000000002890	9/24/2019	SCREENING INSPECTION	SEDIMENT / DEBRIS BUILDUP
EN000000004606	1/28/2019	SCREENING INSPECTION	NEEDS CLEANOUT
EN000000004698	2/4/2019	SCREENING INSPECTION	NEEDS CLEANOUT
EN000000005044	3/1/2019	SCREENING INSPECTION	NEEDS REGRADING

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	12/31/2019	MAINTENANCE ACTIVITY	JET PIPE
EN00000006061	6/12/2019	MAINTENANCE ACTIVITY	REPAIR OUTLT PROTECTION
EN00000006561	9/26/2019	MAINTENANCE ACTIVITY	REMOVE SEDIMENT AND DEBRIS
EN00000007567	6/28/2019	MAINTENANCE ACTIVITY	REMOVE SEDIMENT AND DEBRIS
EN00000008020	1/8/2019	SCREENING INSPECTION	CLOGGED
EN00000008023	1/8/2019	SCREENING INSPECTION	REBAR EXPOSED
	1/9/2019	SCREENING INSPECTION	REBAR EXPOSED
EN00000008024	1/8/2019	SCREENING INSPECTION	SEDIMENT BUILDUP
EN00000008073	1/9/2019	SCREENING INSPECTION	SEDIMENT BUILDUP
	1/10/2019	SCREENING INSPECTION	SEDIMENT BUILDUP
EN00000008074	1/9/2019	SCREENING INSPECTION	REBAR EXPOSED
	1/10/2019	SCREENING INSPECTION	REBAR EXPOSED
EN00000008101	11/17/2019	MAINTENANCE ACTIVITY	REMOVE OBSTRUCTION
	11/17/2019	MAINTENANCE ACTIVITY	REMOVE OBSTRUCTION
EN00000008541	9/9/2019	MAINTENANCE ACTIVITY	CLEAN CHANNEL
EN000000011947	10/14/2019	SCREENING INSPECTION	SEDIMENT AND DEBRIS BUILDUP
EN000000011948	10/14/2019	SCREENING INSPECTION	SEDIMENT AND DEBRIS BUILDUP
EN000000012168	10/14/2019	SCREENING INSPECTION	SEDIMENT AND DEBRIS BUILDUP
EN000000012737	7/31/2019	MAINTENANCE ACTIVITY	REMOVE SEDIMENT AND DEBRIS
EN000000013099	2/14/2019	MAINTENANCE ACTIVITY	CLEAN OUTFALL
EN000000013180	3/28/2019	MAINTENANCE ACTIVITY	REPAIR OUTLT PROTECTION
EN000000013242	11/5/2019	SCREENING INSPECTION	EROSION UNDER PIPE

Each annual report shall include a list of activities including inspections, maintenance, and repair of stormwater infrastructure operated by the permittee as required in Part I.B.2.h)1), including the total number of stormwater facilities operated by the permittee, the type and number of stormwater facilities inspected and maintained; the linear feet of storm sewer system owned and/or operated by

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## HENRICO COUNTY MS4 PROGRAM PLAN

the permittee, and the linear feet of storm sewer system inspected.

MS4 Infrastructure Inspected* between January 1, 2019 and December 31, 2019		
MS4 Infrastructure Type	Unit	Inspected
Inlets	each	4,632
Manholes	each	614
Junction Boxes	each	66
End Treatments	each	1,608
Mains	linear feet	2,572,218

\* includes Screening Inspections, Screening Inspection Follow-Ups, Construction Acceptance Inspections, Maintenance Evaluations, and Repair and/or Maintenance Activities

During this permit year (January 1, 2019 and December 31, 2019), 29.03% of the MS4 infrastructure was inspected.

Since the effective date of the MS4 Permit (April 1, 2015 thru December 31, 2019), 88.77% of the MS4 infrastructure has been inspected.

Inspection, Maintenance, and Repair Actions conducted on MS4 Infrastructure between January 1, 2019 and December 31, 2019			
MS4 Infrastructure Type	Inspections	Maintenance	Repair
Inlets	4,790	123	141
Manholes	637	5	2
Junction Boxes	66	1	1
End Treatments	1,609	70	1
Mains	28,019	1,639	68



## HENRICO COUNTY MS4 PROGRAM PLAN

On-Line* County-Operated SWM Facilities Inspected and/or Maintained between January 1, 2019 and December 31, 2019			
Type	Total	Inspected	Maintained
50/10 BASIN (5)	10	10	6
50/10 UNDERGROUND (6)	13	13	2
BAYFILTER (200)	1	1	1
BAYSEPARATOR (205)	1	1	1
BIORETENTION 1 (145)	3	3	2
BIORETENTION BASIN/TRENCH (10)	9	9	5
DRY DETENTION - UNDERGROUND (178)	1	1	0
DRY SWALE 2 (151)	2	2	0
EXTENDED DETENTION BASIN (15)	31	31	23
EXTENDED DETENTION BASIN W/A SHALLOW MARSH (16)	2	2	2
EXTENDED DETENTION POND 1 (175)	1	1	0
FILTERRA (215)	27	27	24
GRASS CHANNEL (110)	1	0	0
GRASSED SWALE (20)	11	11	2
IMBRIUM JELLYFISH (250)	1	1	1
INFILTRATION BASIN/TRENCH (25)	7	7	2
PERMEABLE PAVEMENT 1 (135)	4	4	0
RETENTION BASIN (WET POND) (30)	8	8	7
SHEETFLOW TO VEGETATED FILTER OR CONSERVED OPEN SPACE 1 (105)	2	2	0
SHEETFLOW TO VEGETATED FILTER OR CONSERVED OPEN SPACE 2 (106)	2	2	2
STORMCEPTOR (225)	1	1	1
STORMFILTER (220)	4	4	0
STORMTREAT (230)	1	1	1
STORMWATER360 (235)	5	5	3
Total	148	148	85

## HENRICO COUNTY MS4 PROGRAM PLAN

### PART I.B.2.h

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\* Facilities with either an Active or Accepted status as of December 31, 2019

On-Line Privately-Operated SWM Facilities Discharging to the MS4 that were Inspected and/or Maintained between January 1, 2019 and December 31, 2019			
Type	Total	Inspected	Maintained
50/10 BASIN (5)	55	10	0
50/10 UNDERGROUND (6)	69	10	0
BAYSAVER (210)	1	0	0
BIORETENTION 1 (145)	1	0	0
BIORETENTION 2 (146)	1	0	0
BIORETENTION BASIN/TRENCH (10)	22	3	0
DRY DETENTION - POND (177)	1	0	0
DRY DETENTION - UNDERGROUND (178)	4	0	0
DRY SWALE 1 (150)	1	0	0
EXTENDED DETENTION BASIN (15)	198	45	1
EXTENDED DETENTION BASIN W/A SHALLOW MARSH (16)	47	11	0
FILTERRA (215)	201	37	0
GRASSED SWALE (20)	6	3	0
IMBRIUM JELLYFISH (250)	2	0	0
INFILTRATION BASIN/TRENCH (25)	8	1	0
RETENTION BASIN (WET POND) (30)	62	12	2
SAND FILTER (35)	64	16	1
STORMCEPTOR (225)	1	0	0
STORMTREAT (230)	4	0	0
STORMWATER360 (235)	21	3	0
VEGETATED FILTER STRIP (40)	1	0	0
VORTEXSEPARATOR (245)	2	0	0
Total	772	151	4

\* Facilities with either an Active or Accepted status

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County-Owned/Operated Culverts and Pipes Inventoried as of December 31, 2019 and Inspected between January 1, 2019 and December 31, 2019	
Culverts and Pipes Inventoried (miles)	Culverts and Pipes Inspected between January 1, 2019 and December 31, 2019 (miles)
1,174.3	145.43

Each annual report shall provide a summary of actions taken by the permittee to address failure of privately maintained SWM facilities owners to abide by maintenance agreements.

<p>The number of privately-maintained SWM facilities that:</p> <ul style="list-style-type: none"> <li>1) discharge to the MS4,</li> <li>2) needed <i>required</i> maintenance and/or repair based on a previous inspection, and</li> <li>3) are subject to a recorded maintenance agreement,</li> </ul> <p>where the owner(s) failed to perform <i>required</i> maintenance and/or repair as directed by the County.</p>	33
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A second maintenance letter documenting the required punchlist of repairs will be sent the owners of these facilities. Owners will have 30 days from receipt of the letter to contact the County BMP inspector with a plan for repairs and a tentative schedule. The owner will contact the inspector at the start of any maintenance work and at its completion. The facility will be re-inspected after completion of work. If no contact is made or action taken by the owner after the second punchlist, then these items will be sent to the County Attorney's office for legal action.

Each annual report shall include a list of activities including inspections performed and notifications of needed maintenance and repair of stormwater facilities not operated by the permittee as required by Part I.B.2.h)2).

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Facility ID	Action Date	Action Type
BMP01257	1/2/2019	EDUCATION
BMP00619	1/9/2019	EDUCATION
BMP00618	1/9/2019	EDUCATION
BMP00044	1/10/2019	MAINTENANCE INSPECTION
BMP00865	1/10/2019	EDUCATION
BMP00864	1/10/2019	EDUCATION
BMP01930	1/28/2019	INVENTORIED
BMP01931	1/28/2019	INVENTORIED
BMP00915	1/30/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP00111	1/30/2019	EDUCATION
BMP00915	1/30/2019	MAINTENANCE INSPECTION
BMP00805	1/30/2019	EDUCATION
BMP00915	1/31/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP01915	1/31/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP01926	2/4/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP01735	2/4/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP00107	2/5/2019	MAINTENANCE INSPECTION
BMP00107	2/5/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP00106	2/5/2019	MAINTENANCE INSPECTION
BMP00106	2/5/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP00361	2/6/2019	MAINTENANCE INSPECTION
BMP00360	2/6/2019	MAINTENANCE INSPECTION
BMP00107	2/8/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP00106	2/8/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP00805	2/11/2019	MAINTENANCE INSPECTION
BMP01933	2/12/2019	INVENTORIED
BMP01934	2/12/2019	INVENTORIED
BMP01936	2/12/2019	INVENTORIED
BMP00805	2/14/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP01922	2/15/2019	RECEIPT OF CERTIFICATION
BMP01921	2/15/2019	RECEIPT OF CERTIFICATION
BMP01934	2/21/2019	RECEIPT OF CERTIFICATION

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BMP01934	2/21/2019	ACCEPTANCE INSPECTION
BMP01921	2/27/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP01921	2/27/2019	ACCEPTANCE INSPECTION
BMP01922	2/27/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP01922	2/27/2019	ACCEPTANCE INSPECTION
BMP01689	3/4/2019	RECEIPT OF CERTIFICATION
BMP01257	3/5/2019	MAINTENANCE INSPECTION
BMP01689	3/7/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP00176	3/8/2019	MAINTENANCE INSPECTION
BMP00174	3/8/2019	MAINTENANCE INSPECTION
BMP00175	3/8/2019	MAINTENANCE INSPECTION
BMP01812	3/8/2019	MAINTENANCE INSPECTION
BMP00022	3/13/2019	MAINTENANCE INSPECTION
BMP00481	3/13/2019	MAINTENANCE INSPECTION
BMP00480	3/13/2019	MAINTENANCE INSPECTION
BMP00243	3/13/2019	MAINTENANCE INSPECTION
BMP00242	3/13/2019	MAINTENANCE INSPECTION
BMP00020	3/13/2019	MAINTENANCE INSPECTION
BMP01267	3/13/2019	MAINTENANCE INSPECTION
BMP00254	3/13/2019	MAINTENANCE INSPECTION
BMP00021	3/13/2019	MAINTENANCE INSPECTION
BMP01938	3/13/2019	INVENTORIED
BMP01812	3/15/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP00023	3/18/2019	MAINTENANCE INSPECTION
BMP00274	3/18/2019	MAINTENANCE INSPECTION
BMP00031	3/18/2019	MAINTENANCE INSPECTION
BMP00011	3/18/2019	MAINTENANCE INSPECTION
BMP00010	3/18/2019	MAINTENANCE INSPECTION
BMP00030	3/18/2019	MAINTENANCE INSPECTION
BMP00674	3/18/2019	MAINTENANCE INSPECTION
BMP01940	3/21/2019	INVENTORIED
BMP00865	3/25/2019	MAINTENANCE INSPECTION
BMP00864	3/25/2019	MAINTENANCE INSPECTION
BMP01770	3/25/2019	ACCEPTANCE INSPECTION

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BMP01690	3/25/2019	ACCEPTANCE INSPECTION
BMP01768	3/25/2019	ACCEPTANCE INSPECTION
BMP01742	3/26/2019	ACCEPTANCE INSPECTION
BMP01695	3/26/2019	ACCEPTANCE INSPECTION
BMP01742	3/27/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP00388	3/28/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP00388	3/28/2019	MAINTENANCE INSPECTION
BMP00808	3/28/2019	MAINTENANCE INSPECTION
BMP01695	3/28/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP00111	3/29/2019	MAINTENANCE INSPECTION
BMP00106	4/1/2019	MAINTENANCE ACTIVITY
BMP00107	4/1/2019	MAINTENANCE ACTIVITY
BMP00044	4/2/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP00175	4/2/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP00808	4/2/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP00176	4/2/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP00174	4/2/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP00300	4/2/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP01812	4/2/2019	MAINTENANCE INSPECTION
BMP01695	4/3/2019	RECEIPT OF CERTIFICATION
BMP00828	4/3/2019	MAINTENANCE INSPECTION
BMP01215	4/4/2019	MAINTENANCE INSPECTION
BMP01721	4/4/2019	ACCEPTANCE INSPECTION
BMP01216	4/4/2019	MAINTENANCE INSPECTION
BMP01915	4/4/2019	ACCEPTANCE INSPECTION
BMP01214	4/4/2019	MAINTENANCE INSPECTION
BMP01945	4/8/2019	ACCEPTANCE INSPECTION
BMP01721	4/9/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP01361	4/9/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP01360	4/9/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP01139	4/9/2019	MAINTENANCE INSPECTION
BMP01362	4/9/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP00211	4/11/2019	ACCEPTANCE INSPECTION
BMP01942	4/11/2019	INVENTORIED

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BMP01944	4/11/2019	INVENTORIED
BMP01268	4/12/2019	MAINTENANCE INSPECTION
BMP00914	4/12/2019	MAINTENANCE INSPECTION
BMP01266	4/12/2019	MAINTENANCE INSPECTION
BMP00283	4/12/2019	MAINTENANCE INSPECTION
BMP00973	4/12/2019	MAINTENANCE INSPECTION
BMP01221	4/12/2019	MAINTENANCE INSPECTION
BMP00160	4/12/2019	MAINTENANCE INSPECTION
BMP00384	4/15/2019	MAINTENANCE INSPECTION
BMP00043	4/15/2019	MAINTENANCE INSPECTION
BMP01089	4/15/2019	MAINTENANCE INSPECTION
BMP00458	4/15/2019	MAINTENANCE INSPECTION
BMP00680	4/17/2019	MAINTENANCE INSPECTION
BMP00107	4/17/2019	MAINTENANCE INSPECTION
BMP00106	4/17/2019	MAINTENANCE INSPECTION
BMP01922	4/17/2019	ACCEPTANCE INSPECTION
BMP00903	4/17/2019	MAINTENANCE INSPECTION
BMP01088	4/17/2019	MAINTENANCE INSPECTION
BMP00904	4/17/2019	MAINTENANCE INSPECTION
BMP01945	4/18/2019	RECEIPT OF CERTIFICATION
BMP01922	4/18/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP01802	4/18/2019	ACCEPTANCE INSPECTION
BMP01802	4/18/2019	RECEIPT OF CERTIFICATION
BMP00256	4/22/2019	MAINTENANCE INSPECTION
BMP01901	4/23/2019	RECEIPT OF CERTIFICATION
BMP01802	4/24/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP01139	4/24/2019	MAINTENANCE ACTIVITY
BMP01945	4/24/2019	INVENTORIED
BMP01972	4/25/2019	RECEIPT OF CERTIFICATION
BMP01139	4/25/2019	MAINTENANCE INSPECTION
BMP00523	4/25/2019	MAINTENANCE ACTIVITY
BMP01901	5/1/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP01901	5/1/2019	ACCEPTANCE INSPECTION
BMP00178	5/1/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION

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BMP01802	5/2/2019	RECEIPT OF CERTIFICATION
BMP00174	5/3/2019	EDUCATION
BMP01946	5/3/2019	INVENTORIED
BMP01802	5/7/2019	ACCEPTANCE INSPECTION
BMP01710	5/9/2019	RECEIPT OF CERTIFICATION
BMP01687	5/9/2019	RECEIPT OF CERTIFICATION
BMP01779	5/10/2019	MAINTENANCE INSPECTION
BMP01266	5/13/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP00283	5/13/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP01687	5/13/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP00973	5/13/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP00914	5/13/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP01687	5/14/2019	ACCEPTANCE INSPECTION
BMP01689	5/14/2019	ACCEPTANCE INSPECTION
BMP01689	5/14/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP01710	5/15/2019	ACCEPTANCE INSPECTION
BMP00827	5/17/2019	MAINTENANCE INSPECTION
BMP01687	5/20/2019	RECEIPT OF CERTIFICATION
BMP00977	5/21/2019	MAINTENANCE INSPECTION
BMP01855	5/21/2019	RECEIPT OF CERTIFICATION
BMP00976	5/21/2019	MAINTENANCE INSPECTION
BMP01689	5/21/2019	RECEIPT OF CERTIFICATION
BMP00975	5/21/2019	MAINTENANCE INSPECTION
BMP00975	5/23/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP00976	5/23/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP00977	5/23/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP01947	5/24/2019	INVENTORIED
BMP01948	5/24/2019	INVENTORIED
BMP00576	5/25/2019	MAINTENANCE INSPECTION
BMP00178	5/29/2019	MAINTENANCE INSPECTION
BMP01687	5/30/2019	ACCEPTANCE INSPECTION
BMP00384	5/31/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP00674	5/31/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP00680	5/31/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION

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BMP00176	5/31/2019	EDUCATION
BMP00160	5/31/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP00175	5/31/2019	EDUCATION
BMP01689	6/3/2019	ACCEPTANCE INSPECTION
BMP01355	6/4/2019	MAINTENANCE INSPECTION
BMP00178	6/4/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP00459	6/4/2019	MAINTENANCE INSPECTION
BMP00708	6/4/2019	MAINTENANCE INSPECTION
BMP00811	6/4/2019	MAINTENANCE INSPECTION
BMP00010	6/6/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP00011	6/6/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP01855	6/6/2019	ACCEPTANCE INSPECTION
BMP00035	6/10/2019	MAINTENANCE INSPECTION
BMP00914	6/10/2019	MAINTENANCE INSPECTION
BMP01949	6/10/2019	INVENTORIED
BMP01950	6/10/2019	INVENTORIED
BMP01952	6/10/2019	INVENTORIED
BMP01721	6/12/2019	RECEIPT OF CERTIFICATION
BMP01719	6/12/2019	RECEIPT OF CERTIFICATION
BMP00010	6/12/2019	EDUCATION
BMP01279	6/12/2019	OWNER INSPECTION
BMP01278	6/12/2019	OWNER INSPECTION
BMP01721	6/13/2019	ACCEPTANCE INSPECTION
BMP01719	6/13/2019	ACCEPTANCE INSPECTION
BMP01719	6/13/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP01901	6/13/2019	ACCEPTANCE INSPECTION
BMP00619	6/14/2019	MAINTENANCE INSPECTION
BMP00618	6/14/2019	MAINTENANCE INSPECTION
BMP01974	6/17/2019	RECEIPT OF CERTIFICATION
BMP01978	6/17/2019	RECEIPT OF CERTIFICATION
BMP01973	6/17/2019	RECEIPT OF CERTIFICATION
BMP00035	6/17/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP01982	6/17/2019	RECEIPT OF CERTIFICATION
BMP01976	6/17/2019	RECEIPT OF CERTIFICATION

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BMP01979	6/17/2019	RECEIPT OF CERTIFICATION
BMP01980	6/17/2019	RECEIPT OF CERTIFICATION
BMP01981	6/17/2019	RECEIPT OF CERTIFICATION
BMP01953	6/17/2019	INVENTORIED
BMP01955	6/17/2019	INVENTORIED
BMP01956	6/17/2019	INVENTORIED
BMP00458	6/18/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP00811	6/18/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP01266	6/18/2019	MAINTENANCE INSPECTION
BMP00973	6/18/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP00903	6/18/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP01089	6/18/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP00904	6/18/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP01949	6/19/2019	RECEIPT OF CERTIFICATION
BMP01950	6/19/2019	RECEIPT OF CERTIFICATION
BMP00618	6/20/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP00619	6/20/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP01266	6/20/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP00725	6/21/2019	MAINTENANCE INSPECTION
BMP00178	6/21/2019	EDUCATION
BMP00975	6/21/2019	EDUCATION
BMP00932	6/21/2019	MAINTENANCE INSPECTION
BMP00790	6/25/2019	MAINTENANCE INSPECTION
BMP00121	6/25/2019	RETIREMENT
BMP01422	6/25/2019	MAINTENANCE INSPECTION
BMP00792	6/25/2019	MAINTENANCE INSPECTION
BMP00791	6/25/2019	MAINTENANCE INSPECTION
BMP00577	6/25/2019	MAINTENANCE INSPECTION
BMP00576	6/25/2019	OWNER INSPECTION
BMP00575	6/25/2019	OWNER INSPECTION
BMP00211	6/26/2019	RECEIPT OF CERTIFICATION
BMP00891	6/26/2019	RETIREMENT
BMP01981	6/27/2019	ACCEPTANCE INSPECTION
BMP01980	6/27/2019	ACCEPTANCE INSPECTION

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BMP01982	6/27/2019	ACCEPTANCE INSPECTION
BMP01973	6/27/2019	ACCEPTANCE INSPECTION
BMP01979	6/27/2019	ACCEPTANCE INSPECTION
BMP01978	6/27/2019	ACCEPTANCE INSPECTION
BMP01976	6/27/2019	ACCEPTANCE INSPECTION
BMP01974	6/27/2019	ACCEPTANCE INSPECTION
BMP00407	6/28/2019	MAINTENANCE ACTIVITY
BMP00855	7/1/2019	MAINTENANCE INSPECTION
BMP01367	7/1/2019	MAINTENANCE INSPECTION
BMP00046	7/1/2019	MAINTENANCE INSPECTION
BMP01382	7/2/2019	OWNER INSPECTION
BMP01380	7/2/2019	OWNER INSPECTION
BMP01258	7/2/2019	OWNER INSPECTION
BMP01262	7/2/2019	OWNER INSPECTION
BMP01389	7/2/2019	OWNER INSPECTION
BMP01386	7/2/2019	OWNER INSPECTION
BMP01385	7/2/2019	OWNER INSPECTION
BMP01379	7/2/2019	OWNER INSPECTION
BMP01260	7/2/2019	OWNER INSPECTION
BMP00555	7/2/2019	MAINTENANCE INSPECTION
BMP01390	7/2/2019	OWNER INSPECTION
BMP01388	7/2/2019	OWNER INSPECTION
BMP01261	7/2/2019	OWNER INSPECTION
BMP01387	7/2/2019	OWNER INSPECTION
BMP01383	7/2/2019	OWNER INSPECTION
BMP01259	7/2/2019	OWNER INSPECTION
BMP01384	7/2/2019	OWNER INSPECTION
BMP01381	7/2/2019	OWNER INSPECTION
BMP01970	7/3/2019	RECEIPT OF CERTIFICATION
BMP00391	7/3/2019	MAINTENANCE INSPECTION
BMP00390	7/3/2019	MAINTENANCE INSPECTION
BMP01680	7/6/2019	RECEIPT OF CERTIFICATION
BMP00708	7/8/2019	MAINTENANCE INSPECTION
BMP00390	7/8/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION

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BMP00391	7/8/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP01971	7/8/2019	RECEIPT OF CERTIFICATION
BMP00122	7/8/2019	RETIREMENT
BMP00855	7/10/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP01367	7/10/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP00036	7/10/2019	MAINTENANCE INSPECTION
BMP01910	7/10/2019	RECEIPT OF CERTIFICATION
BMP00046	7/10/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP01712	7/12/2019	RECEIPT OF CERTIFICATION
BMP01711	7/12/2019	RECEIPT OF CERTIFICATION
BMP00010	7/15/2019	MAINTENANCE INSPECTION
BMP01966	7/15/2019	INVENTORIED
BMP01967	7/15/2019	INVENTORIED
BMP01968	7/15/2019	INVENTORIED
BMP01969	7/15/2019	INVENTORIED
BMP01947	7/16/2019	RECEIPT OF CERTIFICATION
BMP01808	7/16/2019	RECEIPT OF CERTIFICATION
BMP01740	7/16/2019	ACCEPTANCE INSPECTION
BMP01703	7/16/2019	ACCEPTANCE INSPECTION
BMP01260	7/17/2019	OWNER INSPECTION
BMP01259	7/17/2019	OWNER INSPECTION
BMP01258	7/17/2019	OWNER INSPECTION
BMP01262	7/17/2019	OWNER INSPECTION
BMP01261	7/17/2019	OWNER INSPECTION
BMP01680	7/18/2019	ACCEPTANCE INSPECTION
BMP00485	7/19/2019	RETIREMENT
BMP00259	7/19/2019	MAINTENANCE INSPECTION
BMP00037	7/19/2019	MAINTENANCE INSPECTION
BMP00484	7/19/2019	RETIREMENT
BMP00446	7/19/2019	RETIREMENT
BMP00517	7/22/2019	MAINTENANCE INSPECTION
BMP00285	7/22/2019	MAINTENANCE INSPECTION
BMP00806	7/22/2019	MAINTENANCE INSPECTION
BMP01971	7/23/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION

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BMP01970	7/23/2019	INVENTORIED
BMP01971	7/23/2019	INVENTORIED
BMP00555	7/24/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP01178	7/24/2019	MAINTENANCE INSPECTION
BMP01972	7/24/2019	ACCEPTANCE INSPECTION
BMP01179	7/24/2019	MAINTENANCE INSPECTION
BMP00580	7/24/2019	MAINTENANCE INSPECTION
BMP00700	7/24/2019	MAINTENANCE INSPECTION
BMP00701	7/24/2019	MAINTENANCE INSPECTION
BMP01972	7/24/2019	INVENTORIED
BMP01970	7/25/2019	ACCEPTANCE INSPECTION
BMP01910	7/26/2019	ACCEPTANCE INSPECTION
BMP01711	7/30/2019	ACCEPTANCE INSPECTION
BMP01712	7/30/2019	ACCEPTANCE INSPECTION
BMP01973	7/31/2019	INVENTORIED
BMP01974	7/31/2019	INVENTORIED
BMP01975	7/31/2019	INVENTORIED
BMP01976	7/31/2019	INVENTORIED
BMP01977	7/31/2019	INVENTORIED
BMP01978	7/31/2019	INVENTORIED
BMP01979	7/31/2019	INVENTORIED
BMP01980	7/31/2019	INVENTORIED
BMP01981	7/31/2019	INVENTORIED
BMP01982	7/31/2019	INVENTORIED
BMP01947	8/1/2019	ACCEPTANCE INSPECTION
BMP01808	8/5/2019	ACCEPTANCE INSPECTION
BMP00269	8/8/2019	MAINTENANCE INSPECTION
BMP01808	8/9/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP01983	8/14/2019	RECEIPT OF CERTIFICATION
BMP01983	8/20/2019	INVENTORIED
BMP00915	8/21/2019	MAINTENANCE INSPECTION
BMP00270	8/21/2019	MAINTENANCE INSPECTION
BMP00245	8/21/2019	MAINTENANCE INSPECTION
BMP01985	8/21/2019	INVENTORIED

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BMP00517	8/27/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP00701	8/27/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP00700	8/27/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP00037	8/27/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP00036	8/27/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP00580	8/27/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP01047	8/27/2019	MAINTENANCE INSPECTION
BMP01983	8/27/2019	ACCEPTANCE INSPECTION
BMP00245	8/28/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP01797	8/28/2019	MAINTENANCE INSPECTION
BMP00270	8/28/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP01719	8/29/2019	ACCEPTANCE INSPECTION
BMP00471	9/3/2019	RETIREMENT
BMP00466	9/3/2019	RETIREMENT
BMP00752	9/3/2019	RETIREMENT
BMP00269	9/3/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP00472	9/3/2019	RETIREMENT
BMP01047	9/3/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP01236	9/4/2019	OWNER INSPECTION
BMP01679	9/4/2019	OWNER INSPECTION
BMP00597	9/4/2019	MAINTENANCE INSPECTION
BMP01677	9/4/2019	OWNER INSPECTION
BMP00711	9/4/2019	EDUCATION
BMP01678	9/4/2019	OWNER INSPECTION
BMP01986	9/5/2019	INVENTORIED
BMP01987	9/5/2019	INVENTORIED
BMP01988	9/5/2019	INVENTORIED
BMP01145	9/6/2019	MAINTENANCE INSPECTION
BMP00726	9/6/2019	MAINTENANCE INSPECTION
BMP01808	9/6/2019	ACCEPTANCE INSPECTION
BMP00549	9/6/2019	MAINTENANCE INSPECTION
BMP01144	9/6/2019	MAINTENANCE INSPECTION
BMP00036	9/9/2019	EDUCATION
BMP00103	9/9/2019	MAINTENANCE INSPECTION

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BMP00269	9/9/2019	EDUCATION
BMP01977	9/11/2019	RECEIPT OF CERTIFICATION
BMP00861	9/11/2019	MAINTENANCE INSPECTION
BMP00723	9/11/2019	MAINTENANCE INSPECTION
BMP01144	9/11/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP00549	9/11/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP01179	9/11/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP01975	9/11/2019	RECEIPT OF CERTIFICATION
BMP00919	9/11/2019	MAINTENANCE INSPECTION
BMP00716	9/16/2019	MAINTENANCE INSPECTION
BMP01071	9/16/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP00203	9/16/2019	MAINTENANCE INSPECTION
BMP00718	9/16/2019	MAINTENANCE INSPECTION
BMP00282	9/17/2019	MAINTENANCE INSPECTION
BMP00408	9/17/2019	MAINTENANCE INSPECTION
BMP00352	9/17/2019	MAINTENANCE INSPECTION
BMP00351	9/17/2019	MAINTENANCE INSPECTION
BMP01271	9/17/2019	MAINTENANCE INSPECTION
BMP01975	9/18/2019	ACCEPTANCE INSPECTION
BMP01977	9/18/2019	ACCEPTANCE INSPECTION
BMP01742	9/18/2019	RECEIPT OF CERTIFICATION
BMP01742	9/19/2019	ACCEPTANCE INSPECTION
BMP01971	9/19/2019	RECEIPT OF CERTIFICATION
BMP01817	9/21/2019	MAINTENANCE INSPECTION
BMP01741	9/25/2019	ACCEPTANCE INSPECTION
BMP00619	9/26/2019	ACCEPTANCE INSPECTION
BMP01741	9/26/2019	RECEIPT OF CERTIFICATION
BMP00618	9/30/2019	MAINTENANCE INSPECTION
BMP00619	9/30/2019	MAINTENANCE INSPECTION
BMP00269	10/1/2019	MAINTENANCE INSPECTION
BMP00270	10/1/2019	MAINTENANCE INSPECTION
BMP01971	10/1/2019	ACCEPTANCE INSPECTION
BMP01680	10/1/2019	MAINTENANCE INSPECTION
BMP00037	10/1/2019	MAINTENANCE INSPECTION

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BMP01089	10/1/2019	MAINTENANCE INSPECTION
BMP00036	10/1/2019	MAINTENANCE INSPECTION
BMP01695	10/2/2019	ACCEPTANCE INSPECTION
BMP00804	10/3/2019	MAINTENANCE INSPECTION
BMP00183	10/3/2019	MAINTENANCE INSPECTION
BMP00184	10/3/2019	MAINTENANCE INSPECTION
BMP01912	10/4/2019	RECEIPT OF CERTIFICATION
BMP00455	10/7/2019	MAINTENANCE INSPECTION
BMP01207	10/7/2019	OWNER INSPECTION
BMP01206	10/7/2019	OWNER INSPECTION
BMP00952	10/7/2019	MAINTENANCE INSPECTION
BMP01201	10/7/2019	OWNER INSPECTION
BMP01203	10/7/2019	OWNER INSPECTION
BMP01205	10/7/2019	OWNER INSPECTION
BMP01200	10/7/2019	OWNER INSPECTION
BMP01202	10/7/2019	OWNER INSPECTION
BMP01204	10/7/2019	OWNER INSPECTION
BMP00249	10/8/2019	MAINTENANCE INSPECTION
BMP00455	10/8/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP00717	10/8/2019	MAINTENANCE INSPECTION
BMP01054	10/11/2019	MAINTENANCE INSPECTION
BMP00327	10/11/2019	MAINTENANCE INSPECTION
BMP00839	10/11/2019	MAINTENANCE INSPECTION
BMP01055	10/11/2019	MAINTENANCE INSPECTION
BMP01989	10/11/2019	MAINTENANCE INSPECTION
BMP01989	10/14/2019	INVENTORIED
BMP00356	10/15/2019	MAINTENANCE INSPECTION
BMP01071	10/15/2019	MAINTENANCE ACTIVITY
BMP01989	10/16/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP00861	10/21/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP00282	10/21/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP01271	10/21/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP01949	10/21/2019	ACCEPTANCE INSPECTION
BMP01950	10/21/2019	ACCEPTANCE INSPECTION

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BMP01071	10/23/2019	MAINTENANCE INSPECTION
BMP01179	10/23/2019	MAINTENANCE INSPECTION
BMP01991	10/23/2019	INVENTORIED
BMP01992	10/23/2019	INVENTORIED
BMP01055	10/24/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP01831	10/24/2019	RECEIPT OF CERTIFICATION
BMP00327	10/24/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP01054	10/24/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP01089	10/24/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP00839	10/24/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP01956	10/24/2019	RECEIPT OF CERTIFICATION
BMP01912	10/29/2019	ACCEPTANCE INSPECTION
BMP00249	10/31/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP00919	10/31/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP00356	10/31/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP01480	11/3/2019	RECEIPT OF CERTIFICATION
BMP01956	11/4/2019	ACCEPTANCE INSPECTION
BMP01831	11/5/2019	ACCEPTANCE INSPECTION
BMP00239	11/6/2019	MAINTENANCE INSPECTION
BMP00408	11/6/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP00716	11/6/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP00351	11/7/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP00240	11/7/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP00718	11/7/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP00240	11/8/2019	MAINTENANCE INSPECTION
BMP00279	11/8/2019	MAINTENANCE INSPECTION
BMP00479	11/8/2019	MAINTENANCE INSPECTION
BMP00047	11/8/2019	MAINTENANCE INSPECTION
BMP01339	11/8/2019	MAINTENANCE INSPECTION
BMP00478	11/8/2019	MAINTENANCE INSPECTION
BMP00784	11/8/2019	MAINTENANCE INSPECTION
BMP00783	11/8/2019	MAINTENANCE INSPECTION
BMP00249	11/11/2019	MAINTENANCE ACTIVITY
BMP00240	11/12/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION

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BMP00282	11/14/2019	EDUCATION
BMP01993	11/14/2019	RECEIPT OF CERTIFICATION
BMP01993	11/14/2019	INVENTORIED
BMP01994	11/14/2019	INVENTORIED
BMP01071	11/15/2019	MAINTENANCE INSPECTION
BMP00861	11/15/2019	MAINTENANCE INSPECTION
BMP00282	11/18/2019	MAINTENANCE INSPECTION
BMP01997	11/18/2019	INVENTORIED
BMP01480	11/19/2019	ACCEPTANCE INSPECTION
BMP01838	11/20/2019	RECEIPT OF CERTIFICATION
BMP01764	11/27/2019	RECEIPT OF CERTIFICATION
BMP01765	11/27/2019	RECEIPT OF CERTIFICATION
BMP01766	11/27/2019	RECEIPT OF CERTIFICATION
BMP01188	12/2/2019	OWNER INSPECTION
BMP01186	12/2/2019	OWNER INSPECTION
BMP01189	12/2/2019	OWNER INSPECTION
BMP01187	12/2/2019	OWNER INSPECTION
BMP01838	12/4/2019	ACCEPTANCE INSPECTION
BMP01278	12/4/2019	OWNER INSPECTION
BMP01279	12/4/2019	OWNER INSPECTION
BMP01277	12/4/2019	OWNER INSPECTION
BMP01998	12/10/2019	INVENTORIED
BMP01999	12/10/2019	INVENTORIED
BMP02000	12/10/2019	INVENTORIED
BMP00783	12/11/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION
BMP01339	12/11/2019	PUNCHLIST DEVELOPMENT AND DISTRIBUTION

The MS4 service area map including outfalls and information included in Part I.B.2.h)3) shall be submitted no later than 18 months after the effective date of this state permit. The information shall be submitted as an electronic file in one of the following formats shapefile, geodatabase, .xls, .xlsx, .csv, .mdx, .dbf, delimited text, XML, or other file approved by the Department.

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The requested information was delivered to DEQ on September 27, 2016.

The fourth annual report shall include an updated list of all information requested in Part 1.B.2.h)5.

Noted.

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**PART I.B.2.i**  
**MS4 PROGRAM IMPLEMENTATION**  
**COUNTY FACILITIES**

There are no Specific Reporting Requirements associated with this part of the MS4 Permit for this permit year.

# HENRICO COUNTY MS4 PROGRAM PLAN

## PART I.B.2.j

### MS4 PROGRAM IMPLEMENTATION PUBLIC EDUCATION / PARTICIPATION

Each annual report shall include a list of permittee public outreach and education activities and the estimated number of individuals reached through the activities. An evaluation of program effectiveness, as outlined in the MS4 Program Plan with recommendations for future changes shall also be included.

Public Outreach and Education Goals and Activities			
Department / Division	Activity	Date	# of Individuals / Households Reached
Goal: Promote, publicize, and facilitate public reporting of the presence of illicit discharges or improper disposal of materials into the MS4			
DPW - EESD	Illicit Discharge Reporting	01/01/2019 - 12/31/2019	144
DPW - EESD	Maude Trevett Elementary School Career Day – Stormwater education discussion with students; education on spill reporting; spill notification rulers and litter/MS4 coloring books were handed out	03/22/2019	33
DPW – EESD & Maintenance	Lakeside Cookout – Attendees were educated on proper pet waste disposal, leaf disposal, car washing, mosquitoes, and Henrico’s spill reporting website. Pet waste bag dispensers and spill notification rulers were handed out.	03/29/2019	350
DPW - EESD	Henrico County Job Fair – Attendees were educated on	03/30/2019	115

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	Henrico's spill reporting website. Spill notification rulers were handed out.		
DPW – EESD & Maintenance	Henrico County Spring Energy Fair & Earth Day Celebration – Attendees were educated on proper pet disposal, leaf disposal, car washing, mosquitoes, and Henrico's spill reporting website. Pet waste bag dispensers, spill notification rulers, and spill notification reusable straws were handed out.	04/22/2019	100
DPW - EESD	Environmental educational mailing sent to residents as a result of a complaint educating them on proper pet waste disposal, trash, and landscape debris disposal, pollution prevention and an only rain down the drain message.	07/17/2019	395
DPW - EESD	Henrico County Fall Energy Fair– Attendees were educated on proper pet disposal, car washing, mosquitoes, and Henrico's spill reporting website. Pet waste bag dispensers, spill notification rulers, and spill notification reusable straws were handed out.	10/04/2019	225
DPW - EESD	Community Day– Attendees were educated on proper pet disposal, car washing, mosquitoes, and Henrico's spill reporting website. Pet waste bag dispensers, spill notification rulers, and spill notification reusable straws were handed	10/19/2019	800

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	out.		
DPW- Maintenance & DPU	Leaf insert sent in DPU utility bill	Multiple	98,000
Fire	MS4 Education Posters in stations in view of public	Always	Unknown
Goal: Continue to promote individual and group involvement in local water quality improvement initiatives including the promotion of local restoration and clean-up projects, programs, groups, meetings and other opportunities for public involvement			
Henricopolis	Rain Barrel Outreach	January 1, 2019 – December 31, 2019	8
Henricopolis	Soil Test Voucher Program	January 1, 2019 – December 31, 2019	1463
DPU – KHB	Board of Supervisors Town Hall – Litter & Recycling	02/28/2019	20
DPU – KHB	Neighborhood/Social Cleanup – Highland Springs HS	05/18/2019	18
DPU – KHB	James River Cleanup	09/14/19	30
DPU – KHB	Jordan's Branch Cleanup	09/28/2019 11/09/2019	25
DPW - EESD	Septic Educational Mailings Sent in 2019	Multiple	813
Goal: Develop an outreach program with public and private golf courses located within Henrico County that discharge to the permittee's MS4 that would encourage implementation of integrated management practice (IMP) plans and techniques to reduce runoff of fertilizer and pesticides			
Rec & Parks	MS4 Outreach for Private Golf Course Owners / Operators	Multiple	5
Goal: Promote, publicize, and facilitate the proper management and disposal of used oil and household hazardous wastes			
DPU - Admin	Household Hazardous Waste Program – social media	02/19/2019 06/18/2019	16,112

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	campaign	07/03/2019 09/04/2019	
DPU - Admin	Household Hazardous Waste Video - YouTube	Various	642
Fire	MS4 educational posters in all stations	Always	Unknown
Goal: Promote and publicize the proper disposal of pet waste and household yard waste			
DPW - EESD	Maude Trevett Elementary School Career Day – Stormwater education discussion with students; education on spill reporting; spill notification rulers and litter/MS4 coloring books were handed out	03/22/2019	33
DPW – EESD & Maintenance	Lakeside Cookout – Attendees were educated on proper pet waste disposal, leaf disposal, car washing, mosquitoes, and Henrico’s spill reporting website. Pet waste bag dispensers and spill notification rulers were handed out.	03/29/2019	350
DPW – EESD & Maintenance	Henrico County Spring Energy Fair & Earth Day Celebration – Attendees were educated on proper pet disposal, leaf disposal, car washing, mosquitoes, and Henrico’s spill reporting website. Pet waste bag dispensers, spill notification rulers, and spill notification reusable straws were handed out.	04/22/2019	100
DPW – EESD & Maintenance	Celebrate Varina– Attendees were educated on proper pet disposal, leaf disposal, car washing, mosquitoes, and	06/01/2019	700

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	Henrico's spill reporting website. Pet waste bag dispensers, spill notification rulers, and spill notification reusable straws were handed out.		
DPW - EESD	Environmental educational mailing sent to residents as a result of a complaint educating them on proper pet waste disposal, trash, and landscape debris disposal, pollution prevention and an only rain down the drain message.	07/17/2019	395
DPW - EESD	Henrico County Fall Energy Fair– Attendees were educated on proper pet disposal, car washing, mosquitoes, and Henrico's spill reporting website. Pet waste bag dispensers, spill notification rulers, and spill notification reusable straws were handed out.	10/04/2019	225
DPW - EESD	Community Day– Attendees were educated on proper pet disposal, car washing, mosquitoes, and Henrico's spill reporting website. Pet waste bag dispensers, spill notification rulers, and spill notification reusable straws were handed out.	10/19/2019	800
DPU – KHB	Environmental Educators Workshop – all KHB education topics	Various	13
DPU – KHB	Educational booth at events – recycling education, litter prevention, pet waste disposal, waste disposal	Various	585

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Community Revitalization	59 neighborhood meetings to discuss zoning and environmental ordinances (grass & weeds, trash & debris, inoperative vehicles, outside storage, etc...). The meetings are also used to promote opportunities such as volunteer assistance program, enterprise zones, and CDBG fund projects.	Multiple	704
DPW-Maintenance & DPU	Leaf insert sent in DPU utility bill	Multiple	98,000
Police	Curb Your Dog brochure promoting the proper disposal of pet waste	Multiple	100
Goal: Promote and publicize the use of the permittee's litter prevention program			
Henricopolis	K-12 Classroom Programs- environmental education sessions with a focus on non-point source pollution, litter and pet waste management.	January 1, 2019 – December 31, 2019	Approx. 3,800 Henrico County Students
DPW - EESD	Maude Trevett Elementary School Career Day – Stormwater education discussion with students; education on spill reporting; spill notification rulers and litter/MS4 coloring books were handed out	03/22/2019	33
DPU – KHB	Board of Supervisors Town Hall – Litter & Recycling	02/28/2019	20
DPU – KHB	Lakeside Cookout – Litter & Recycling	03/28/2019	50
DPU – KHB	Neighborhood/Social Cleanup – Highland Springs HS	05/18/2019	18
DPU – KHB	James River Cleanup	09/14/19	30

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DPU – KHB	JR Storytime – Varina Library	09/18/2019	17
DPU – KHB	Environmental Fair – Varina Library	09/21/2019	30
DPU – KHB	Jordan’s Branch Cleanup	09/28/2019	25
		11/09/2019	
DPU – KHB	Energy Fair	10/04/2019	200
DPU – KHB	Jonathan Austin Assembly	10/11/2019	300
DPU – KHB	Dorey Park Farmers Market	10/12/2019	50
DPU – KHB	Mountain Film Festival	11/15/2019	50
DPU – KHB	Educational booth at events – recycling education, litter prevention, pet waste disposal, waste disposal	Various	585
DPU – KHB	Because We Care Program	Various	8
DPU – KHB	SNAPs Program	Various	34
DPU – KHB	School presentations to classes on litter prevention/recycling	Various	1,926
DPU – KHB	BWISE Teacher Training	Various	102
DPU – KHB	BWISE Field	Various	1,327
DPU – KHB	Environmental Educators Workshop – all KHB education topics	Various	13
DPU – KHB	Social Media Video – Various Topics	Various	60,637
DPU – KHB	WOW Program	Various	100
Goal: Promote and publicize methods for residential car washing that minimize water quality impacts			
DPW – EESD & Maintenance	Lakeside Cookout – Attendees were educated on proper pet waste disposal, leaf disposal, car washing, mosquitoes, and Henrico’s spill reporting website. Pet waste bag dispensers and spill notification rulers were handed out.	03/29/2019	350
DPW – EESD &	Henrico County Spring Energy Fair & Earth Day	04/22/2019	100

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Maintenance	Celebration – Attendees were educated on proper pet disposal, leaf disposal, car washing, mosquitoes, and Henrico’s spill reporting website. Pet waste bag dispensers, spill notification rulers, and spill notification reusable straws were handed out.		
DPW - EESD	Henrico County Fall Energy Fair– Attendees were educated on proper pet disposal, car washing, mosquitoes, and Henrico’s spill reporting website. Pet waste bag dispensers, spill notification rulers, and spill notification reusable straws were handed out.	10/04/2019	225
DPW - EESD	Community Day– Attendees were educated on proper pet disposal, car washing, mosquitoes, and Henrico’s spill reporting website. Pet waste bag dispensers, spill notification rulers, and spill notification reusable straws were handed out.	10/19/2019	800
Goal: Promote and publicize the proper use, application, and disposal of pesticides, herbicides, and fertilizers by public, commercial, and private applicators and distributors			
Extension Service	Spray Drift Demonstration for Category 90 (Agricultural commodity production) <i>Four-Rivers Agriculture Conference</i>	1/8/19	34
Extension Service	Pesticide Ornamental Update for Commercial Pesticide Applicator	1/9/19	52

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	Recertification for Categories 3A (Ornamentals), 3B (Turf) and 60 (Registered Tech) <i>Southern States Pesticide Recertification Program</i>		
Extension Service	“Environmentally-responsible Lawn Care,” Training Session for Henrico Extension Master Gardeners	1/29/19	30
Extension Service	Initial Commercial Pesticide Applicator Certification Workshop - Core Review for Category 60 (Registered Tech) <i>Virginia Turfgrass Council Mid Atlantic Turf Expo</i>	1/31/19	30
Extension Service	Commercial Pesticide Applicator Recertification Workshop for Categories 3A (Ornamentals), 3B (Turf), 8 (Public Health), and 60 (Registered Tech) <i>CVNLA Short Course</i>	2/15/19	92
Extension Service	Spray Drift Demonstration for Category 90 (Agricultural commodity production) <i>Richmond Area Vegetable Growers</i>	2/21/19	8
Extension Service	Training class for Henrico Master Gardeners, Pesticide Safety	3/5/19	24
Extension Service	“Good Bug, Bad Bug” Presentation to Richmond City Community Gardeners	3/23/19	12
Extension Service	“Environmentally-responsible Lawn Care,” Training Session for Hanover Extension Master Gardeners	3/26/19	16
Extension Service	“Implementing the SMART Lawns Program in Henrico County,” Advanced Training	4/10/19	14

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	Workshop for Henrico Extension Master Gardeners		
Extension Service	Initial Commercial Pesticide Applicator Certification Training - Core Review for Private Applicator Exam <i>Patrick Henry HS Agriculture Students</i>	4/23/19	6
Extension Service	Pesticide Legal Update for Commercial Pesticide Applicator Recertification for Categories 3A (Ornamentals) and 60 (Registered Tech) <i>Arborscapes Employees and Guests</i>	10/4/19	17
Extension Service	"Environmentally-responsible Lawn Care," Training Session for Richmond City Extension Master Gardeners	11/6/19	20
Extension Service	Private Pesticide Applicator Recertification Workshops – 2 sessions	12/3/19 12/5/19	60
Extension Service	Initial Commercial Pesticide Applicator Certification Workshop - Core Review for Category 3B (Turf) <i>Hanover County Employees</i>	12/16/19	9
Goal: Encourage private property owners to implement voluntary stormwater management techniques and/or retrofits			
Henricopolis	Virginia Conservation Assistance Program	Jan 1, 2019 – December 31, 2019	56 site visits

### Evaluations of Program Effectiveness

#### Public Utilities

DPU believes their outreach program is effective in getting the word out to our

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citizens. We utilize many different methods to ensure our residents are notified. We utilize social media, we hold programs within our schools, and we attend neighborhood/community functions.

### Fire

Each station averages 4 citizens a day that interact at the 20 county stations. The posters are in locations and of a bright nature that they should capture the attention of those visiting the facilities. It would be expected that they would read the poster and retain the important nature of the program.

### Recreation and Parks

Henrico County Recreation & Parks connected with the private and public golf courses in an effort to educate Golf Directors and Superintendents on best practices and nutrient management plans. As a result of the outreach, information packets were extended to the following golf courses:

The Crossings Golf Club;  
Glenwood Golf Club;  
Jefferson Lakeside Country Club;  
The Dominion Club; and  
Country Club of Virginia.

The outreach effort reached approximately 5 individuals and we believe the information was well received. This was a great opportunity to connect with local golf courses and establish a positive relationship for future educational sessions and communication. Program goals are listed below:

- raise awareness about the importance of implementing a nutrient management plan;
- discuss best practices for golf courses; and
- answer questions pertaining to the county's MS4 permit.

### Recommendations for Future Changes

Currently, we have no recommendations for future changes.

### Extension Service

Pesticide Applicator Recertification Sessions

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During 2019, 161 commercial pesticide applicators were trained for recertification by the Henrico Extension Office. A total of 161 commercial applicators gained additional knowledge in pesticide safety and Integrated Pest Management (IPM) practices related to ornamental plants and turf. As a result of this pesticide safety education, 161 commercial applicators successfully maintained their pesticide applicator certification to legally apply pesticides in Virginia.

Additionally, during 2019, 102 private certification pesticide applicators were trained for recertification by the Henrico Extension Office. A total of 102 private applicators gained additional knowledge in pesticide safety and Integrated Pest Management (IPM) practices related to ornamental plants and crops. As a result of this pesticide safety education, 102 private category applicators successfully maintained their pesticide applicator certification to legally apply pesticides in Virginia.

### **Initial Pesticide Applicator Certification Sessions**

During 2019, 39 individuals seeking commercial pesticide applicator status were trained for initial certification testing by the Henrico Extension Office through 2 different training programs. A total of 39 individuals seeking commercial pesticide applicator certification gained knowledge in pesticide safety and Integrated Pest Management (IPM) practices related to ornamental plants and turf.

During 2019, 6 individuals seeking private pesticide applicator status were trained for initial certification testing by the Henrico Extension Office through training programs. A total of 6 individuals seeking private pesticide applicator certification gained knowledge in pesticide safety and Integrated Pest Management (IPM) practices related to core pesticide application practices.

### **SMART Lawns Program**

A total of forty-seven (47) Henrico households with residential lawns were enrolled in the Henrico Extension SMART Lawns program in 2019. Sixty-three (63) soil samples were submitted, and forty-seven (47) urban

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nutrient management plans were written and distributed to program participants. A total of 290,304 square feet (6.66 acres) of residential turf in Henrico County were brought under a nutrient management plan that is in full compliance with DCR urban nutrient management planning criteria.

### **Plant Health Diagnostics**

During 2019, the Henrico Extension Office received 331 samples for either problem diagnosis and management recommendations or simple identification. Of the samples, 212 were pest or disease related. Integrated pest management (IPM) recommendations were given for sixty-nine (33%) of these samples, resulting in the promotion of lower-risk pest control products and/or non-chemical pest management strategies.

### **Public Works**

DPW Road Maintenance believes the outreach programs are effective in getting information out to our citizens. Various methods are used to notify as many citizens as possible, with the majority of outreach coming from community events and individual notification.

Leaf collection program effectiveness is assessed annually by the total number of customer-placed vacuum leaf orders received and completed, the total number of violation orders processed and completed, and customer feedback. Recommendations for future changes will be based on the assessment of program effectiveness and updates will be made as necessary to improve the program overall.

Henrico County employs ARC to remove litter from County right-of-ways. The pick-up is performed on a daily basis, and progress is tracked in pounds of litter removed as well as the number of bags of litter removed. ARC is also used bi-weekly on the West and East End maintenance yards to reduce floatables from entering the MS4. Program effectiveness is evaluated based on the pounds of litter removed, as this decreases the quantity of floatables entering the MS4. Between 01/01/2019 and 12/31/2019, ARC removed 334,282.3 pounds or 11,142.7 bags of litter and 230 tires from county right-of-ways and maintenance facilities.

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Each annual report shall provide a summary of voluntary retrofits completed on private property used to demonstrate pollutant reduction requirements. Note that any voluntary project for which the permittee seeks to use for pollutant reduction requirements must be tracked and reported.

Voluntary Retrofits Completed on Private Property Used to Demonstrate Compliance with Pollutant Reduction Requirements	0
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Each annual report shall provide a summary of voluntary stormwater management techniques encouraged on private property.

Voluntary Stormwater Management Techniques Encouraged on Private Property			
Department / Division	Activity	Date	# of Individuals / Households / Reaches
Henricopolis	<p>Below are 11 different voluntary stormwater BMPs that Henricopolis can provide technical and financial assistance for County property owners. For more information, refer to <a href="http://henrico.us/services/virginia-conservation-assistance-program/">http://henrico.us/services/virginia-conservation-assistance-program/</a></p> <p style="text-align: center;"> <u>Basic BMPs</u>                      Impervious Surface Removal  <u>Intermediate Level BMPs</u>                      Conversion Landscaping                      Rain Gardens                      Dry Well                      Rainwater Harvesting                      Vegetated Stormwater Conveyance  <u>Advanced BMPs</u>                      Bioretention                      Infiltration Basin                      Constructed Wetlands                      Permeable Pavement                 </p>	Jan 1, 2019 – December 31, 2019	2 practices completed

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	Green Roofs		
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## PART I.B.2.k MS4 PROGRAM IMPLEMENTATION TRAINING

Each annual report shall include a list of training events, the date and the estimated number of individuals attending each event.

Training Topics and Events Attended Between January 1, 2019 and December 31, 2019		
Event	Date	# of Individuals
Topic: The permittee shall provide biennial training to appropriate field personnel in the recognition and reporting of illicit discharges		
Illicit Discharge Detection and Elimination (Schools – Career and Technical Education)	03/08/2019	3
	03/28/2019	5
	08/20/2019	2
DPU Operations Environmental and Sustainability Management System (ESMS) training covers spill kit locations, spill procedures and notifications, good housekeeping and pollution prevention practices, illicit discharge, SOPs, facility SWPPP, and erosion and sediment control measures	07/03/2019	25
Illicit Discharge Recognition and Reporting	06/25/2019	39
	12/04/2019	82
Spill Response Card Training	11/06/2019	15
During the Annual Environmental and Sustainability Management System training, spill training is taught to Traffic Engineering personnel. This is in house training and includes: 1) spill kit contents and locations, 2) how to clean up and dispose of clean up materials, and 3)	7/23/19	31

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phone numbers of staff to call in case of a major spill		
Sigma Consulting & Training Inc Chemical Spill Response Training Class focused on Local Government compliance with 29CFR 1910.120 (q)	08/08/2019	4
Illicit Discharge Detection and Elimination (Schools – Pupil Transportation)	08/21/2019	616
Illicit Discharge Detection and Elimination (Schools – Nutrition Staff)	08/21/2019	424
HazMat update: All Division of Fire operational personnel are trained to the level of Hazardous Materials Operations (HMO). The initial HMO program consists of 40 hrs. of tested content and is provided in the employee's initial recruit training program. Annual recertification training is mandatory and ensures competency maintenance, including spill response procedures.	Multiple	116
Hazmat update: Many Division of Fire personnel participate in additional hazardous materials training programs, such as Hazmat Technician and Hazmat Specialist. Initial training for these programs include 80 and 240 hours of tested content, respectfully. These higher levels of certification mandate 24 hours of additional recertification training annually. Personnel at the Hazmat Technician and Hazmat Specialist level provide additionally on-duty resources to respond to spills and emergencies throughout the community.	Multiple	45 Hazmat Technicians & 38 Hazmat Specialists
Topic: The permittee shall provide biennial training to appropriate employees in good housekeeping and pollution prevention practices that are to be employed in and around County recreation facilities; maintenance and public works facilities; and roads, streets, and parking lots.		

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Best Management Practices (Schools – Maintenance)	01/31/2019	32
Good Housekeeping (Schools – Career and Technical Education)	03/08/2019	3
	03/28/2019	5
	08/20/2019	2
MMA Annual and Quarterly SWPPP Training (DPW Maintenance)	03/19/2019	7
	06/06/2019	6
	09/12/2019	12
	12/03/2019	9
DPU Operations Environmental and Sustainability Management System (ESMS) training covers spill kit locations, spill procedures and notifications, good housekeeping and pollution prevention practices, illicit discharge, SOPs, facility SWPPP, and erosion and sediment control measures	07/03/2019	25
Municipal Site Housekeeping	06/25/2019	29
	12/04/2019	75
SWPPP Training – DPU Operations Staff	07/03/2019	73
During the Annual Environmental and Sustainability Management System training, spill training is taught to Traffic Engineering personnel. This is in house training and includes: 1) spill kit contents and locations, 2) how to clean up and dispose of clean up materials, and 3) phone numbers of staff to call in case of a major spill	7/23/19	31
Traffic Engineering conducted in house training of Traffic Engineering personnel to train them on 1) the prohibition of vehicle washing, 2) the prohibition of discharge of wastewater in the MS4, 3) the prohibition of dumping of yard waste into the MS4, 4) preventing fluid leaks	7/23/19	31

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from entering the storm sewer system, and 5) Hazardous Waste / Aerosol can puncture training		
Sigma Consulting & Training Inc Chemical Spill Response Training Class focused on Local Government compliance with 29CFR 1910.120 (q)	08/08/2019	4
Hazardous Waste Disposal Training/Meeting (Rec & Parks)	08/08/2019	3
Equipment Oil Changes Training/Meeting (Rec & Parks)	08/08/2019	3
SOP 2.0 – Chemical Storage, Handling, Transporting (Rec & Parks)	08/08/2019	90
SOP 11.0, 12.0, 15.0 – Snow Removal, Equipment Transport, Vehicle Fueling (Rec & Parks)	08/09/2019	90
SOP 6.0 – Equipment Cleaning (Rec & Parks)	08/09/2019	90
SOP 7.0 – Grass Mowing (Rec & Parks)	08/09/2019	90
SOP 8.0 – Pet Waste Removal (Rec & Parks)	08/09/2019	90
SOP 16.0 – Vehicle & Equipment Storage (Rec & Parks)	08/19/2019	90
Good Housekeeping (Schools – Pupil Transportation)	08/21/2019	616
MS4 SWPPP Quarterly Inspection Training (DPU)	09/09/2019	5
	12/03/2019	1
Spill Response Card Training (DPW- Maintenance)	11/06/2019	15
Environmental Sustainability Management System meetings are held monthly and/or semi-monthly and cover a wide variety of topics including spill prevention, AST/UST operating procedures, stormwater management, waste reduction and recycling, HVAC	Semi- Monthly or as needed	Varies

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refrigerant recovery, proper disposal of batteries and kitchen waste oil, safe coil cleaning, BMP maintenance, and proper use of snow removal products. (DGS)		
Good Housekeeping – Kitchen Practices (Schools)	Ongoing	450
Topic: The permittee shall ensure that employees, and require that contractors, who apply pesticides and herbicides are properly trained or certified per the Virginia Pesticide Control Act (§3.2-3900 et seq. of the Code of Virginia). The requirements of the Virginia Pesticide Control Act are established by the Virginia Pesticide Control Board		
Commercial Pesticide Applicator Recertification for Henrico County General Government and Schools Employees: Categories 3B (Turf), 8 (Public Health), and 60 (Registered Tech)	05/22/2019	38
Pesticide Applicator Training (DGS)	Annual	Varies
Topic: The permittee shall have a program to ensure that County plan reviewers, inspectors, program administrators and construction site operators (e.g. responsible land disturber) are trained and obtain the appropriate certifications to the extent required under the Virginia Erosion and Sediment Control Law and attendant regulations		
Erosion and Sediment Control Inspector Certification	03/25/2019	1
	10/10/2019	1
	10/15/2019	1
	12/04/2019	1
Program Administrator for Erosion and Sediment Control Certification Course	04/24/2019	2
	12/03/2019	1
DEQ Construction General Permit Update Webinar	04/29/2019	4
Erosion and Sediment Control Inspector Certification Course	04/30/2019	1
	-05/01/2019	
	07/31/2019	2
	-08/01/2019	
	11/14/2019	3

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	-11/15/2019	
Plan Reviewer for Erosion and Sediment Control Certification	06/25/2019-06/27/2019	1
	10/22/2019-10/24/2019	1
Overview of Wetlands for ESC and SWM Professionals	08/21/2019	1
DPU Operations Environmental and Sustainability Management System (ESMS) training covers spill kit locations, spill procedures and notifications, good housekeeping and pollution prevention practices, illicit discharge, SOPs, facility SWPPP, and erosion and sediment control measures	07/03/2019	25
Topic: The permittee shall have a program to ensure that the applicable County employees obtain the appropriate certifications as required under the Virginia Stormwater Management Act and its attendant regulations to implement the modified stormwater management design criteria		
Stormwater Management Inspector Certification	03/18/2019	1
	10/28/2019	1
	12/05/2019	1
DEQ Regulatory SWPPP Inspections for Localities	02/13/2019	1
	12/04/2019	1
Stormwater Management Inspector Certification Course	05/22/2019-05/23/2019	2
	06/20/2019-06/21/2019	1
	10/17/2019-10/18/2019	1
Topic: The appropriate emergency response employees shall have training in spill response.		
Spill Response (Schools – Career and Technical Education)	03/08/2019	3
	03/28/2019	5
	08/20/2019	2

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DPU Operations Environmental and Sustainability Management System (ESMS) training covers spill kit locations, spill procedures and notifications, good housekeeping and pollution prevention practices, illicit discharge, SOPs, facility SWPPP, and erosion and sediment control measures	07/03/2019	25
During the Annual Environmental and Sustainability Management System training, spill training is taught to Traffic Engineering personnel. This is in house training and includes: 1) spill kit contents and locations, 2) how to clean up and dispose of clean up materials, and 3) phone numbers of staff to call in case of a major spill	7/23/19	31
Sigma Consulting & Training Inc Chemical Spill Response Training Class focused on Local Government compliance with 29CFR 1910.120 (q)	08/08/2019	4
Environmental Sustainability Management System meetings are held monthly and/or semi-monthly and cover a wide variety of topics including spill prevention, AST/UST operating procedures, stormwater management, waste reduction and recycling, HVAC refrigerant recovery, proper disposal of batteries and kitchen waste oil, safe coil cleaning, BMP maintenance, and proper use of snow removal products. (DGS)	Semi-Monthly or as needed	Varies
Fire: HazMat update: All Division of Fire operational personnel are trained to the level of Hazardous Materials Operations (HMO). The initial HMO program consists of 40 hrs. of tested content and is provided in the employee's initial recruit	Multiple	116

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training program. Annual recertification training is mandatory and ensures competency maintenance, including spill response procedures.		
Topic: Other		
Understanding EPA's MS4 Permit (Schools C&M)	01/11/2019	1
Detention and Retention Basins (Schools C&M)	01/31/2019	32
APWA 2019 Conference and Equipment Show	05/15/2019 -05/17/2019	5
AST/UST Operator Training	Annual	Varies
ESMS R-22 Recovery Training	As needed	Varies

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## PART I.B.2.I

### MS4 PROGRAM IMPLEMENTATION WATER QUALITY SCREENING PROGRAMS

Each annual report shall include the total number of outfalls included as part of the permittee's MS4, the number of outfalls screened during the reporting period, a list of locations upon which dry weather screening was conducted, the results, and any follow-up actions including maintenance and/or repair of infrastructure or outfalls performed as a result of the dry weather screening.

# of MS4 Outfalls	3,188
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# of Outfalls Screened between 1/1/2019 and 12/31/2019*	1,608
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\* includes all end treatments for which a Screening Inspection was conducted, not just those that are identified as MS4 Outfalls

Dry Weather Screening Conducted between 1/1/2019 and 12/31/2019		
MS4 Outfall	Findings	Follow-Up Action
EN000000000573	No Issues Identified	None Required
EN000000000574	No Issues Identified	None Required
EN000000000578	No Issues Identified	None Required
EN000000001715	No Issues Identified	None Required
EN000000001716	No Issues Identified	None Required
EN000000001717	No Issues Identified	None Required
EN000000001724	No Issues Identified	None Required
EN000000001820	No Issues Identified	None Required
EN000000001821	No Issues Identified	None Required
EN000000001844	No Issues Identified	None Required
EN000000001846	No Issues Identified	None Required
EN000000001847	No Issues Identified	None Required
EN000000001848	No Issues Identified	None Required

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EN000000001849	No Issues Identified	None Required
EN000000001850	No Issues Identified	None Required
EN000000001853	No Issues Identified	None Required
EN000000001870	No Issues Identified	None Required
EN000000001871	No Issues Identified	None Required
EN000000002221	No Issues Identified	None Required
EN000000002383	No Issues Identified	None Required
EN000000002384	No Issues Identified	None Required
EN000000002386	No Issued Identified	None Required
EN000000002387	No Issued Identified	None Required
EN000000002391	No Issued Identified	None Required
EN000000002392	No Issues Identified	None Required
EN000000002394	No Issued Identified	None Required
EN000000002410	No Issues Identified	None Required
EN000000002411	No Issues Identified	None Required
EN000000002545	No Issues Identified	None Required
EN000000002722	No Issues Identified	None Required
EN000000002723	No Issues Identified	None Required
EN000000002726	No Issues Identified	None Required
EN000000003227	No Issues Identified	None Required
EN000000003228	No Issues Identified	None Required
EN000000003323	No Issues Identified	None Required
EN000000003421	No Issues Identified	None Required
EN000000003422	No Issues Identified	None Required
EN000000003529	No Issues Identified	None Required
EN000000003535	No Issues Identified	None Required
EN000000003536	No Issues Identified	None Required
EN000000004448	No Issues Identified	None Required
EN000000004664	No Issues Identified	None Required
EN000000004671	No Issues Identified	None Required
EN000000004683	No Issues Identified	None Required
EN000000004696	No Issues Identified	None Required
EN000000004699	No Issues Identified	None Required
EN000000004700	No Issues Identified	None Required
EN000000004702	No Issues Identified	None Required
EN000000004727	No Issues Identified	None Required
EN000000004751	No Issues Identified	None Required

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EN000000004753	No Issues Identified	None Required
EN000000005274	No Issues Identified	None Required
EN000000005457	No Issues Identified	None Required
EN000000005459	No Issues Identified	None Required
EN000000005460	No Issues Identified	None Required
EN000000005464	No Issues Identified	None Required
EN000000005492	No Issues Identified	None Required
EN000000005495	No Issues Identified	None Required
EN000000005496	No Issues Identified	None Required
EN000000005497	No Issues Identified	None Required
EN000000005507	No Issues Identified	None Required
EN000000005515	No Issues Identified	None Required
EN000000005535	No Issues Identified	None Required
EN000000005557	No Issues Identified	None Required
EN000000005683	No Issues Identified	None Required
EN000000005706	No Issues Identified	None Required
EN000000006171	No Issues Identified	None Required
EN000000006172	No Issues Identified	None Required
EN000000006951	No Issues Identified	None Required
EN000000007012	No Issues Identified	None Required
EN000000007014	No Issues Identified	None Required
EN000000007151	No Issues Identified	None Required
EN000000007153	No Issues Identified	None Required
EN000000007243	No Issues Identified	None Required
EN000000007255	No Issues Identified	None Required
EN000000007263	No Issues Identified	None Required
EN000000007289	No Issues Identified	None Required
EN000000007403	No Issues Identified	None Required
EN000000008123	No Issues Identified	None Required
EN000000008125	No Issues Identified	None Required
EN000000008163	No Issues Identified	None Required
EN000000008244	No Issues Identified	None Required
EN000000008248	No Issues Identified	None Required
EN000000008255	No Issues Identified	None Required
EN000000008271	No Issues Identified	None Required
EN000000008272	No Issues Identified	None Required
EN000000008299	No Issues Identified	None Required

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EN000000008303	No Issues Identified	None Required
EN000000008312	No Issues Identified	None Required
EN000000008367	No Issues Identified	None Required
EN000000008477	No Issues Identified	None Required
EN000000008551	No Issues Identified	None Required
EN000000008639	No Issues Identified	None Required
EN000000010994	No Issues Identified	None Required
EN000000011431	No Issues Identified	None Required
EN000000011432	No Issues Identified	None Required
EN000000011708	No Issues Identified	None Required
EN000000011864	No Issues Identified	None Required
EN000000013092	No Issues Identified	None Required
EN000000013177	No Issues Identified	None Required

Follow-Up Actions Performed as a Result of the Dry Weather Screening Conducted between 1/1/2019 and 12/31/2019	
MS4 Structure	Follow-Up Action
None	None

The annual report due March 31, 2016 shall include the written procedures for wet weather screening.

DPW will develop a list of MS4 structures subject to wet weather screening based on the areas of concern as identified by the County that are within the drainage area to the MS4 structure, including:

- (1) fertilizer storage yards,
- (2) mulch / soil storage yards,
- (3) building supply storage yards,
- (4) used automobile lots,
- (5) construction equipment storage areas,
- (6) automobile salvage yards, and
- (7) areas of previously identified spill / IDDE complaints.

DPW will screen no fewer than 25 of the MS4 structures identified as subject to wet weather screening each year between January 1, 2016 and December 31, 2019.

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DPW will screen no fewer than 10 of the MS4 structures identified as subject to wet weather screening between January 1, 2020 and March 31, 2020.

The MS4 structures will be subject to the established inspection procedure, evaluating identified flows and maintenance and repair needs.

Depending on the information observed and gathered during the wet weather screening inspections, identified flows may need to be sampled to determine the source of the flow. Whether or not samples are collected, suspected illicit discharges will be forwarded to the IDDE investigator as a potential illicit discharge for follow-up.

Each annual report shall include a list of locations upon which wet weather screening was conducted, the results, weather conditions at the time sample was collected to include date and approximate time of most recent storm event preceding sample collection, long term trends analyses, and any follow-up actions including maintenance and/or repair of infrastructure or outfalls performed as a result of the wet weather screening.

<b>Wet Weather Screening Conducted between 1/1/2019 and 12/31/2019</b>			
<b>MS4 Structure</b>	<b>Findings</b>	<b>Sample Collected</b>	<b>Weather Conditions at the time of Sample</b>
IN000000016232	No Issues	No	N/A
IN000000025447	No Issues	No	N/A
MN000000038312	No Issues	No	N/A
MN000000034231	No Issues	No	N/A
IN000000024975	No Issues	No	N/A
IN000000025443	No Issues	No	N/A
MN000000038782	No Issues	No	N/A
IN000000025372	No Issues	No	N/A
IN000000017336	No issues	No	N/A

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MN000000139407	No Issues	No	N/A
IN00000015467	No Issues	No	N/A
IN000000024869	No Issues	No	N/A
MN000000037972	No Issues	No	N/A
IN000000003914	No Issues	No	N/A
MN000000067764	No Issues	No	N/A
MN000000091612	No issues	No	N/A
MN000000141518	No Issues	No	N/A
MN000000038652	No Issues	No	N/A
MN000000077443	No Issues	No	N/A
MN000000046178	No Issues	No	N/A
MH000000004261	No Issues	No	N/A
MH000000006030	No Issues	No	N/A
IN000000005332	No Issues	No	N/A
IN000000017295	No Issues	No	N/A
IN000000017281	No Issues	No	N/A

The data does not lend itself to an analysis of any long-term trends at this time.

### Follow-Up Actions Performed as a Result of the Wet Weather Screening Conducted between 1/1/2019 and 12/31/2019

MS4 Structure

Follow-Up Action

There are no follow-up actions as a result of wet weather screening as no issues were identified.

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### PART I.B.2.I

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# HENRICO COUNTY MS4 PROGRAM PLAN

## PART I.B.2.m

### MS4 PROGRAM IMPLEMENTATION INFRASTRUCTURE COORDINATION

**Annual Coordination Meeting – The permittee shall meet annually with VDOT for purposes of overall coordination on priority issues for the permittee’s MS4 program plan (including operations and maintenance elements) and TMDL action planning relevant to the interconnectivity of the MS4s.**

The Annual Coordination Meeting was held on November 19, 2019 at the Virginia Department of Transportation’s central office. In addition to representatives from VDOT and Henrico County, Chesterfield County staff were also present. The following were in attendance:

Chris Swanson	VDOT
Jacob Bauchman	VDOT
Scott Crafton	VDOT
Alex Forasté	VDOT
Michelle Fults	VDOT
Tracey Harmon	VDOT
Keith White	Henrico County
Deana Williams	Henrico County
Kim Mervine	Chesterfield County
David Taylor	Chesterfield County
Scott Flanigan	Chesterfield County

**Mapping – The permittee shall inform VDOT of the status of its mapping program, identifying any uncertainty regarding ownership or actual location of MS4 components associated with the physically-interconnected MS4s, and working to resolve such uncertainty. The permittee shall coordinate with VDOT to identify any areas within the permittee’s municipal boundaries that drain to the VDOT MS4.**

VDOT, Chesterfield, and Henrico discussed their mapping efforts. All agreed to make their mapping available as requested by the other attendees.

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**Chesapeake Bay TMDL Action Plans** – The permittee shall inform VDOT of the means, methods, and schedule by which the permittee will implement the reductions required by the Chesapeake Bay TMDL Special Condition (Part I.D.1) when those means and methods may impact the physically-interconnected MS4s. The parties are encouraged to cooperate with one another where the siting or design of best management practices (BMPs) may be accelerated or otherwise improved by mutual cooperation.

Henrico's Chesapeake Bay TMDL Action Plans was discussed and is available for review.

The permittee shall coordinate with VDOT to identify any areas within the permittee's municipal boundaries that drain to the VDOT MS4 and are unaccounted for in the Chesapeake Bay TMDL Action Plan developed by VDOT or the permittee. The unaccounted areas shall be quantified (acres) in the Chesapeake Bay TMDL Action Plan submitted by the permittee.

Henrico's action plan quantifies the areas accounted for (and unaccounted for) in the load reduction calculations in accordance with its permit.

**Other TMDL Action Plans** – The permittee shall inform VDOT of TMDL Action Plans and major milestones implemented for other (i.e., non-Chesapeake Bay) TMDLs when those plans may impact the physically-interconnected MS4s. The parties are encouraged to cooperate with one another where the siting or design of BMPs may be accelerated or improved by mutual cooperation.

Henrico's other TMDL Action Plans are available on its website.

**Credit for TMDL Implementation** – Permit specific BMP retrofit requirements shall not be double-counted in the calculation of load reductions. If the permittee undertakes the project, the permittee shall be entitled to full credit for the project, but may share credit with VDOT on mutually agreeable terms, which shall be in writing.

During the development of the TMDL Action Plans, Henrico did not include any projects that could potentially result in "double-counting" of pollutant reductions achieved in the physically-interconnected MS4.

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**Illicit Discharge Detection & Elimination –** The permittee shall continue to be responsible for implementing a program for illicit discharge detection and elimination, including dry weather field screening, for the permittee’s portion of the physically-interconnected MS4. As part of the annual coordination meeting, described in item (1) above, the permittee shall coordinate with VDOT on the identification of high risk industrial facilities. The permittee shall establish procedures for notifying VDOT when an illicit discharge is identified in the VDOT MS4.

Henrico discussed its illicit detection and elimination (IDDE) program. When an illicit discharge that drains to the physically-interconnected MS4 is found, Henrico will notify VDOT and DEQ via email.

**Water Quality Monitoring –** The permittee shall conduct water quality monitoring as required by Part I.B.2.l) and Part I.C of this state permit. The permittee shall make available to VDOT all monitoring data collected from areas where the physically-interconnected MS4 discharges to the VDOT MS4 or received flow from the VDOT MS4. The permittee and VDOT are encouraged to cooperate with one another to establish a joint monitoring network.

The water quality monitoring provisions of the MS4 Permit were discussed and any monitoring data collected from areas that drain into or from the physically-interconnected MS4 is available to VDOT.

**PART I.C.1**  
**MONITORING REQUIREMENTS**  
**BIOLOGICAL STREAM MONITORING**

**Each annual report shall include a summary of the monitoring results, analyses, and an interpretation of that data with respect to long-term patterns/trends.**

**Taxa Richness**

Taxa Richness is the number of different taxa represented in an ecological community. Taxa Richness is simply a count of the taxa, and it does not take into account the relative abundances of the taxa. Taxa Richness for the 2019 sampling year was similar to previous years' data. There was a slight increase in Taxa Richness at most of the stream sites from the spring sampling event to the fall sampling event. Taxa Richness is expected to decrease with increasing perturbation.

**EPT Index**

EPT Index is a subset of the above Richness measure. It is the number of taxa in the insect orders Ephemeroptera, Plecoptera, and Trichoptera, which are generally more environmentally sensitive. EPT Index for the 2019 sampling year was similar to previous years' data. There was slight increase of this metric at most sites from the spring event to the fall event. EPT Index is expected to decrease with increasing perturbation.

**Dominant Taxon**

Dominant Taxon measures the percent abundance of individuals in the single most abundant taxon. No common trend was noted between the 2019 spring and fall sampling events. This metric is expected to increase with increasing perturbation.

**Hilsenhoff Biotic Index**

The Hilsenhoff Biotic Index (HBI) estimates the overall tolerance of the community in a sampling area, weighted by the relative abundance of each taxonomic group. Organisms are assigned a tolerance number from 0 to 10 pertaining to the group's known sensitivity to organic pollutants; 0 being most sensitive, 10 being most tolerant. HBI values range from 0 to 10 as well. Low HBI values reflect a higher abundance of sensitive groups, thus a lower level of pollution. This measurement has remained fairly consistent throughout the duration of the monitoring at all sites. HBI scores increased slightly at Cornelius Creek, Broadwater Creek, and Hungary

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Run, and decreased slightly at Stony Run and Upham Brook from the spring to the fall sampling events.

### **% Gatherers**

This measures the percent abundance of individuals in the sample whose primary functional mechanism for obtaining food (functional feeding group (FFG)) is to collect/gather depositional organic matter. Although generally within the range of previously recorded data, these measurements increased substantially at Hungary Creek and Broadwater Creek and decreased substantially at Stony Run and Upham Brook from the spring to the fall collection event. This percentage is expected to decrease with increasing perturbation for the stream.

### **% Predators**

This measures the percent abundance of individuals in the sample whose primary functional mechanism for obtaining food (FFG) is to attack prey and ingest whole organisms or their parts. This measurement nearly doubled at Broadwater Creek from the spring to the fall while remaining consistent at all other monitoring sites. This measurement is variable and difficult to determine if it should increase or decrease with increasing perturbation.

### **% Scrapers**

This measures the percent abundance of individuals in the sample whose primary functional mechanism for obtaining food (FFG) is to graze on substrate or periphyton-attached algae and associated material. With the exception of Broadwater Creek which decrease considerably, there was no substantial difference between the spring sampling event and the fall sampling event. This metric is expected to decrease with Increasing perturbation.

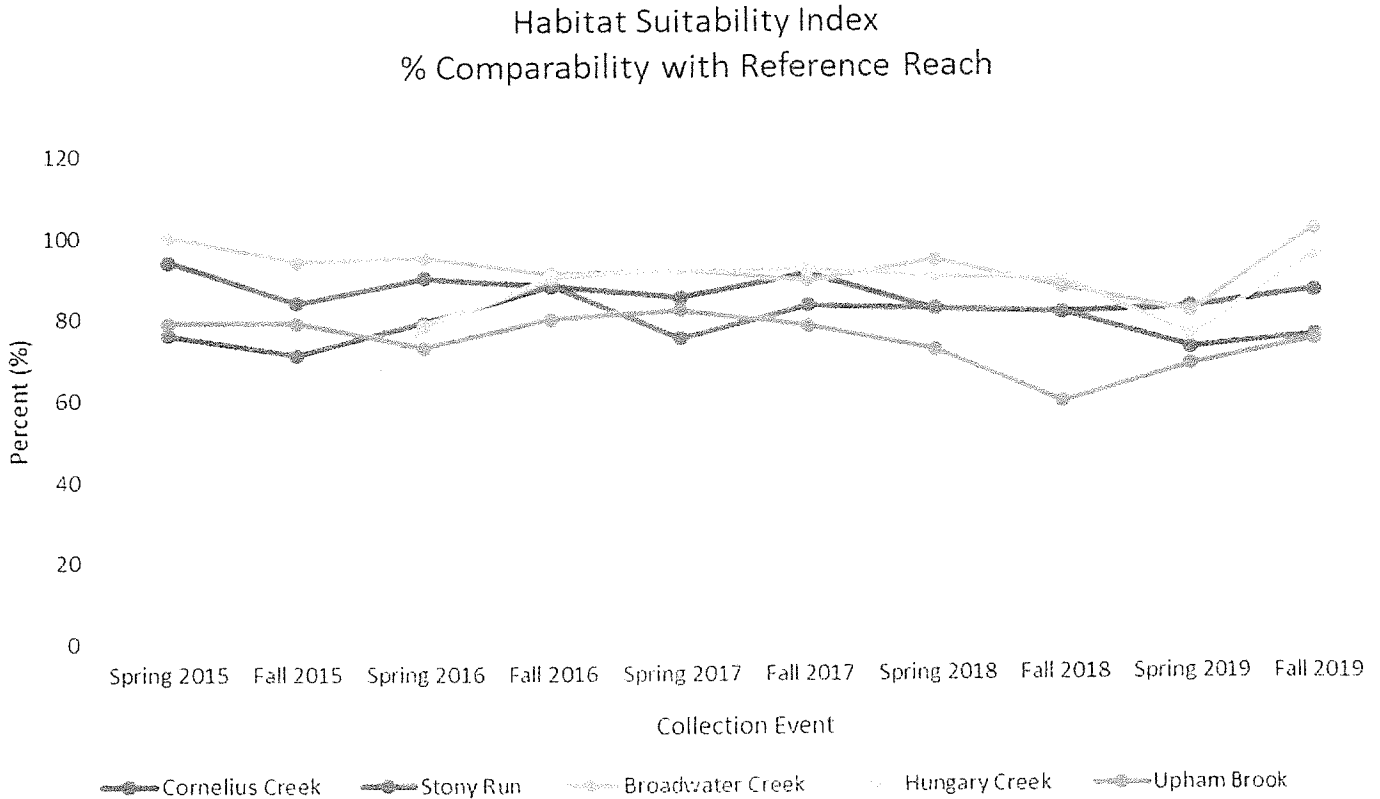
### **Summary/Conclusions**

Habitat Suitability Data for the 2019 sampling year showed minor increases from the spring to the fall sampling event at all five monitoring sites. The Biological Condition Index for the 2019 sampling year showed only minor differences between the spring sampling event and the fall sampling event at all five monitoring sites.

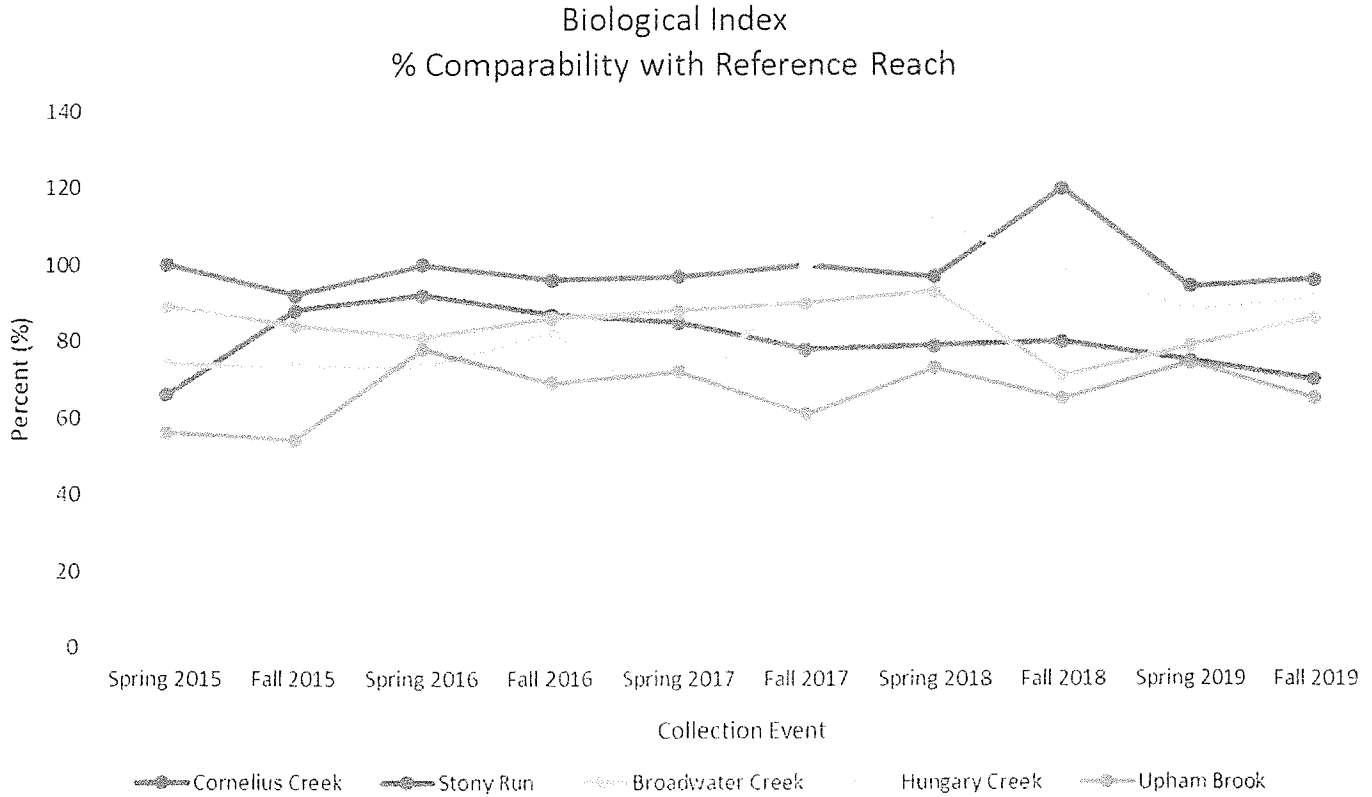
The integrity of the Access Database used to calculate prior year's metric scores has become compromised. Therefore, it is difficult to compare this year's Biological Condition Index data with prior years' data. Because of this issue, long term trends cannot be easily determined. Habitat data is readily available within the Access Database, and no significant differences are noted when comparing 2019 habitat data with prior years' habitat data. The following graphs depict the Biological

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Condition Indices and the Habitat Suitability Indices for the 2015-2019 sampling years.



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# HENRICO COUNTY MS4 PROGRAM PLAN

## Summary of Stream Habitat Assessment Results Spring 2019 Henrico County Stream Bioassessment Program 1/1/2019 through 6/1/2019

	Scoring Range		Reference											
	Poor to Optimal		Hnr2001Lo	DSR04.S01	HLS17.S02	UPB17.S02	CRC07.S01	NHC13.S01						
<b><u>Substrate and Instream Cover</u></b>														
Epifaunal substrate/available cover	0-20	17	11	13	12	12	18	13						
Pool substrate characterization	0-20	16	7	14	7	7	11	7						
Pool variability	0-20	17	9	8	3	3	8	9						
<b><u>Channel Morphology</u></b>														
Sediment deposition	0-20	14	13	15	10	10	10	5						
Channel flow status	0-20	16	13	9	11	11	14	16						
Channel alteration	0-20	18	12	18	17	17	18	18						
Channel sinuosity	0-20	15.5	18	15	19	19	19	18						
<b><u>Riparian and Bank Structure</u></b>														
Bank stability	0-10	8	5	5	5	5	4	9						
Bank stability	0-10	8.5	5	5	5	5	5	8						
Bank vegetation protection	0-10	7	7	6	6	6	6	8						
Bank vegetation protection	0-10	8	7	6	6	6	7	7						
Riparian vegetative zone width	0-10	10	3	10	2	2	10	3						
Riparian vegetative zone width	0-10	10	9	9	10	10	5	3						
<b>Total Score</b>		<b>165</b>	<b>119</b>	<b>133</b>	<b>113</b>	<b>113</b>	<b>135</b>	<b>124</b>						
<b>Percent of Reference Site Resulting Habitat Suitability</b>		<b>72</b>	<b>81</b>	<b>81</b>	<b>68</b>	<b>68</b>	<b>82</b>	<b>75</b>						
		Partially S.	Supporting	Supporting	Partially S.	Partially S.	Supporting	Supporting						

**Habitat Criteria**  
 >90% - Comparable to reference  
 75-89 - Supporting  
 60 - 74 - Partially supporting  
 <59 - non-supporting

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**Summary of Stream Habitat Assessment Results**  
**Fall 2019**  
**Henrico County Stream Bioassessment Program**  
**7/1/2019 through 12/31/2019**

	Scoring Range		Reference				
	Poor to Optimal	Hur2001Lo	DSR04.S01	HLS17.S02	UPB17.S02	CRC07.S01	NHC13.S01
<b><u>Substrate and Instream Cover</u></b>							
Epifaunal substrate/available cover	0-20	17	16	11	17	16	16
Pool substrate characterization	0-20	16	15	13	12	8	17
Pool variability	0-20	17	9	15	17	13	11
<b><u>Channel Morphology</u></b>							
Sediment deposition	0-20	14	13	8	15	12	12
Channel flow status	0-20	16	18	14	14	14	16
Channel alteration	0-20	18	8	20	9	18	18
Channel sinuosity	0-20	15.5	17	10	16	19	19
<b><u>Riparian and Bank Structure</u></b>							
Bank stability	0-10	8	3	5	3	9	9
Right Bank	0-10	8.5	3	7	6	9	9
Left Bank	0-10	7	5	6	5	8	8
Right Bank	0-10	8	6	9	8	6	6
Riparian vegetative zone width	0-10	10	2	10	10	9	9
Riparian vegetative zone width	0-10	10	8	10	9	6	6
<b>Total Score</b>		165	123	122	142	156	156
<b>Percent of Reference Site</b>			75	74	86	95	95
<b>Resulting Habitat Suitability</b>			Comparable	Partially S.	Supporting	Comparable	Comparable

*Habitat Criteria*  
 >90% - Comparable to reference  
 5-89 - Supporting  
 60 - 74 - Partially supporting  
 <59 - non-supporting

**HENRICO COUNTY MS4 PROGRAM PLAN**  
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**HENRICO COUNTY MS4 PROGRAM PLAN**

**Henrico County 2019 Bioassessment Metrics**

Spring Bioassessments	Cornelius Creek	Stony Run	Broadwater Creek	Hungary Creek	Upham Brook	Reference Reach
Taxa Richness	29	12	17	15	18	49
EPT Index	11	2	3	2	3	8
% Dominant Taxon	51.74	49.21	26.86	19.86	45.22	14.47
HBI	5.59	5.77	5.76	5.49	5.5	5.52
% Gatherers	60.00	84.13	24.57	24.82	75.29	37.82
% Predators	6.52	3.7	7.43	22.7	0.93	10.77
% Scrapers	18.26	3.7	53.14	16.31	9.32	14.38

Fall Bioassessments	Cornelius Creek	Stony Run	Broadwater Creek	Hungary Creek	Upham Brook	Reference Reach
Taxa Richness	22	16	23	21	21	49
EPT Index	7	4	7	5	4	8
% Dominant Taxon	26.7	18.5	36.9	40.5	29.5	14.47
HBI	5.87	4.56	6.97	7.19	4.92	5.52
% Gatherers	62.67	39.81	44.65	53.04	39.61	37.82
% Predators	8.67	4.67	13.65	17.81	2.42	10.77
% Scrapers	24	3.7	11.81	12.96	2.9	14.38

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**Henrico County 2019 Bioassessment Metric Scores**

Spring Bioassessments	Cornelius Creek	Stony Run	Broadwater Creek	Hungary Creek	Upham Brook	Reference Reach
Taxa Richness	67	28	40	35	42	114
EPT Index	100	18	27	18	27	73
% Dominant Taxon	57	60	86	94	64	101
HBI	65	62	62	66	66	66
% Gatherers	158	221	65	65	198	100
% Predators	54	31	62	189	8	90
% Scrapers	37	8	108	33	19	29
Total:	77	61	64	72	61	82
% Comparability w/ Reference Reach:	94	75	79	88	74	
Biological Condition:	Non-impaired	Slightly Impaired	Non-impaired	Non-impaired	Slightly Impaired	

Fall Bioassessments	Cornelius Creek	Stony Run	Broadwater Creek	Hungary Creek	Upham Brook	Reference Reach
Taxa Richness	51	37	53	49	49	114
EPT Index	64	36	64	45	36	73
% Dominant Taxon	86	96	74	70	83	101
HBI	61	80	45	41	75	66
% Gatherers	165	105	118	140	104	100
% Predators	72	39	114	148	20	90
% Scrapers	49	8	24	26	6	29
Total	78	57	70	74	53	82
% Comparability w/ Reference Reach:	96	70	86	91	65	
Biological Condition:	Non-impaired	Slightly Impaired	Non-impaired	Non-impaired	Slightly Impaired	

**Biological Condition Criteria**

- 0-22% - Severely Impaired
- 23-50% - Moderately Impaired
- 51-78% - Slightly Impaired
- 79-100% - Non-impaired

# HENRICO COUNTY MS4 PROGRAM PLAN

## PART I.C.2

### MONITORING REQUIREMENTS IN-STREAM MONITORING

Beginning with the annual report due March 31, 2017, each annual report shall include a summary of the monitoring results and analyses and an interpretation of that data with respect to long-term patterns/trends.

The tables below include the data collected during the 2019 reporting year.

Cornelius Creek	1/16/2019	3/13/2019	5/15/2019	7/17/2018	9/18/2019	11/13/2019
pH	6.64	6.82	6.89	7.54	7.26	malfunction
Dissolved Oxygen (mg/l)	13.16	12.34	10.02	7.81	8.55	12.31
Temperature (°C)	3	6.8	13.9	25.3	20.8	6
Total Suspended Solids (mg/l)	3.2	3	4.5	2	2.3	4.8
Ammonia as Nitrogen (mg/l)	BQL	BQL	0.27	BQL	0.22	BQL
Nitrate plus Nitrite Nitrogen (mg/l)	1.36	1.59	0.97	1.81	1.91	0.65
Total Kjeldahl Nitrogen (mg/l)	0.34	0.61	1.54	0.22	0.4	0.41
Total Nitrogen (calculated) (mg/l)	1.7	2.2	2.51	2.03	2.31	1.06
Dissolved Phosphorus (mg/l)	BQL	BQL	0.01	BQL	BQL	0.01
Total Phosphorus (mg/l)	0.04	0.03	0.05	0.03	0.04	0.03
Escherichia coli (CFU/100ml)	14	160	270	190	51	340
Air Temperature (°F)	35	51	58	92	75	29

BQL: Below Quantitation Level

## HENRICO COUNTY MS4 PROGRAM PLAN

<b>Broadwater Creek</b>	1/16/2019	3/13/2019	5/15/2019	7/17/2018	9/18/2019	11/13/2019
pH	5.97	6.04	6.06	6.7	6.01	malfunction
Dissolved Oxygen (mg/l)	11.5	10.85	8.76	7.64	7.92	9.99
Temperature (°C)	4.9	8.6	13.5	21.4	18.9	8.2
Total Suspended Solids (mg/l)	3.5	7.8	11	6.5	3.7	5.8
Ammonia as Nitrogen (mg/l)	BQL	BQL	0.29	BQL	BQL	BQL
Nitrate plus Nitrite Nitrogen (mg/l)	0.56	0.61	0.61	1.07	1.23	0.53
Total Kjeldahl Nitrogen (mg/l)	0.43	0.52	1.65	0.34	0.24	0.41
Total Nitrogen (calculated) (mg/l)	0.99	1.13	2.26	1.41	1.47	0.94
Dissolved Phosphorus (mg/l)	BQL	BQL	0.03	BQL	BQL	0.03
Total Phosphorus (mg/l)	0.04	0.05	0.08	0.05	0.08	0.05
Escherichia coli (CFU/100ml)	12	55	140	20	43	200
Air Temperature (°F)	37	53	60	95	73	31

BQL: Below Quantitation Level

<b>Upham Brook</b>	1/16/2019	3/13/2019	5/15/2019	7/17/2018	9/18/2019	11/13/2019
pH	7.1	7.02	7.27	7.75	7.47	malfunction
Dissolved Oxygen (mg/l)	12.86	11.17	8.21	5.87	6.64	11.29
Temperature (°C)	4.4	7.6	14.9	26.8	21.9	6.1
Total Suspended Solids (mg/l)	2.6	2.2	4.2	11	9.8	10.3
Ammonia as Nitrogen (mg/l)	BQL	0.1	0.36	0.11	0.16	BQL
Nitrate plus Nitrite Nitrogen (mg/l)	0.87	0.69	0.45	0.21	0.46	0.35
Total Kjeldahl Nitrogen (mg/l)	0.48	0.46	1.06	0.28	0.47	0.32
Total Nitrogen (calculated) (mg/l)	1.35	1.15	1.51	0.49	0.93	0.67
Dissolved Phosphorus (mg/l)	0.03	0.03	0.07	BQL	0.05	0.06
Total Phosphorus (mg/l)	0.06	0.07	0.1	0.14	0.12	0.08
Escherichia coli (CFU/100ml)	140	26	290	73	310	2700
Air Temperature (°F)	43	50	63	90	73	34

BQL: Below Quantitation Level

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**HENRICO COUNTY MS4 PROGRAM PLAN  
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## HENRICO COUNTY MS4 PROGRAM PLAN

<b>Stony Run</b>	1/16/2019	3/13/2019	5/15/2019	7/17/2018	9/18/2019	11/13/2019
pH	6.99	7.05	7.08	7.67	7.28	malfunction
Dissolved Oxygen (mg/l)	12.9	12.51	8.61	6.41	7.2	11.71
Temperature (°C)	4.7	7.5	15.7	25.1	20.7	6.7
Total Suspended Solids (mg/l)	1.2	2.8	4.2	1.9	1.1	2.4
Ammonia as Nitrogen (mg/l)	BQL	BQL	0.23	BQL	0.21	BQL
Nitrate plus Nitrite Nitrogen (mg/l)	0.66	0.56	0.4	0.26	0.24	0.3
Total Kjeldahl Nitrogen (mg/l)	0.4	0.42	1.48	0.25	0.39	0.29
Total Nitrogen (calculated) (mg/l)	1.06	0.98	1.88	0.51	0.63	0.59
Dissolved Phosphorus (mg/l)	BQL	BQL	0.01	BQL	0.02	BQL
Total Phosphorus (mg/l)	0.04	0.04	0.06	0.06	0.06	0.03
Escherichia coli (CFU/100ml)	31	100	2300	110	39	140
Air Temperature (°F)	37	48	65	78	73	35

BQL: Below Quantitation Level

<b>Hungary Creek</b>	1/16/2019	3/13/2019	5/15/2019	7/17/2018	9/18/2019	11/13/2019
pH	6.89	6.08	7.07	7.34	6.51	malfunction
Dissolved Oxygen (mg/l)	11.88	9.12	8.21	4.53	1.96	9.05
Temperature (°C)	6.5	8	16.3	24.8	19.9	6.4
Total Suspended Solids (mg/l)	4.9	4	20	8.5	7.8	13.8
Ammonia as Nitrogen (mg/l)	BQL	BQL	0.33	0.11	0.22	0.14
Nitrate plus Nitrite Nitrogen (mg/l)	0.77	0.76	0.31	0.18	0.24	0.46
Total Kjeldahl Nitrogen (mg/l)	0.53	0.43	1.85	0.73	0.57	0.36
Total Nitrogen (calculated) (mg/l)	1.3	1.19	2.16	0.91	0.81	0.82
Dissolved Phosphorus (mg/l)	0.02	BQL	0.01	0.03	0.14	0.05
Total Phosphorus (mg/l)	0.06	0.04	0.09	0.12	0.21	0.08
Escherichia coli (CFU/100ml)	80	220	680	360	14	320
Air Temperature (°F)	42	45	64	78	73	35

BQL: Below Quantitation Level

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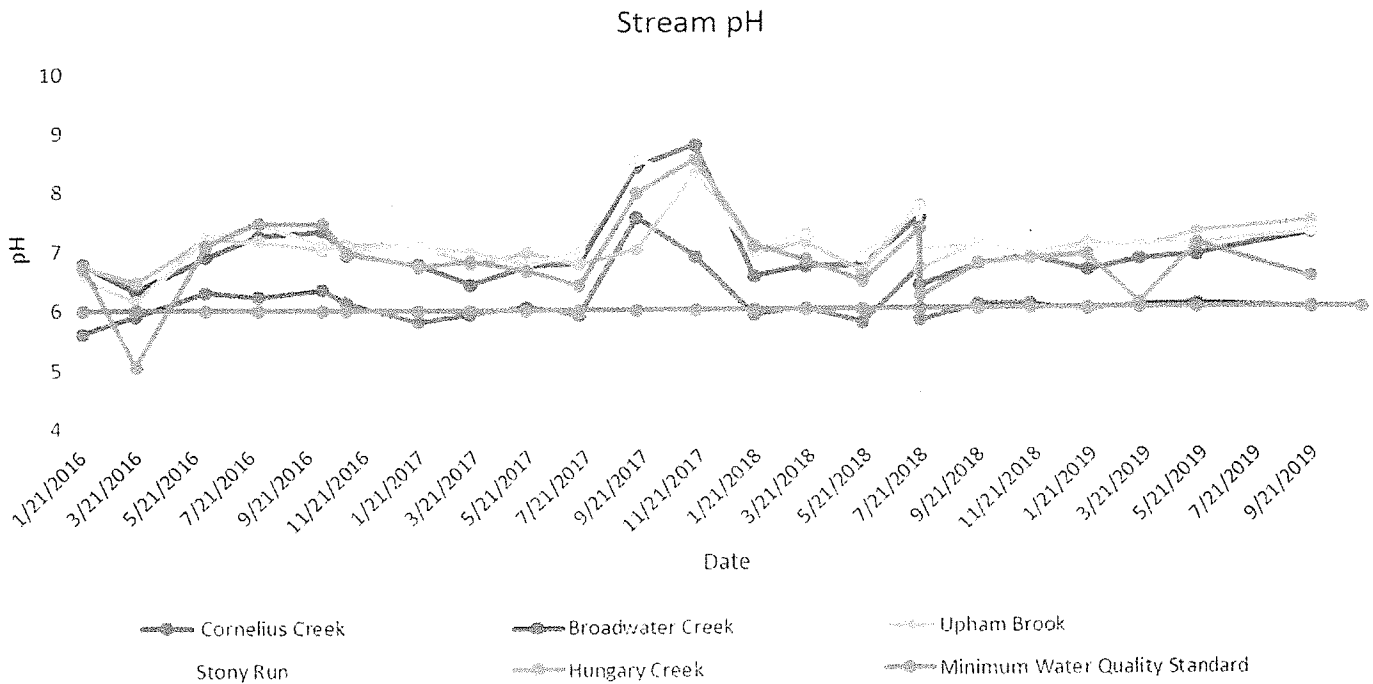
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# HENRICO COUNTY MS4 PROGRAM PLAN

Each data point on the following graphs represent the data collected during the permits reporting period. Were available, the appropriate Water Quality Standard is also included on the graph.

## Stream pH

Stream pH has been consistent throughout the duration of the monitoring period except for the fall of 2017 where a spike in pH was observed across all sites.

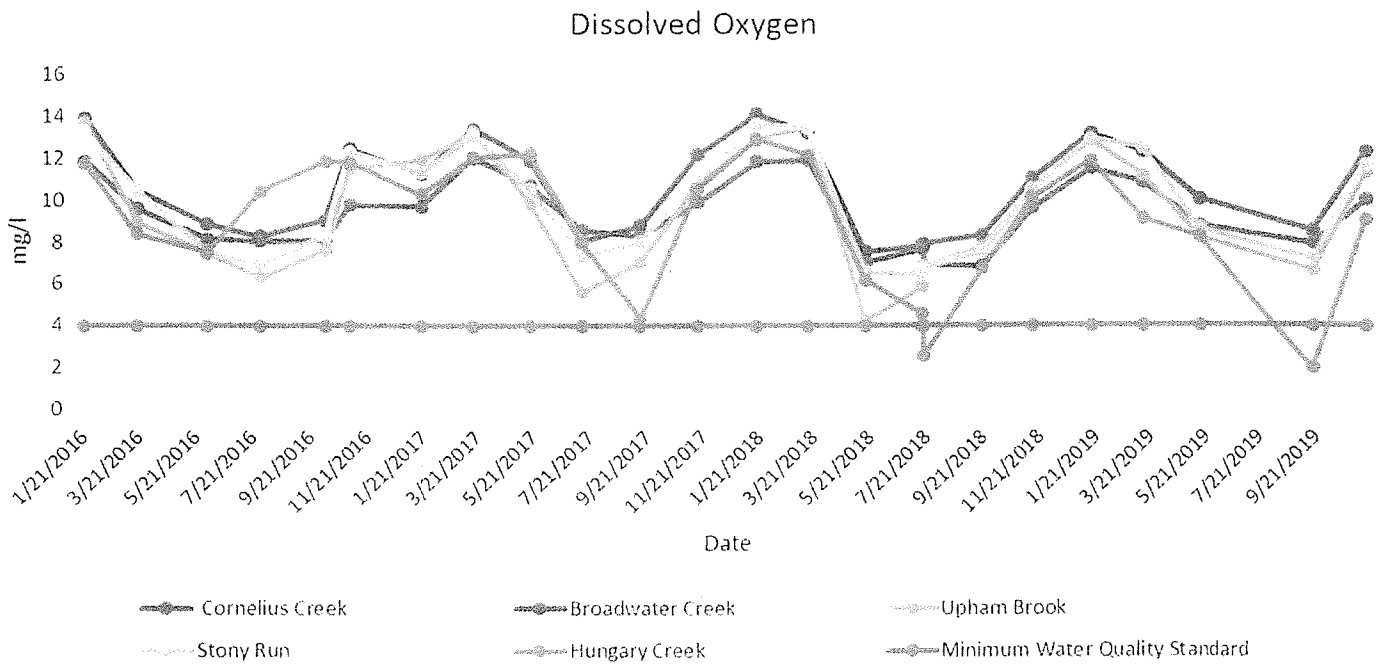




# HENRICO COUNTY MS4 PROGRAM PLAN

## Dissolved Oxygen

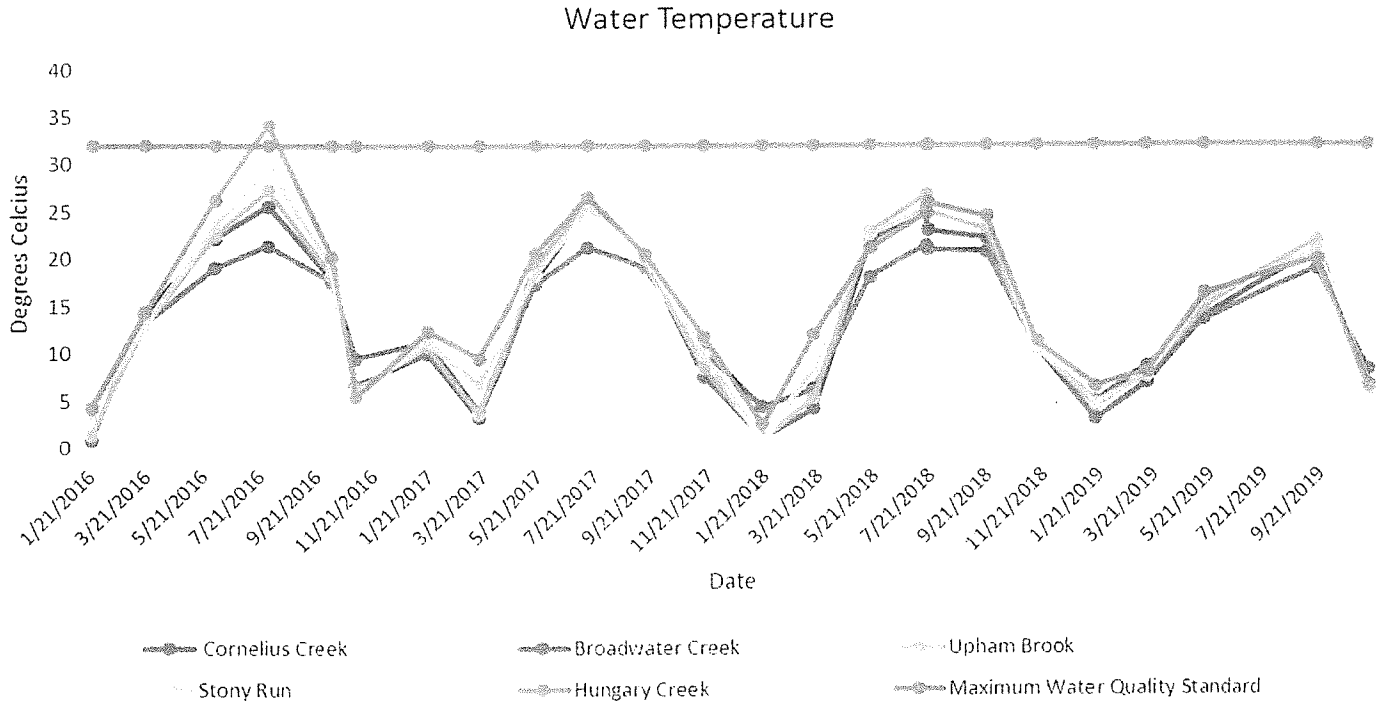
Aside from season variability noted across all sites, no discernable trend has been observed.



# HENRICO COUNTY MS4 PROGRAM PLAN

## Water Temperature

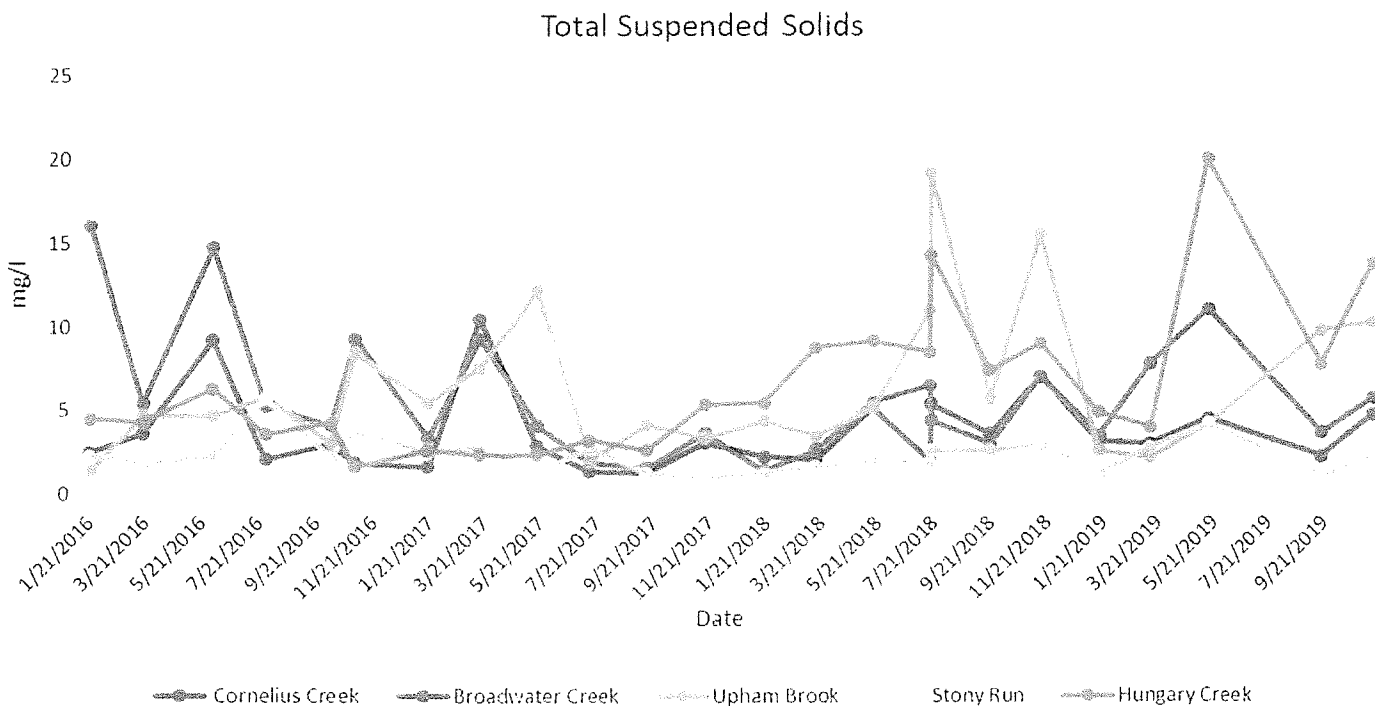
Aside from season variability noted across all sites, no discernable trend has been observed.



# HENRICO COUNTY MS4 PROGRAM PLAN

## Total Suspended Solids (TSS)

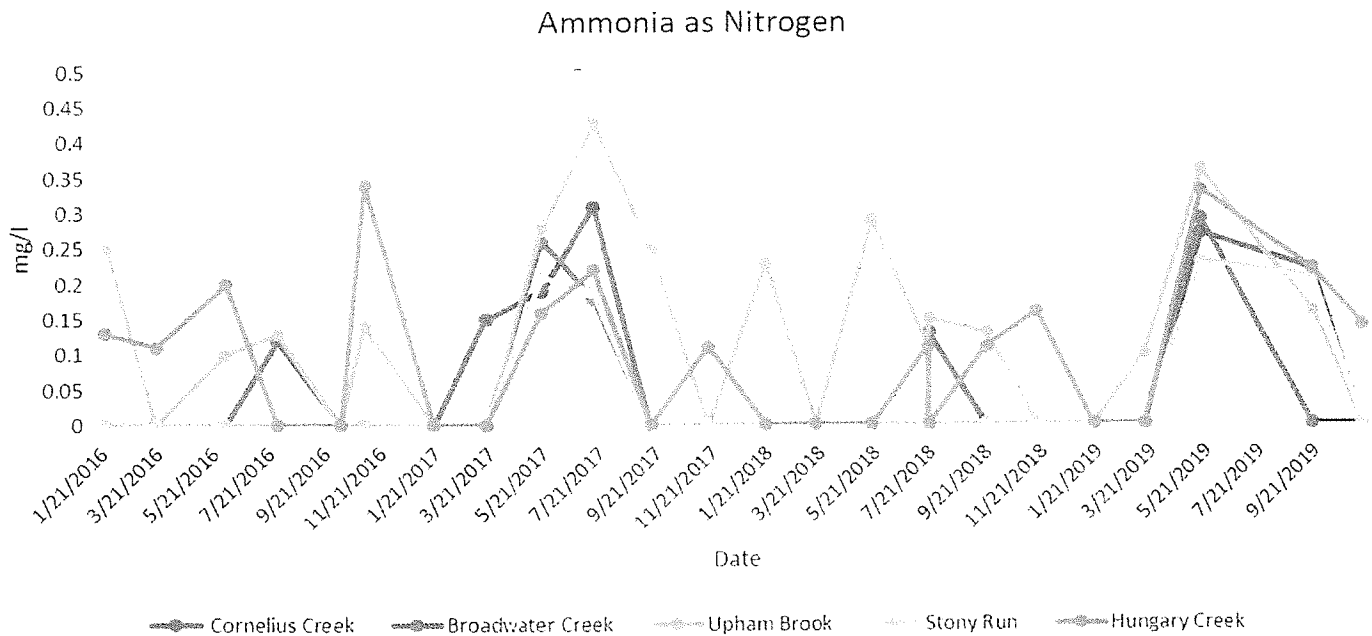
TSS has been variable across all sites with the exception of Stony Run. The stable TSS values recorded at Stony Run could be explained by the sand and cobble dominated stream which contains few fine particles. The high variability noted at Broadwater Creek, Upham Brook, and Hungary is likely correlated with precipitation events occurring recently before water samples were taken. Although a trend may be noted, more data is needed to determine if TSS is significantly increasing at Hungary Creek and/or Upham Brook over time.



# HENRICO COUNTY MS4 PROGRAM PLAN

## Ammonia as Nitrogen

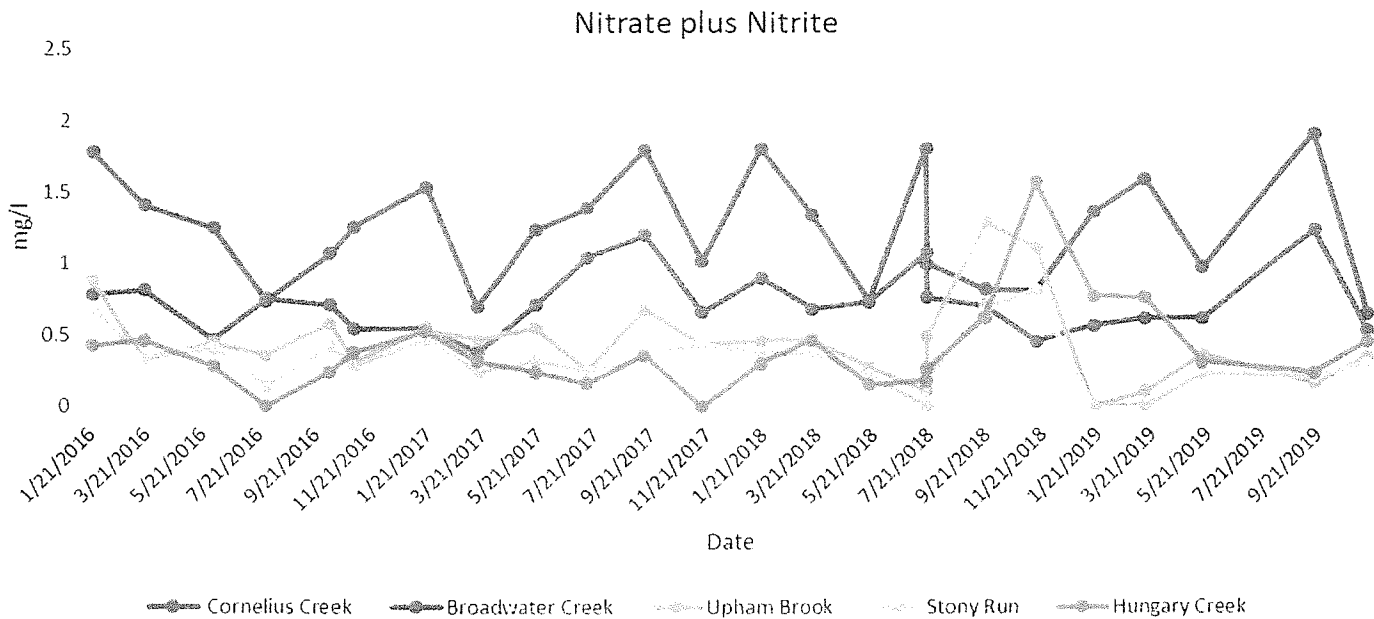
Ammonia as nitrogen has been highly variable across site. This parameter has shown spikes through the summer months of some years. More data is needed to verify this trend.



# HENRICO COUNTY MS4 PROGRAM PLAN

## Nitrate plus Nitrite

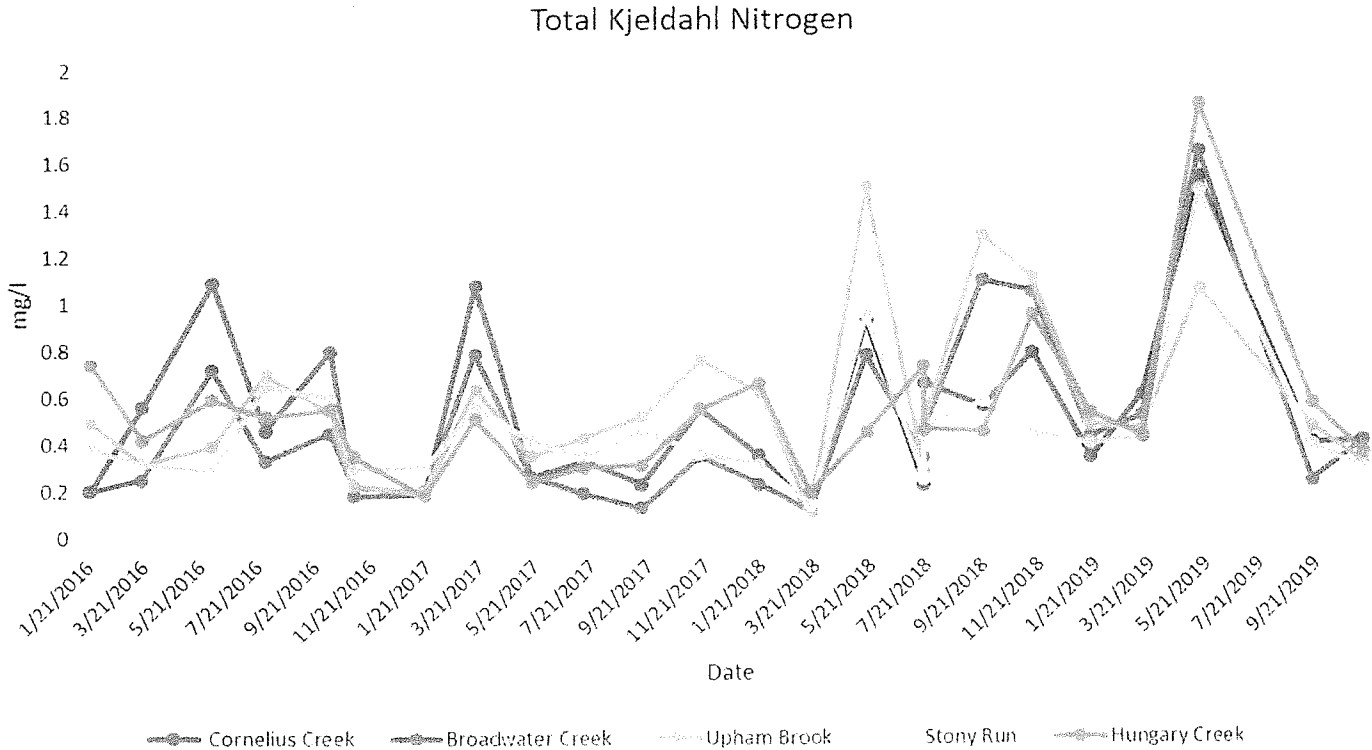
This parameter fluctuates over time, however it fairly consistent at each site. Cornelius Creek has notably higher values of Nitrate plus Nitrite.



# HENRICO COUNTY MS4 PROGRAM PLAN

## Total Kjeldahl Nitrogen

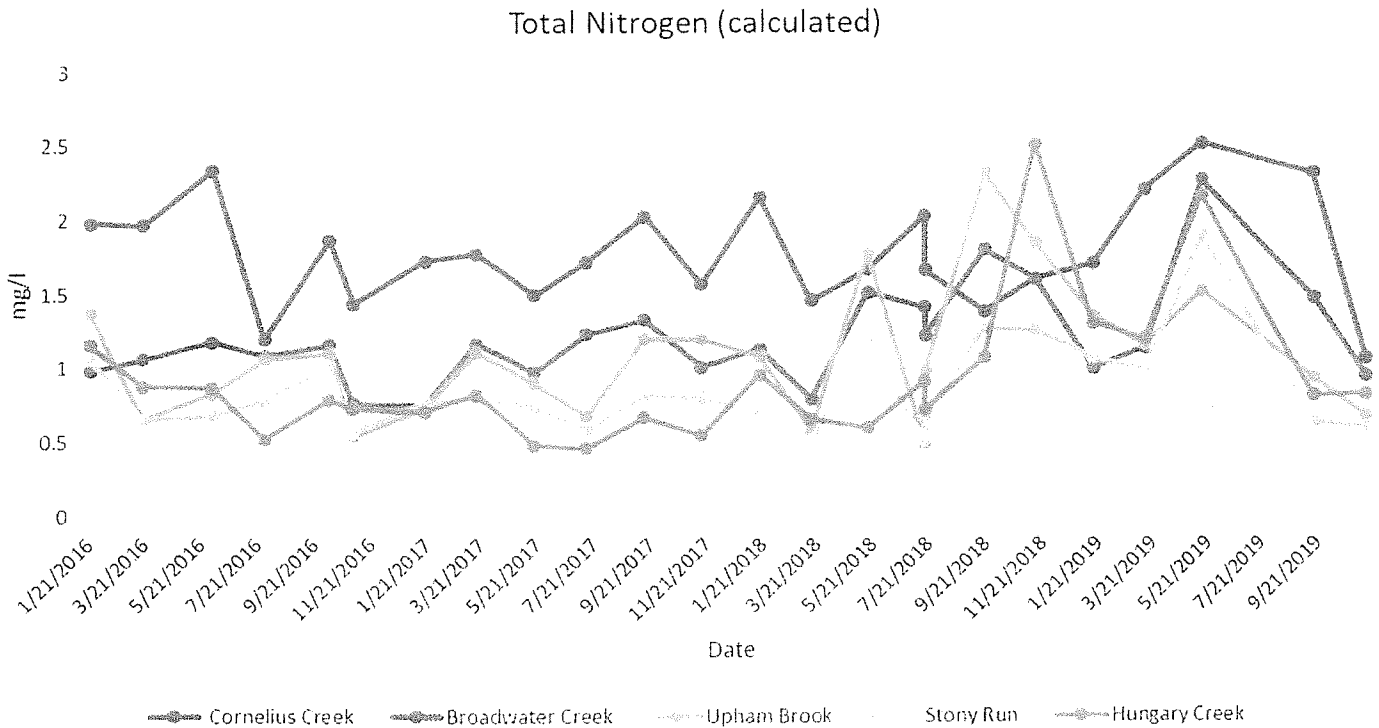
Total Kjeldahl Nitrogen appears to spike in the spring, though more data will be needed to verify this trend. This spike could result from the post-winter breakdown of organic material.



# HENRICO COUNTY MS4 PROGRAM PLAN

## Total Nitrogen

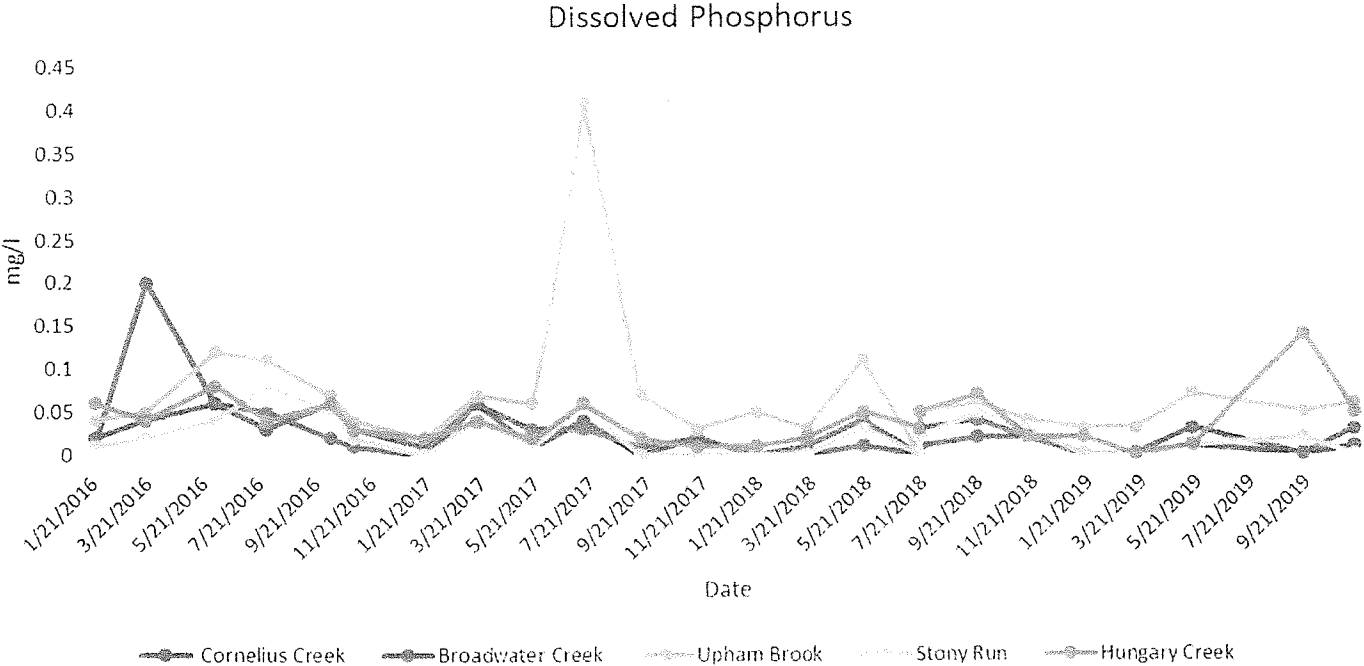
This parameter has been fairly consistent at each site. Cornelius Creek has recorded notably higher values of Total Nitrogen over the duration of the monitoring. A spike in Total Nitrogen occurred at all site except Cornelius Creek in the fall of 2018 and at all site in the spring of 2019.



# HENRICO COUNTY MS4 PROGRAM PLAN

## Dissolved Phosphorus

With the exception the July, 2017 spike observed at Upham Brook, Dissolved Phosphorus has been consistent across time and sites.

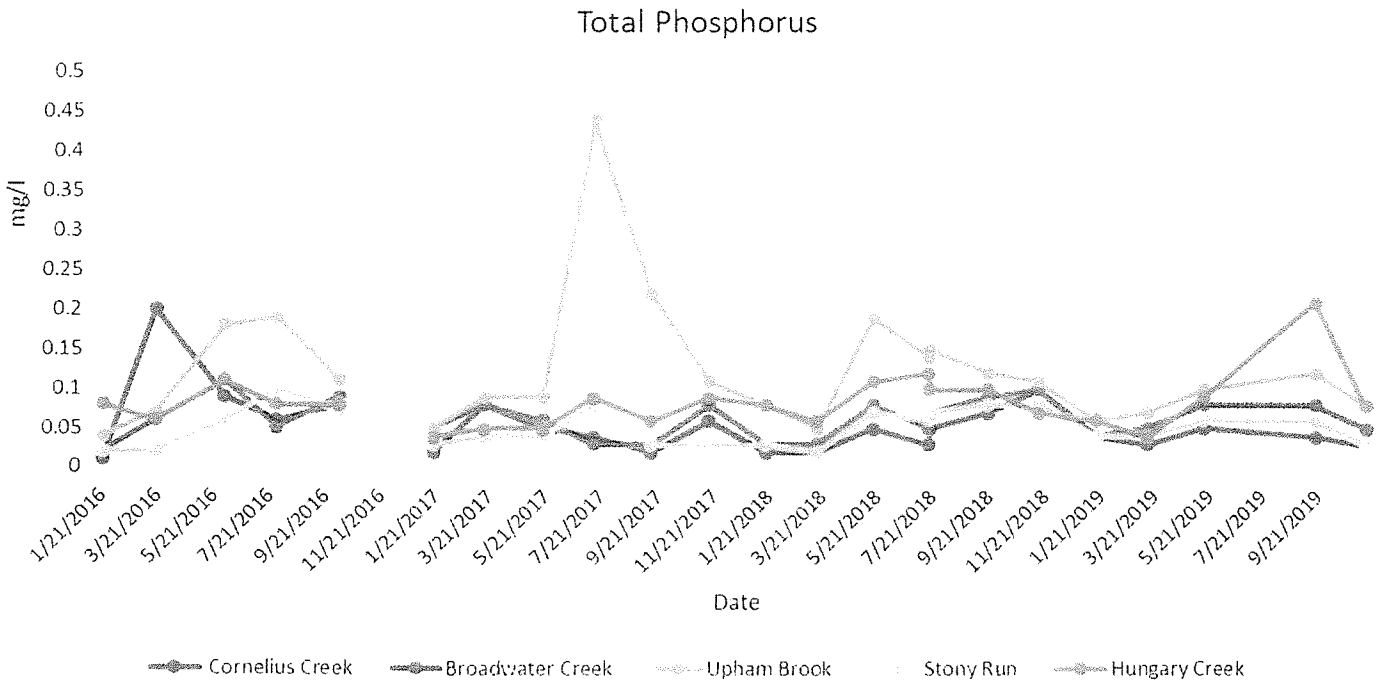




**HENRICO COUNTY MS4 PROGRAM PLAN**

**Total Phosphorus**

Upham Brook consistently contains slightly higher Total Phosphorus values when compared to the other sites, though more data is needed to verify this trend. No discernable trend has been observed over time.

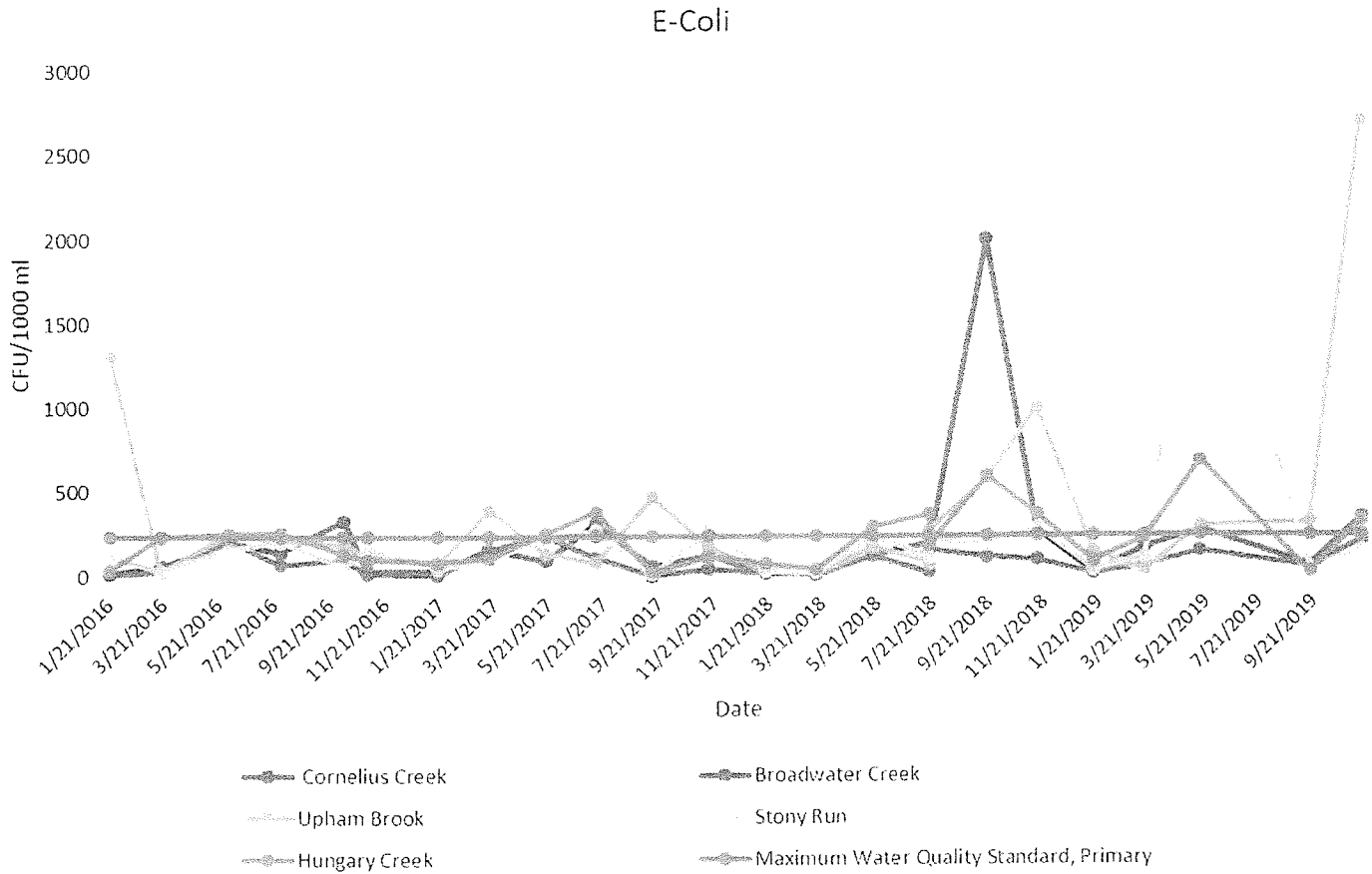


Note: Data unavailable for November 2016 sampling event.

# HENRICO COUNTY MS4 PROGRAM PLAN

## e-Coli

With the exception of Hungary Creek, all sites have exhibited at least one major spike in e-Coli over time. No discernable trend has been observed across sites or over time.



# **HENRICO COUNTY MS4 PROGRAM PLAN**

## **PART I.C.3**

### **MONITORING REQUIREMENTS STRUCTURAL AND SOURCE CONTROLS COMPLIANCE MONITORING AND TRACKING**

**Each annual report shall include a copy of the updated database in electronic format.**

A spreadsheet (.xls format) of the required data from the County's electronic database of stormwater management facilities has been included in the digital submittal of the MS4 Program Plan and Annual Report Supplements. The spreadsheet includes data for the stormwater management facilities brought online between January 1, 2019 and December 31, 2019.

**Each annual report shall include a summary of the program to ensure maintenance of private stormwater management facilities.**

It is the responsibility of the Department of Public Works to inspect all privately owned and operated facilities. All privately owned facilities will be inspected a minimum of once every 5 years. All inspections will be documented in the online database (APEX) and in GIS. Any issues found during an inspection will be documented and a punchlist of repairs will be sent to the owner of the facility through certified mail. Owners will have 30 days from receipt of the letter to contact the County BMP inspector with a plan for repairs and a tentative schedule. The owner will contact the inspector at the start of any maintenance work and at its completion. The facility will be re-inspected after completion of work. If no contact is made or action is taken by the owner within a reasonable amount of time, a second punchlist of repairs will be sent. If no contact is made or action taken by the owner after the second punchlist, then these items will be sent to the County Attorney's office for legal action. All inspections will be completed by the county BMP inspector or other qualified person (either a licensed professional or an individual holding the SWM inspector certification issued by DEQ). All owner inspections that are documented will also be recorded in APEX.

**Each annual report shall include a summary of the program to ensure maintenance of stormwater management facilities maintained by the permittee.**

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**HENRICO COUNTY MS4 PROGRAM PLAN**

**PART I.C.3**

**ANNUAL REPORT SUPPLEMENT**

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## HENRICO COUNTY MS4 PROGRAM PLAN

On-Line* County-Operated SWM Facilities Inspected and/or Maintained between January 1, 2019 and December 31, 2019			
Type	Total	Inspected	Maintained
50/10 BASIN (5)	10	10	6
50/10 UNDERGROUND (6)	13	13	2
BAYFILTER (200)	1	1	1
BAYSEPARATOR (205)	1	1	1
BIORETENTION 1 (145)	3	3	2
BIORETENTION BASIN/TRENCH (10)	9	9	5
DRY DETENTION - UNDERGROUND (178)	1	1	0
DRY SWALE 2 (151)	2	2	0
EXTENDED DETENTION BASIN (15)	31	31	23
EXTENDED DETENTION BASIN W/A SHALLOW MARSH (16)	2	2	2
EXTENDED DETENTION POND 1 (175)	1	1	0
FILTERRA (215)	27	27	24
GRASS CHANNEL (110)	1	0	0
GRASSED SWALE (20)	11	11	2
IMBRIUM JELLYFISH (250)	1	1	1
INFILTRATION BASIN/TRENCH (25)	7	7	2
PERMEABLE PAVEMENT 1 (135)	4	4	0
RETENTION BASIN (WET POND) (30)	8	8	7
SHEETFLOW TO VEGETATED FILTER OR CONSERVED OPEN SPACE 1 (105)	2	2	0
SHEETFLOW TO VEGETATED FILTER OR CONSERVED OPEN SPACE 2 (106)	2	2	2
STORMCEPTOR (225)	1	1	1
STORMFILTER (220)	4	4	0

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**HENRICO COUNTY MS4 PROGRAM PLAN**

STORMTREAT (230)	1	1	1
STORMWATER360 (235)	5	5	3
Total	148	148	85

The annual report due March 31, 2019 under this permit shall include an updated list of stormwater management facilities existing prior to the effective date of this permit.

Noted.

**HENRICO COUNTY MS4 PROGRAM PLAN**

**PART I.D.1**

**TMDL ACTION PLAN AND IMPLEMENTATION  
CHESAPEAKE BAY SPECIAL CONDITION**

The permittee shall submit the Chesapeake Bay TMDL Action Plan to the Department for review and acceptance with the annual report due March 31, 2017.

The Chesapeake Bay TMDL Action Plan was submitted to the Department as part of the annual report submitted in March 2017.

A revision to Attachment 3 and resulting changes to the Action Plan were submitted to DEQ with the Annual Report due March 31, 2020.

Beginning with the annual report due on March 31, 2018, the permittee shall include a list of control measures implemented during the reporting period and the cumulative progress toward meeting the compliance targets for total nitrogen, phosphorus, and total suspended solids.

An additional 19 septic-to-sewer connections were made during the reporting period for a total of 286 (267 have been reported previously). These additional connections result in a reduction of 170.32 pounds of TN reduction.

TN Reduction = 3.6 lbs/year/person × 2.49 persons/household × 19 households

TN reduction = 170.32 lbs/year

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**HENRICO COUNTY MS4 PROGRAM PLAN**

**PART I.D.1**

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## HENRICO COUNTY MS4 PROGRAM PLAN

In addition to the septic-to-sewer connections detailed above, the following project was implemented during the reporting period:

Project	Pollutant Reductions (lbs/year)			Completion Date
	Nitrogen	Phosphorous	Total Suspended Solids	
Virginia Home for Boys and Girls Stream Restoration	339.91	103.10	35,524.77	9/20/2019

### Cumulative Progress Toward Meeting Compliance Targets

Pollutant	Total Reduction Required During First Permit Cycle (lbs/yr)	Total Reductions Achieved to Date (lbs/yr)
Nitrogen	918.06	5,618.13
Phosphorus	176.93	668.77
Total Suspended Solids	102,340.90	324,750.75

No other control measures were implemented between January 1, 2019 and December 31, 2019. For purposes of this section of this report, *implemented* means completed.

Beginning with the annual report due March 31, 2018, each annual report shall include a list of control measures that were implemented during the reporting cycle and the estimated reduction achieved by the control. For stormwater management controls, the report shall include the information required in Part I.C.3.a) and shall include whether an existing stormwater management control was retrofitted, and if so, the existing stormwater management control type retrofit used

## HENRICO COUNTY MS4 PROGRAM PLAN

An additional 19 septic-to-sewer connections were made during the reporting period for a total of 286 (267 have been reported previously). These additional connections result in a reduction of 170.32 pounds of TN reduction.

$$\text{TN Reduction} = 3.6 \text{ lbs/year/person} \times 2.49 \text{ persons/household} \times 19 \text{ households}$$

$$\text{TN reduction} = 170.32 \text{ lbs/year}$$

In addition to the septic-to-sewer connections detailed above, the following project was implemented during the reporting period:

Project	Pollutant Reductions (lbs/year)			Completion Date
	Nitrogen	Phosphorous	Total Suspended Solids	
Virginia Home for Boys and Girls Stream Restoration	339.91	103.10	35,524.77	9/20/2019

### Cumulative Progress Toward Meeting Compliance Targets

Pollutant	Total Reduction Required During First Permit Cycle (lbs/yr)	Total Reductions Achieved to Date (lbs/yr)
Nitrogen	918.06	5,618.13
Phosphorus	176.93	668.77
Total Suspended Solids	102,340.90	324,750.75

No other control measures were implemented between January 1, 2019 and December 31, 2019. For purposes of this section of this report, *implemented* means completed.

**Beginning with the annual report due March 31, 2018, each annual report shall include a list of control measures that are expected to be implemented during**



## HENRICO COUNTY MS4 PROGRAM PLAN

the next reporting period and the expected progress toward meeting the compliance targets for total nitrogen, total phosphorus, and total suspended solids.

For purposes of this section of this report, *implemented* means completed.

The Quarter Mill Apartments Stream Restoration project is expected to be implemented during the reporting period of January 1, 2020 and December 31, 2020. The estimated completion date for this project is March 2020. This project will result in reductions of approximately:

- 1,328.59 pounds of total nitrogen,
- 535.81 pounds of total phosphorus, and
- 184,300.04 pounds of total suspended solids.

The Bretton Woods Stream Restoration project is expected to be implemented during the reporting period of January 1, 2020 and December 31, 2020. The estimated completion date for this project is October 2020. This project will result in reductions of approximately:

- 367.99 pounds of total nitrogen,
- 105.09 pounds of total phosphorus, and
- 35,846.15 pounds of total suspended solids.

The permittee shall include the following as part of its reapplication package due no later than October 3, 2019:

- (a) Documentation that sufficient control measures have been implemented (or documentation detailing that implementation will be complete by the expiration date of this state permit) to meet the compliance target identified in this Special Condition. If temporary credits or offsets have been purchased in order to meet the compliance target, the list of temporary reductions utilized to meet the 5% reduction in this state permit and a schedule of implementation to ensure a permanent 5% reduction shall be provided; and

## **HENRICO COUNTY MS4 PROGRAM PLAN**

- (b) A draft second phase Chesapeake Bay TMDL Action Plan designed to reduce the existing POC loads by an additional seven times the required reductions in loading rates using Table 2 of Part I.D.1.b) of this state permit unless alternative calculations have been provided by the Commonwealth;**
- (c) An additional 35% reduction in new sources developed between 2009 and 2014 and for which the land use cover condition was greater than 16%; and**
- (d) Accounting for any modification to the applicable loading rate provided to the permittee as a result of TMDL modification.**

The requested information was included in the permit reapplication package sent to DEQ on September 10, 2019. DEQ acknowledged receipt and deemed the reapplication package complete on September 27, 2019.

**HENRICO COUNTY  
CHESAPEAKE BAY TMDL ACTION PLAN**

**CHESAPEAKE BAY TMDL ACTION PLAN**

**SECTION 1. OVERVIEW**

Henrico County's Chesapeake Bay TMDL Action Plan (Action Plan) has been developed in accordance with the requirements of the County's MS4 Permit and the applicable recommendations contained in *Chesapeake Bay TMDL Special Condition Guidance* (Guidance), developed by the Virginia Department of Environmental Quality and dated May 18, 2015. The County's MS4 Permit requires this Action Plan to document a minimum 5% reduction of the applicable total pollutants of concern (nitrogen, phosphorus, and sediment) during the first MS4 Permit cycle (April 1, 2016 through March 31, 2020.) As stated in the Guidance, **if there are inconsistencies between the requirements described in this guidance document and the requirements in a permittee's individual permit, the individual permit is the controlling document. If additional guidance is needed concerning any inconsistencies, the permittee should contact the Department.**

**SECTION 2. MS4 PERMIT LANGUAGE**

**PART I.D. TMDL ACTION PLAN AND IMPLEMENTATION**

**1. Chesapeake Bay Special Condition**

The Commonwealth in its Phase I and Phase II Chesapeake Bay TMDL Watershed Implementation Plans (WIP) committed to a phased approach for MS4s permittees to implement necessary reductions. This state permit is consistent with the Chesapeake Bay TMDL and the Virginia Phase I and II WIPs to meet the Level 2 (L2) scoping run for existing developed lands as it represents an implementation of 5% of L2 as specified in the 2010 Phase I WIP. Conditions of future permits will be consistent with the TMDL or WIP conditions in place at the time of permit issuance.

**a) Definitions**

The following definitions apply to this state permit for the purpose of the Special Condition for Discharges in the Chesapeake Bay Watershed:

- 1) "Existing Sources" means pervious and impervious urban land uses served by the MS4 as of June 30, 2009.
- 2) "New Sources" means pervious and impervious urban land uses served by the MS4 developed or redeveloped on or after July 1, 2009.
- 3) "Transitional Sources" means regulated land disturbing activities which are temporary in nature and discharge through the MS4.

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- 4) "Pollutants of concern" or "POC" means total nitrogen, total phosphorus and total suspended solids.
- b) Chesapeake Bay Watershed TMDL Planning
- 1) No later than 24-months after the effective date of this state permit, the permittee shall develop and submit to the Department for its review and acceptance an approvable phased Chesapeake Bay TMDL Action Plan that includes:
- (a) A review of the current MS4 Program Plan including existing legal authorities and the permittee's ability to ensure compliance with this special condition;
  - (b) Identifies any new or modified legal authorities, such as ordinances, permits, orders, contracts and inter-jurisdictional agreements, implemented or needing to be implemented to meet the requirements of this special condition;
  - (c) The means and methods utilized to address discharges into the MS4 from new sources.
  - (d) An estimate of the annual POC loads discharged from the existing sources as of June 30, 2009 based on the 2009 progress run. The permittee shall utilize Table 1 and multiply the total existing acres served by the MS4 on June 30, 2009 and the 2009 Edge of Stream (EOS) Loading Rate.

<b>Table 1: Calculation Sheet for Estimating Existing Source Loads for the James River Basin</b>				
(Based on Chesapeake Bay Program Watershed Model Phase 5.3.2)				
<u>Subsource</u>	<u>Pollutant</u>	<u>Total Existing Acres Served by MS4 (6/30/09)</u>	<u>2009 EOS Loading Rate (lbs/ac/yr)</u>	<u>Estimated Total POC Load Based on 2009 Progress Run (lb/yr)</u>
Regulated Urban Impervious	Nitrogen		9.39	
Regulated Urban Pervious			6.99	
Regulated Urban Impervious	Phosphorus		1.76	
Regulated Urban Pervious			0.5	
Regulated Urban	Total Suspended		676.94	

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Impervious	Solids		
Regulated Urban Pervious			101.08

- (e) A determination of the total pollutant load reductions necessary to reduce the annual POC existing loads using Table 2 by multiplying the *Total Existing Acres Served by MS4* by the *First Permit Cycle Required Reduction in Loading Rate*.

**Table 2: Calculation Sheet for Determining Total POC Reductions Required During this State Permit Cycle for the James River Basin**  
(Based on Chesapeake Bay Program Watershed Model Phase 5.3.2)

<u>Subsource</u>	<u>Pollutant</u>	<u>Total Existing Acres Served by MS4 (6/30/09)</u>	<u>First Permit Cycle Required Reduction in Loading Rate (lbs/ac/yr)</u>	<u>Total Reduction Required During First Permit Cycle (lbs/yr)</u>
Regulated Urban Impervious	Nitrogen		0.04	
Regulated Urban Pervious			0.02	
Regulated Urban Impervious	Phosphorus		0.01	
Regulated Urban Pervious			0.002	
Regulated Urban Impervious	Total Suspended Solids		6.67	
Regulated Urban Pervious			0.44	

- (f) The means and methods, such as the management practices and retrofit programs that will be utilized to meet the required reductions identified in Part I.D.1.b)(1)(e) and a schedule to achieve those reductions. The schedule should include annual benchmarks to demonstrate the on-going progress in meeting the reductions.
- (g) The means and methods to offset the increased loads from new sources initiating construction between July 1, 2009 and June 30, 2014 that

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disturb one acre or greater as a result of the utilization of an average land cover condition greater than 16% impervious cover for the design of post development stormwater management facilities. The permittee shall utilize Table 3 to develop the equivalent pollutant load for nitrogen and total suspended solids. The permittee shall offset 5% of the calculated increased load from these new sources during the permit cycle.

- (h) The means and methods to offset the increased loads from grandfathered projects in accordance with 9VAC25-870-48, that disturb one acre or greater that begin construction after July 1, 2014 where the project utilized an average land cover condition greater than 16% impervious cover in the design of post development stormwater management facilities. The permittee shall utilize Table 3 to develop the equivalent pollutant load for nitrogen and total suspended solids.

<b>Table 3: Ratio of Phosphorus Loading Rate to Nitrogen and Total Suspended Solids Loading Rates for Chesapeake Bay Basins</b> (Based on Chesapeake Bay Program Watershed Model Phase 5.3.2)			
<u>Ratio of Phosphorus to Other POCs (Based on All Land Uses 2009 Progress Run)</u>	<u>Phosphorus Loading Rate (lbs/ac/yr)</u>	<u>Nitrogen Loading Rate (lbs/ac/yr)</u>	<u>Total Suspended Solids Loading Rate (lbs/ac/yr)</u>
James River Basin	1.0	5.2	420.9

- (i) A list of future projects and associated acreage that qualify as grandfathered in accordance with 9VAC25-870-48.
  - (j) An estimate of the expected cost to implement the necessary reductions during the permit cycle;
  - (k) An opportunity for receipt and consideration of public comment on the draft Chesapeake Bay TMDL Action Plan; and,
  - (l) A list of all comments received as a result of public comment and any modifications made to the draft Chesapeake Bay TMDL Action Plan as a result of the public comments.
- 2) As part of development of the Chesapeake Bay TMDL Action Plan, the permittee shall consider use of the following:
- (a) Implementation of BMPs on unregulated lands provided the baseline reduction is subtracted from the total reduction prior to application of the reduction towards meeting the required reductions.
  - (b) Utilization of stream restoration projects provided the baseline reduction from the unregulated acreage treated by the stream restoration project is subtracted from the total reduction prior to application of the reduction towards meeting the required reductions.

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- (c) Establishment of a memorandum of understanding (MOU) with other MS4 permittees that discharge to the same or adjacent eight digit hydrologic unit within the same basin to implement BMPs collectively. The MOU shall include a mechanism for dividing the POC reductions created by BMP implementation between the cooperative MS4s.
  - (d) Utilization of any pollutant trading or offset program in accordance with §62.1-44.19:20 through 62.1-44.19:23 et seq. of the Code of Virginia governing trading and offsetting.
  - (e) A more stringent average land cover condition based on less than 16% impervious cover for new sources initiating construction between July 1, 2009, and June 30, 2014, and all grandfathered projects where allowed by law; and
  - (f) Any BMPs installed after June 30, 2009, as part of a retrofit program may be applied towards meeting the required load reductions provided any necessary baseline reductions are not included.
- 3) The permittee shall address any modification to the TMDL or watershed implementation plan that occurs during the term of this state permit as part of its permit reapplication as required in Part II.M of this state permit.
  - 4) The Chesapeake Bay TMDL Action Plan shall become effective and enforceable upon written approval from the Department.
- c) Chesapeake Bay TMDL Action Plan Implementation
- 1) The permittee shall implement the TMDL action plan required in Part I.D.1.b)1) of this state permit according to the schedule therein. Compliance with this requirement represents adequate progress for this state permit term towards achieving TMDL wasteload allocations consistent with the assumptions and requirements of the TMDL.
  - 2) For the purposes of this state permit, the implementation of the following represents implementation to the maximum extent practicable and demonstrates adequate progress:
    - (a) Implementation of turf and landscape nutrient management plans in accordance Part I.B.2.d);
    - (b) Implementation of construction site runoff controls in Part I.B.2.a) in accordance with this state permit shall address discharges from transitional sources;
    - (c) Implementation of the means and methods to address discharges from new sources in accordance with requirements in Part I.B.2.a) for post-construction runoff from areas of new development and development on prior developed lands to offset 5% of the total increase in POC loads between July 1, 2009 and June 30, 2014 required in Part I.D.1.b)1)(g) and to offset increases in the POC load from grandfathered projects initiating

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construction after July 1, 2014 prior to completion of the project as required in Part I.D.1.b)1)(h); and,

- (d) Implementation of means and methods sufficient to meet 5% required reductions of POC loads from existing sources defined in this state permit in accordance with the Chesapeake Bay TMDL Watershed Implementation Plan as required in Part I.D.1.b)1)(e).

d) Annual Reporting Requirements

- 1) In accordance with Part I D.1.b)1), the permittee shall submit the Chesapeake Bay TMDL Action Plan with the annual report due March 31, 2017.
- 2) Beginning with the annual report due March 31, 2018, each annual report shall include a list of control measures implemented during the reporting period and the cumulative progress toward meeting the compliance targets for total nitrogen, phosphorus, and total suspended solids.
- 3) Beginning with the annual report due March 31, 2018, each annual report shall include a list of control measures that were implemented during the reporting cycle and the estimated reduction achieved by the control. For stormwater management controls, the report shall include the information required in Part I.C.3.a) and shall include whether an existing stormwater management control was retrofitted, and if so, the existing stormwater management control type retrofit used.
- 4) Beginning with the annual report due March 31, 2018, each annual report shall include a list of control measures that are expected to be implemented during the next reporting period and the expected progress toward meeting the compliance targets for total nitrogen, total phosphorus, and total suspended solids.
- 5) The permittee shall include the following as part of its reapplication package due in accordance with Part II.M:
  - (a) Documentation that sufficient control measures have been implemented (or documentation detailing that implementation will be complete by the expiration date of this state permit) to meet the compliance target identified in this Special Condition. If temporary credits or offsets have been purchased in order to meet the compliance target, the list of temporary reductions utilized to meet the 5% reduction in this state permit and a schedule of implementation to ensure a permanent 5% reduction shall be provided; and
  - (b) A draft second phase Chesapeake Bay TMDL Action Plan designed to reduce the existing POC loads by an additional seven times the required reductions in loading rates using Table 2 of Part I.D.1.b) of this state



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permit unless alternative calculations have been provided by the Commonwealth;

- (c) An additional 35% reduction in new sources developed between 2009 and 2014 and for which the land use cover condition was greater than 16%; and
- (d) Accounting for any modification to the applicable loading rate provided to the permittee as a result of TMDL modification.

**SECTION 3. APPLICABLE WASTELOAD ALLOCATIONS**

Total Nitrogen

Wasteload Allocation (lbs / year)	Watershed(s)	TMDL Report	EPA Approval Date	SWCB Approval Date
25,385.25	Chickahominy River oligohaline estuary	Chesapeake Bay TMDL	12/29/2010	N/A
150,930.68	James River upper tidal freshwater estuary	Chesapeake Bay TMDL	12/29/2010	N/A

From **Attachment A: Applicable TMDL Wasteload Allocations** in the County's MS4 Permit

Total Phosphorus

Wasteload Allocation (lbs / year)	Watershed(s)	TMDL Report	EPA Approval Date	SWCB Approval Date
13,337.88	Chickahominy River oligohaline estuary	Chesapeake Bay TMDL	12/29/2010	N/A
20,531.88	James River upper tidal freshwater estuary	Chesapeake Bay TMDL	12/29/2010	N/A

From **Attachment A: Applicable TMDL Wasteload Allocations** in the County's MS4 Permit

Total Suspended Solids

Wasteload Allocation (lbs / year)	Watershed(s)	TMDL Report	EPA Approval Date	SWCB Approval Date
522,195.38	Chickahominy River oligohaline estuary	Chesapeake Bay TMDL	12/29/2010	N/A
4,435,348.87	James River upper tidal freshwater estuary	Chesapeake Bay TMDL	12/29/2010	N/A

From **Attachment A: Applicable TMDL Wasteload Allocations** in the County's MS4 Permit

**SECTION 4. CHESAPEAKE BAY WATERSHED TMDL PLANNING**

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Henrico County's Phase One Chesapeake Bay TMDL Action Plan addresses the following:

**SECTION 4.1**

**A review of the current MS4 Program Plan including existing legal authorities and the permittee's ability to ensure compliance with this special condition.**

Henrico has reviewed its current MS4 Program Plan and has determined that the legal authorities as stated in the current MS4 Program Plan are sufficient for compliance with this special condition. Please refer to Part I.A.3 of the MS4 Program Plan for a listing of the legal authorities.

**SECTION 4.2**

**Identifies any new or modified legal authorities, such as ordinances, permits, orders, contracts and inter-jurisdictional agreements, implemented or needing to be implemented to meet the requirements of this special condition.**

As stated in Section 4.1 above, existing legal authorities are sufficient for compliance with this special condition. Therefore, no new or modified legal authorities beyond those listed in Part I.A.3 of the MS4 Program Plan are necessary.

**SECTION 4.3**

**The means and methods utilized to address discharges into the MS4 from new sources.**

The means and methods used to address discharges into the MS4 from new sources (pervious and impervious urban land uses served by the MS4 developed or redeveloped on or after July 1, 2009) are the stormwater management programs implemented since 1991. These programs applied to all development / redevelopment exceeding 2,500 square feet of land disturbance.

From 1991 and until July 1, 2014, an average land cover condition of 16% was used to compute pollutant removal requirement and for the design of required BMPs consistent with the CBPA Regulations and stormwater management regulations in place at that time. Beginning July 1, 2014, the County began

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requiring stormwater pollutant reductions consistent with the revised VSMP Regulations using the Virginia Runoff Reduction Method. Since implementing stormwater pollutant reductions programs in 1991, the County's application of those programs has been determined to be consistent with applicable laws and regulations by applicable State agencies.

Therefore, there are no additional increases in POCs from new sources that must be addressed by this TMDL Action Plan.

**SECTION 4.4**

An estimate of the annual POC loads discharged from the existing sources as of June 30, 2009 based on the 2009 progress run. The permittee shall utilize Table 1 and multiply the total existing acres served by the MS4 on June 30, 2009 and the 2009 Edge of Stream (EOS) Loading Rate.

<b>Table 1: Calculation Sheet for Estimating Existing Source Loads for the James River Basin</b>				
(Based on Chesapeake Bay Program Watershed Model Phase 5.3.2)				
<b>Subsource</b>	<b>Pollutant</b>	<b>Total Existing Acres Served by MS4 (6/30/09)<sup>1</sup></b>	<b>2009 EOS Loading Rate (lbs/ac/yr)</b>	<b>Estimated Total POC Load Based on 2009 Progress Run (lb/yr)</b>
Regulated Urban Impervious <sup>2</sup>	Nitrogen	14,187.16	9.39	133,217.06
Regulated Urban Pervious <sup>3</sup>		17,529.11	6.99	122,528.48
Regulated Urban Impervious	Phosphorus	14,187.16	1.76	24,969.33
Regulated Urban Pervious		17,529.11	0.5	8,764.56
Regulated Urban Impervious	Total Suspended Solids	14,187.16	676.94	9,603,829.01
Regulated Urban Pervious		17,529.11	101.08	1,771,842.44

- <sup>1</sup> See Attachment 1
- <sup>2</sup> See Attachment 2
- <sup>3</sup> See Attachment 2

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**SECTION 4.5**

A determination of the total pollutant load reductions necessary to reduce the annual POC existing loads using Table 2 by multiplying the *Total Existing Acres Served by MS4* by the *First Permit Cycle Required Reduction in Loading Rate*.

**Table 2: Calculation Sheet for Determining Total POC Reductions Required During this State Permit Cycle for the James River Basin**  
(Based on Chesapeake Bay Program Watershed Model Phase 5.3.2)

<u>Subsource</u>	<u>Pollutant</u>	<u>Total Existing Acres Served by MS4 (6/30/09)<sup>4</sup></u>	<u>First Permit Cycle Required Reduction in Loading Rate (lbs/ac/yr)</u>	<u>Total Reduction Required During First Permit Cycle (lbs/yr)</u>
Regulated Urban Impervious <sup>5</sup>	Nitrogen	14,187.16	0.04	567.48
Regulated Urban Pervious <sup>6</sup>		17,529.11	0.02	350.58
Regulated Urban Impervious	Phosphorus	14,187.16	0.01	141.87
Regulated Urban Pervious		17,529.11	0.002	35.06
Regulated Urban Impervious	Total Suspended Solids	14,187.16	6.67	94,628.09
Regulated Urban Pervious		17,529.11	0.44	7,712.81

<sup>4</sup> See Attachment 1

<sup>5</sup> See Attachment 2

<sup>6</sup> See Attachment 2

**SECTION 4.6**

The means and methods, such as the management practices and retrofit programs that will be utilized to meet the required reductions identified in Part I.D.1.b)(1)(e) and a schedule to achieve those reductions. The schedule should include annual benchmarks to demonstrate the on-going progress in meeting the reductions.

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Mean / Method	Type	Applicable Reductions (lbs)			Anticipated / Completion Date
		N	P	TSS	
Woodman Park Energy Dissipator <sup>7</sup>	Outfall Retrofit	86.01	10.52	3,759.53	Completed September, 2016
Jamestown Apartments <sup>8</sup>	Stream Restoration	103.73	94.04	62,069.04	Completed December, 2006
Henrico Communications <sup>9</sup>	Stream Restoration	95.83	86.89	57,345.42	Completed June, 2009
BMPs Installed prior to July 1, 2009 <sup>10</sup>	Stormwater Compliance BMPs	405.31	79.09	44,688.62	Complete
Energy Dissipators installed prior to June 30, 2014 that weren't previously claimed <sup>11</sup>	Additional Outfall Treatment	1,979.07	254.72	94,691.94	Complete
Septic-to-Sewer Connections from 2006 to 2016 <sup>12</sup>	Annual Program	2,106.54	0	0	Ongoing
Skipwith Elementary <sup>13</sup>	Stream Restoration	44.57	40.41	26,671.43	Completed May, 2012
<b>TOTAL</b>		<b>4,821.06</b>	<b>565.67</b>	<b>289,225.98</b>	

<sup>7</sup> See Attachment 3 – revised March 3, 2020

<sup>8</sup> See Attachment 4

<sup>9</sup> See Attachment 5

<sup>10</sup> See Attachment 6

<sup>11</sup> See Attachment 7

<sup>12</sup> See Attachment 8

<sup>13</sup> See Attachment 9

As shown in the table below, pollutant reductions achieved to date exceed those required during the first permit cycle. Overages will be applied to reduction requirements in future permit cycles.

Pollutant	Total Reduction Required During First Permit Cycle (lbs/yr)	Total Reductions Achieved to Date (lbs/yr)
Nitrogen	918.06	<b>4,821.06</b>
Phosphorus	176.93	<b>565.67</b>

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Total Suspended Solids	102,340.90	289,225.98
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**SECTION 4.7**

The means and methods to offset the increased loads from new sources initiating construction between July 1, 2009 and June 30, 2014 that disturb one acre or greater as a result of the utilization of an average land cover condition greater than 16% impervious cover for the design of post development stormwater management facilities. The permittee shall utilize Table 3 to develop the equivalent pollutant load for nitrogen and total suspended solids. The permittee shall offset 5% of the calculated increased load from these new sources during the permit cycle.

From 1991 and until July 1, 2014, an average land cover condition of 16% was used to compute pollutant removal requirement and for the design of required BMPs consistent with the CBPA Regulations and stormwater management regulations in place at that time. Beginning July 1, 2014, the County began requiring stormwater pollutant reductions consistent with the revised VSMP Regulations using the Virginia Runoff Reduction Method. At no time has an average land cover condition greater than 16% impervious cover been used to compute the pollutant removal requirement or the design of post development stormwater management facilities.

Since implementing stormwater pollutant reductions programs in 1991, the County's application of those programs has been determined to be consistent with applicable laws and regulations by applicable State agencies.

Therefore, there are no increases in increased loads from new sources initiating construction between July 1, 2009 and June 30, 2014 that disturb one acre or greater as a result of the utilization of an average land cover condition greater than 16% impervious cover for the design of post development stormwater management facilities that must be addressed with this action plan.

**SECTION 4.8**

The means and methods to offset the increased loads from grandfathered projects in accordance with 9VAC25-870-48, that disturb one acre or greater that begin construction after July 1, 2014 where the project utilized an average land cover condition greater than 16% impervious cover in the design of post

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development stormwater management facilities. The permittee shall utilize Table 3 to develop the equivalent pollutant load for nitrogen and total suspended solids.

From 1991 and until July 1, 2014, an average land cover condition of 16% was used to compute pollutant removal requirement and for the design of required BMPs consistent with the CBPA Regulations and stormwater management regulations in place at that time. Beginning July 1, 2014, the County began requiring stormwater pollutant reductions consistent with the revised VSMP Regulations using the Virginia Runoff Reduction Method with the exception of projects determined to be "grandfathered". "Grandfathered" projects comply with pollutant removal reductions based on the average land cover condition of 16%. At no time has an average land cover condition greater than 16% impervious cover been used to compute the pollutant removal requirement or the design of post development stormwater management facilities.

Since implementing stormwater pollutant reductions programs in 1991, the County's application of those programs has been determined to be consistent with applicable laws and regulations by applicable State agencies.

Therefore, there are no increases in increased loads from grandfathered projects in accordance with 9VAC25-870-48, that disturb one acre or greater that begin construction after July 1, 2014 that disturb one acre or greater as a result of the utilization of an average land cover condition greater than 16% impervious cover for the design of post development stormwater management facilities that must be addressed with this TMDL Action Plan.

**SECTION 4.9**

**A list of future projects and associated acreage that qualify as grandfathered in accordance with 9VAC25-870-48.**

Future Projects Determined to be Grandfathered	Project Acreage
New Dawn Assisted Living Center Master Plan	5.47
Shirley Subdivision	20.5
Rocketts Landing Section 7	1.2
Rocketts Landing Phase IV Block 19	1.287
Daves Auto Spa	1.09
Club Court Subdivision	26.3
Discount Tire at Staples Mill	1.22

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Settler's Ridge Section C	18.8
RIA Maintenance Storage Building	6.48
Savannah Station	9.74
Midview Farms Section C	4.37
Kings Manor Subdivision	2.19

**SECTION 4.10**

**An estimate of the expected cost to implement the necessary reductions during the permit cycle**

The total estimated cost of the means and methods listed in Section 4.6 that can be estimated is \$1,471,000.

**SECTION 4.11**

**An opportunity for receipt and consideration of public comment on the draft Chesapeake Bay TMDL Action Plan**

A draft of the original Chesapeake Bay TMDL Action Plan was posted on the County's website for two weeks and an opportunity for public comment was provided.

**SECTION 4.12**

**A list of all comments received as a result of public comment and any modifications made to the draft Chesapeake Bay TMDL Action Plan as a result of the public comments.**

No comments were received.

**SECTION 4.13**

**As part of development of the Chesapeake Bay TMDL Action Plan, the permittee shall consider use of the following:**

- a. Implementation of BMPs on unregulated lands provided the baseline



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reduction is subtracted from the total reduction prior to application of the reduction towards meeting the required reductions.

- b. Utilization of stream restoration projects provided the baseline reduction from the unregulated acreage treated by the stream restoration project is subtracted from the total reduction prior to application of the reduction towards meeting the required reductions.
- c. Establishment of a memorandum of understanding (MOU) with other MS4 permittees that discharge to the same or adjacent eight digit hydrologic unit within the same basin to implement BMPs collectively. The MOU shall include a mechanism for dividing the POC reductions created by BMP implementation between the cooperative MS4s.
- d. Utilization of any pollutant trading or offset program in accordance with §62.1-44.19:20 through 62.1-44.19:23 et seq. of the Code of Virginia governing trading and offsetting.
- e. A more stringent average land cover condition based on less than 16% impervious cover for new sources initiating construction between July 1, 2009, and June 30, 2014, and all grandfathered projects where allowed by law; and
- f. Any BMPs installed after June 30, 2009, as part of a retrofit program may be applied towards meeting the required load reductions provided any necessary baseline reductions are not included.

Noted.

**SECTION 4.14**

The permittee shall address any modification to the TMDL or watershed implementation plan that occurs during the term of this state permit as part of its permit reapplication as required in Part II.M of this state permit.

No modifications to the TMDL or watershed implementation plan occurred during the term of this state permit.

**SECTION 4.15**

The Chesapeake Bay TMDL Action Plan shall become effective and enforceable upon written approval from the Department.

Henrico's Chesapeake Bay TMDL Action Plan was approved by DEQ on June 19, 2017.

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**SECTION 4.16 ANNUAL REPORTING REQUIREMENTS**

**In accordance with Part I D.1.b)1), the permittee shall submit the Chesapeake Bay TMDL Action Plan with the annual report due March 31, 2017.**

Henrico County's Chesapeake Bay TMDL Action Plan was submitted with the Annual Report due March 31, 2017.

A revision to Attachment 3 and resulting revisions to this Action Plan were submitted to DEQ with the Annual Report due March 31, 2020.

**Beginning with the annual report due March 31, 2018, each annual report shall include a list of control measures implemented during the reporting period and the cumulative progress toward meeting the compliance targets for total nitrogen, phosphorus, and total suspended solids.**

Noted.

**Beginning with the annual report due March 31, 2018, each annual report shall include a list of control measures that were implemented during the reporting cycle and the estimated reduction achieved by the control. For stormwater management controls, the report shall include the information required in Part I.C.3.a) and shall include whether an existing stormwater management control was retrofitted, and if so, the existing stormwater management control type retrofit used.**

Noted.

**Beginning with the annual report due March 31, 2018, each annual report shall include a list of control measures that are expected to be implemented during the next reporting period and the expected progress toward meeting the compliance targets for total nitrogen, total phosphorus, and total suspended solids.**

Noted.

**SECTION 4.17 PLANS FOR THE NEXT PERMIT CYCLE**

**The permittee shall include the following as part of its reapplication package due in accordance with Part II.M:**

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1. Documentation that sufficient control measures have been implemented (or documentation detailing that implementation will be complete by the expiration date of this state permit) to meet the compliance target identified in this Special Condition. If temporary credits or offsets have been purchased in order to meet the compliance target, the list of temporary reductions utilized to meet the 5% reduction in this state permit and a schedule of implementation to ensure a permanent 5% reduction shall be provided;
2. A draft second phase Chesapeake Bay TMDL Action Plan designed to reduce the existing POC loads by an additional seven times the required reductions in loading rates using Table 2 of Part I.D.1.b) of this state permit unless alternative calculations have been provided by the Commonwealth;
3. An additional 35% reduction in new sources developed between 2009 and 2014 and for which the land use cover condition was greater than 16%; and
4. Accounting for any modification to the applicable loading rate provided to the permittee as a result of TMDL modification.

Noted.

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**ATTACHMENT 3  
WOODMAN PARK ENERGY DISSIPATOR**

**SECTION 1. OVERVIEW**

The Woodman Park Energy Dissipator is a retrofit of two existing MS4 outfalls located in a residential area of the County. The project routed the stormwater discharge from two drainage areas (38.99 acres total – 12.10 acres of impervious, 20.81 acres of pervious, and 6.08 acres of woods) into a newly constructed facility designed in accordance with *Virginia DEQ Stormwater Design Specification No. 2 - Sheet Flow to a Vegetated Filter Strip or Conserved Open Space* on C/D/ soils.

In accordance with the Chesapeake Bay TMDL Guidance document distributed by DEQ on May 18, 2015:

*If an oversized BMP is installed and the excess capacity has not been utilized to offset additional development, permittees may use that capacity to meet the POC reductions required under the TMDL.*

As explained in this analysis, the Woodman Park Energy Dissipator generates excess pollutant reductions that are applicable to the TMDL.

**SECTION 2. LOCATION**

The Woodman Park Energy Dissipator is located at 37.6515 / -77.4867 (latitude / longitude) in the central portion of the County.

**SECTION 3. STATUS**

Construction of the Woodman Park Energy Dissipator was completed on September 23, 2016.

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**SECTION 4. POLLUTANT LOAD REDUCTIONS**

Total Nitrogen					
Subsource	Acreage <sup>1</sup>	2009 EOS Loading Rate <sup>2</sup> (lbs/ac/yr)	Total Load (lbs/yr)	Removal Efficiency	Load Reduction (lbs/yr)
Regulated Urban Impervious	12.10	9.39	113.62	50% <sup>3</sup>	56.81
Regulated Urban Pervious	20.81	6.99	145.46	50% <sup>3</sup>	72.73
<b>TOTAL</b>					<b>129.54</b>
Total Phosphorus					
Regulated Urban Impervious	12.10	1.76	21.30	50% <sup>3</sup>	10.65
Regulated Urban Pervious	20.81	0.5	10.41	50% <sup>3</sup>	5.20
<b>TOTAL</b>					<b>15.85</b>
Total Suspended Solids					
Regulated Urban Impervious	12.10	676.94	8,190.97	55% <sup>4</sup>	4,505.04
Regulated Urban Pervious	20.81	101.08	2,103.47	55% <sup>4</sup>	1,156.91
<b>TOTAL</b>					<b>5,661.95</b>

<sup>1</sup> based on Virginia Statewide 2014 Land Cover Data Set

<sup>2</sup> from Table 1 in the County's MS4 Permit

<sup>3</sup> from the Virginia Runoff Reduction Spreadsheet

<sup>4</sup> from Figure 5 in the *Recommendations of the Expert panel to Define Removal Rates for urban Stormwater Retrofit Projects* assuming a Runoff Depth Treated of 0.5 inches – the runoff treatment depth associated with the removal rate specified in the VRRM for Total Phosphorus

**SECTION 5. COST**

The total cost (design and construction) of the Woodman Park Energy Dissipator project was \$73,886.28.

Funding for the project came from two sources:

**HENRICO COUNTY  
CHESAPEAKE BAY TMDL ACTION PLAN**

SLAF Grant = \$31,234.64  
 Environmental Fund = \$42,651.64

**SECTION 6. POLLUTANT LOAD REDUCTIONS APPLICABLE TO THE TMDL**

As stated above, a portion of the funding used for this project came from the Environmental Fund, a product of development projects' compliance with the Stream Assessment / Watershed Management Program administered by the County from August 2001 through June 2014. The Environmental Fund is used to fund watershed projects such as stream restoration, outfall retrofits, and educational programs as one aspect of stormwater compliance for development in the County. Therefore, a portion of the pollutant load reductions achieved by the Woodman Park Energy Dissipator is obligated for development project compliance and is not applicable to the pollutant load reductions associated with the TMDL.

Since development projects' contributions to the Environmental Fund were based on a rate of \$8,000.00 per pound of phosphorus, the phosphorus load reduction achieved by the Woodman Park Energy Dissipator project that is applicable to the pollutant load reductions associated with the TMDL must be reduced by 5.33 lbs/year (\$42,651.64 ÷ \$8,000.00 per pound). Discounting the load reductions for both nitrogen and sediment by a similar percentage (33.6%) results in the following pollutant load reductions that are applicable to the requirements of the TMDL:

Pollutant	Total Reduction (lbs/year)	Environmental Fund Obligation (lbs/year)	Applicable to the TMDL (lbs/year)
Total Nitrogen	129.54	43.53	<b>86.01</b>
Total Phosphorus	15.85	5.33	<b>10.52</b>
Total Suspended Solids	5,661.95	1,902.42	<b>3,759.53</b>

This document was modified as a result of errors discovered during EPA's program review in Fall of 2019. The errors involved the land cover acreages and the values for Total Suspended Solids removed.

# HENRICO COUNTY MS4 PROGRAM PLAN

## PART I.D.2

### TMDL ACTION PLAN AND IMPLEMENTATION TMDL ACTION PLANS OTHER THAN THE CHESAPEAKE BAY TMDL

The permittee shall submit the required TMDL Action Plans to the Department for review and acceptance with the annual report due March 31, 2017.

Drafts of the required TMDL Action Plans were part of the annual report submitted in March 2017.

Beginning with the annual report due on March 31, 2018, the permittee shall report on the implementation of the TMDL Action Plans and associated evaluation including the results of any monitoring conducted as part of the evaluation.

#### Chickahominy River Benthic TMDL Action Plan

BMPs, Programs, and/or Projects Implemented during the MS4 Permit Year	Implementation Details
Erosion and Sediment Control Program	This program continues to be administered and implemented in accordance with the requirements of the state law and regulations.
Stormwater Management Program	This program continues to be administered and implemented in accordance with the requirements of the state law and regulations.
Illicit Discharge Detection and Elimination Program	This program continues to be administered and implemented in accordance with the requirements of the MS4 Permit.
SWM Facility and MS4 Infrastructure Inspection and Maintenance Programs	These programs continue to be administered and implemented in accordance with state law, regulations and the MS4 Permit.

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## HENRICO COUNTY MS4 PROGRAM PLAN

### PART I.D.2

#### ANNUAL REPORT SUPPLEMENT

JANUARY 1, 2019 THROUGH DECEMBER 31, 2019

## HENRICO COUNTY MS4 PROGRAM PLAN

Public Education, Public Outreach, and Employee Training	These efforts continue to be implemented in accordance with the MS4 Permit, the MS4 Program Plan, and the Chickahominy River Benthic TMDL Action Plan.
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### Escherichia Colli TMDL Action Plan

BMPs and/or Programs Implemented during the MS4 Permit Year	Implementation Details
Illicit Discharge Detection and Elimination Program	This program continues to be administered and implemented in accordance with the requirements of the MS4 Permit.
Public Education, Public Outreach, and Employee Training	These efforts continue to be implemented in accordance with the MS4 Permit, the MS4 Program Plan, and the Chickahominy River Benthic TMDL Action Plan.
Septic Pumpout Program	This efforts continue to be implemented in accordance with the Chesapeake Bay Preservation Area Designation and Management Regulations.
Septic-to-Sewer Connection Program	This effort continues to be implemented.