


MEMORANDUM

TO: Christopher Kiwus, Associate Vice President and Chief Facilities Officer

FROM: Kim Briele, Director of Facilities Engineering and Assessment 

DATE: August 30, 2019



SUBJECT: MS4 Annual Report

Please find attached the Virginia Tech 2018 Municipal Separate Storm Sewer System (MS4) Annual Report prepared by Virginia Tech Facilities Department – Site and Infrastructure Development (SID) for submission to the Virginia Department of Environmental Quality (DEQ). This report is Virginia Tech's formal summary of compliance with the Virginia Stormwater Management Program Permit Regulations for Phase II MS4s for coverage from July 1st 2018 to June 30th 2019.

Virginia Tech is located within the 3,500-acre Stroubles Creek watershed. It is the goal of Virginia Tech's MS4 program to prevent any non-stormwater discharges into Stroubles Creek. DEQ, the governing state agency, regulates MS4s under section 9VAC25-890-40 of the Virginia Administrative Code. As a condition of the MS4 permit program, Virginia Tech is required to develop and implement its own stormwater management program to protect the Stroubles Creek watershed. Virginia Tech has developed and maintained such a program since 2003. The attached 2019 MS4 Annual Report Response is submitted to DEQ for an evaluation of the Virginia Tech MS4 program's compliance with the permit regulations, including progress towards achieving measurable goals and identifying best management practices.

Your signature on the attached 2019 MS4 Annual Report Response supports the Virginia Tech stormwater management program under the aforementioned regulations. Please feel free to contact me if you require any additional information.

If you have any questions or concerns, please do not hesitate to contact Katelyn Kast with Virginia Tech Site & Infrastructure Development (540-231-3716).

c: Katelyn Kast 
Chuck Dietz 



Site and Infrastructure Development
Sterrett Center
230 Sterrett Drive
Blacksburg, Virginia 24061

Virginia Tech MS4 Annual Report

Virginia Tech NPDES Phase II: Small MS4

VPDES Permit No. VAR 040049

Reporting Period: July 1st 2018 – June 30th 2019

10/27/2019

VAR 040049

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

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

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

A person is a duly authorized representative only if:

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

CERTIFICATION

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


Dr. Christopher H. Kiwus  Date 9/5/2019
Associate Vice President & Chief Facilities Officer
Permit Number: VAR040049 MS4 Name: Virginia Tech

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Program Plan

Summary of revisions to the MS4 Program Plan include:

1. Overall: BMPs were consolidated in the MCM 1-6 narratives to make it easier to navigate
2. Overall: Contact information for Katelyn Kast was added for further information related to the Program Plan and any of the MCMs, see page 4
3. Overall: An up-to-date organization chart was created, see page 18
4. Overall: Supporting Document links were added for each MCM
5. MCM 3: EHS and SID roles were clearly spelled out, see page 11
6. MCM 4: Language was added to reflect compliance and enforcement measures in the approved Annual Standards and Specifications, see page 12

MCM 1

High-priority stormwater issues addressed by the permittee included

1. Sediment
2. Animal Waste
3. Trash

Strategies used to communicate each high-priority stormwater issue included:

1. Sediment
 - a. Speaking engagements: (2/28/2019) Chuck Dietz spoke with 25 students in a Hydraulic Structures class (CEE 4334) about the structural aspects of the Alumni Pond. He gave the class a walking tour around Alumni Pond, and explained the water quality benefits of the pond in regards to sediment removal and trash collection, as well as the role that Site and Infrastructure Development has in stormwater management.
 - b. Speaking engagements: (4/8/2019) Katelyn Kast spoke with 20 students from a Biological Systems Engineering class about Site and Infrastructure Development and gave a tour of BMP's on campus and explained their construction and their importance for things like sediment removal.
 - c. Speaking engagements: (5/6/2019) Katelyn Kast spoke with 17 students from Annie Pearce's Materials class about Site and Infrastructure Development and gave a walking tour of 4 different BMP's on campus to explain their construction and their importance for things like sediment removal.
 - d. Alternative Materials: Educational magnets that highlighted the importance of water quality and harmful pollutants like sediment, animal waste and trash were distributed to all 9,471 incoming freshmen and on-campus residents at move-in.

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2. Animal Waste
- a. Traditional Written Materials: Throughout the Spring semester of 2019 1,542 table cards were displayed in Dining Halls throughout campus to educate the students and faculty about different stormwater pollution concerns and what they can do to help be part of the solution. This year's table card highlighted importance of picking up dog waste.
 - b. Signage: Permanent signage is placed on 32 different pet waste stations scattered around campus. These signs discuss pet wastes ability to transmit disease and pollute stormwater, and encourage the Virginia Tech campus to pick up after their pets.
 - c. Alternative Materials: Educational magnets that highlighted the importance of water quality and harmful pollutants like sediment, animal waste and trash were distributed to all 9,471 incoming freshmen and on-campus residents at move-in.
3. Trash
- a. Traditional Written Materials: (August, 2019) an educational handout about the details and importance of ReNew the New to promote trash removal from the local waterways was distributed to on campus residents and around campus classrooms.
 - b. Speaking engagements: (2/25/2019) Jessica Slagle taught 17 Virginia Tech students in a Biological Systems Engineering class about Site and Infrastructure development and how the MS4 program is implemented and ways to prevent stormwater pollution through picking up of animal waste and trash.
 - c. Alternative Materials: Educational magnets that highlighted the importance of water quality and harmful pollutants like sediment, animal waste and trash were distributed to all 9,471 incoming freshmen and on-campus residents at move-in.

MCM 2

Public Input on the MS4 program including stormwater complaints and a brief explanation of how the permittee responded can be seen in the table below.

Summary of Comments and Complaints			
Date Received	Who	Date Responded	How VTSID Responded
8-3-2018	Windell Jones	8-3-2018	Windell Jones addressed the situation and VTSID helped him determine that the sediment of concern was from a sidewalk near

	received complaint from TOB		Squires Student Center. The area was cleaned up and gutter buddies were installed until new sod was put in place.
9-19-2018	Scotty Durrell emailed Mike Vellines	9-24-2018	Complaint about sediment-laden water at the Vet Med pond. Mike and Theresa had noted unstabilized areas on their last round of inspections and did a follow-up inspection to ensure proper ESC measures were in place.
1-4-2019	Complaint from residents at Foxridge to Anthony Watson	1-4-2019	Concern of icing areas on the trail from Foxridge to VT was determined to be unavoidable due to the area bisecting a wetland that can't have the hydrology altered. The resident was notified that VT Grounds crews were aware of the area and it would be given extra attention during freezing temperatures.
1-7-2019	Tess Thompson emailed Chuck Dietz	1-23-2019	Concern of trackhoe being in a tributary of Stroubles Creek near the old Dairy Farm was determined to be an athletics department project. The workers were notified to not disturb the stream or streambanks while widening the cross country course.
3-7-2019	Scotty Durrell emailed Mike Vellines	3-7-2019	Continued concern of sediment-laden water in the Vet Med pond and Mike Vellines responded explaining that the flow was from the Airport projects on-site Sediment Basin installed per the DEQ requirements.
3-8-2019	Jennifer Boyd emailed Katelyn Kast	3-11-2019	Notification of an otter residing in the Duck Pond was assessed by VTSID and photos were obtained. Research was put in to determine if the otter was fine to stay and the department continued to watch for the otter.
4-5-2019	Mike Vellines received public complaint	4-5-2019	Sediment-laden water coming off of Smoot Drive onto the road way was controlled using a gutter buddy as quickly as possible by Copeland Construction company.
4-11-2019	Tess Thompson emailed VTSID	4-11-2019	Concern of silt fence removal at Sandy Hall and Mike Vellines responded explaining that the regulation gives them 7 days to stabilize and he completed a follow up inspection at that 7 day mark to ensure stabilization.
4-18-2019	Cully Hession emailed VTSID	4-18-2019	Concern of low grade ESC products being used at Sandy Hall, Mike Vellines responded by indicating that the products are approved by the DEQ standards.
6-13-2019	Kafi Howard emailed VTSID	6-13-2019	Mike Vellines reached out to contractors at CID construction project to clean up and prevent tracking on-to Otey street.
6-28-2019	Jennifer Boyd forwarded email from Barbara Cameron to VTSID	6-28-2019	VTSID immediately went to the location of the reported pot hole/ sink hole where Bobby Polly was investigating. Upon determining that the hole developed due to the collapse of an abandoned terracotta line the hole was filled with gravel and patched.

The permittee's MS4 program plan and stormwater website can be accessed at <https://www.facilities.vt.edu/permits-inspections/stormwater-management.html> and <https://www.facebook.com/hokiestormwater/>. The permittee's facebook page has 286 likes and had a reach of approximately 5,795 individuals, including 849 engagements.

Public Involvement activities implemented include:

1. Restoration:

- (9/29/2018) Kory Wait, the student president of EWRI-CORPI at Virginia Tech, organized a Duck Pond clean-up that was sponsored by Site and Infrastructure Development.
 - Metric: 12 Virginia Tech Students Volunteered
- (11/4/2018) The Stroubles Creek Coalition group volunteered to collect old tree tube shelters, collected bird netting from previously planted trees and participated in a stream clean-up.
 - Metric: 13 Virginia Tech Students Volunteered
- (12/2/2018) Virginia Tech Students from the Student Government Association cleaned up potential stormwater pollutants in the form of trash from Stadium Woods.
- (3/21/2019) H2Okies completed a clean-up of the Duck Pond.
 - Metric: 21 Virginia Tech student volunteered to remove 3 full bags of trash.
- (3/30/2019) Live stake trees were planted on Holten Branch, Docs Branch, and the Stream Lab on Stroubles Creek.
 - Metric: 150 volunteers worked for 4 hours to plant 3900 trees
- (4/6/2019) During the Big Event Stream Clean-up volunteers helped the Engineering Department clean up the stream at Towne Branch located in Christiansburg VA.
 - Metric: 8 Virginia Tech Students volunteered and collected 8 large bags of trash.
- (4/13/2019) Bareroot trees and container stock trees were planted, trash and invasive species were removed as part of restoration efforts along the stream.
 - Metric: 45 Cadets from the Virginia Tech ROTC planted 110 bareroot trees and 25 container stock trees, and removed 3 bags of trash.
- (5/11/2019) A stream clean up occurred at Vet Med Pond and a portion of Stroubles Creek.
 - Metric: 5 individuals volunteered.

Evaluation of Restoration as public involvement activities: Last reporting year 134 volunteers participated in restoration efforts through tree plantings to plant roughly 770 trees. During this

reporting year an increase of approximately 61 volunteers participated and 3,265 more trees were planted. The increase in trees in riparian areas is viewed as a benefit for water quality and the increase in volunteers results in more individuals being educated about stormwater awareness.

2. Educational Events:

- (7/12/2018) (2/22/2019)(2/25/2019)(3/1/2019)(3/22/2019)(3/29/2019) (5/10/2019) (5/15/2019)(5/16/2019) Katelyn Kast performed a hands-on bioretention demonstration. Students were educated on stormwater runoff and the use of stormwater facilities to help control stormwater pollution. Each student was given the opportunity to design, make and test their own stormwater facility in the form of a miniature “biofilter.”
 - Metric: 40 fifth grade students and six Virginia Tech students 60 first graders 121 fourth graders 47 high school students participated.
- (7/13/2018) Katelyn Kast, Mike Vellines and Chuck Dietz hosted students throughout fall 2018 to explain how VT Facilities and Site and Infrastructure Development operates. These students learned about Virginia Tech’s MS4 permit, ESC and Stormwater Management standards and construction on campus.
 - Metric: 3 Virginia Tech Students participated in this program.
- (8/2/2018-8/3/2018) Site and Infrastructure Development helped with an educational booth about stormwater and the importance of pet waste pick-up at Steppin’ Out.
 - Metric: 258 pet waste bag containers were distributed, along with 93 stormwater magnets and stickers and 39 educational flyers.
- (10/8/2018 and 10/15/2018) (11/2/2018) (4/15/2019 & 4/16/2019) Katelyn Kast, Hailee Goolsby and Jessica Slagle taught elementary school students about the importance of stormwater management and how pollutants can be carried with runoff to waterways. An EnviroScape was used to demonstrate how different activities contribute to water pollution and to visualize the process of water transport of pollutants, such as fertilizers, sediment, chemicals and fecal matter. Potential solutions and Best Management Practices were also discussed to show how pollutant transport can be reduced and mitigated.
 - Metric: Approximately 700 sixth graders from Montgomery County Public Schools were educated through 3 different Stormwater Day events and approximately 200 elementary students from Montgomery County were educated through the Junior Hokie Showcase.

Evaluation of Educational Events as public involvement activities: An increase in water quality can be expected due to the increased knowledge related to stormwater awareness with 158 more individuals being reached during this reporting year through educational booths.

- 38 pet waste stations, 2 of which are new during this reporting year are scattered around campus for the public's use.
 - Metric: During the reporting year 15,600 bags were used to pick up pet waste.

Evaluation of Pollution Prevention as public involvement activities: An increase in water quality can be expected due to the increased number of pet waste bags and stations being used on campus from the previous reporting year.

VTSID collaborated with the following MS4 programs for public involvement opportunities during the reporting year.

1. Town of Blacksburg
2. Town of Christiansburg
3. Montgomery County

MCM 3

The MS4 Map and Information Table were originally submitted in PDF format on July 1, 2019 and was then resubmitted via a shapefile on August 20, 2019 due to comments from an Audit on June 24 2019. The MS4 map and information table are up to date for the outfalls currently documented by Virginia Tech, but due to corrective actions produced from an Audit on June 24 2019 Virginia Tech will be completing an assessment by January 1 2020 to add additional outfalls.

The total number of outfalls screened during the reporting period as part of the dry weather screening program was 39. 31 outfalls were screened on 7/1/2019 and 7/2/2019 due to waiting for dry weather conditions. Inspection reports can be provided upon request.

A list of illicit discharges to the MS4 can be seen in the below table.

Summary of Illicit Discharges					
Observed Date	Date Closed	Illicit Discharge Description	Location	Who Discovered	Resolved/Follow-Up Activities
1/23/2019	1/24/2019	Sanitary Sewage Spill	Creek behind Fleet Services and Grounds Properties	VT Employee Bobby Polly based on emergency phone call	VTSID was notified by Bobby Polly on 1/24/19 about the spill and Kenny Osborne with EHS will report to DEQ. Photos of the illicit discharge event are on the KLK Desktop. The discharge was caused by blockage of a line between PD/food service manhole and a town resident's property.
1/29/2019	2/26/2019	White Substance at Storm Drain	Storm drain by the Foundry	Emergency phone call to VT EHS	EHS received a call to report white substance at a storm drain by the Foundry. An email was sent to Alan Druschitz (building contact) on 1/30/19

					asking for information on the substance. The substance was determined to be fused silica that was spilt during removal from the site and was cleaned up by the deadline (2/26). All waste will now be disposed of in appropriate dumpster and filter removed. Photos of the discharge are on the KLK Desktop where a filter bag that was in can be seen, all fused silica was contained in this filter bag. To follow up, SID will do routine drive-bys to ensure proper disposal of fused silica.
1/30/2019	1/31/2019	Water Main Break	Between Cowgill Hall and Burchard Hall	Emergency phone call to Bobby Polly by VT staff	Bobby Polly's crew was on site immediately to tend to the water main break. Photos of the illicit discharge are on the KLK desktop.
3/14/2019	3/14/2019	Water Main Break	CID/GLC Construction Site	Phone call to VT Project Manager by the contractor crew on site	The CID/GLC construction site flooded due to a water main break from active construction at CID. Bags were used for dewatering and removing sediment - laden water, and debris around inlets were cleaned up. Photos of the illicit discharge are on the KLK desktop.
3/19/2019	3/20/2019	Muddy/Turbid Discharge	Duck Pond	Call from a resident to the Town of Blacksburg that Kafi Howard then relayed to VTSID	There was muddy water reported entering the Duck Pond. The determined source was pumping an excavation at CID. The pump was turned off immediately and the system was set up properly. Mike Vellines did a follow-up on his normal inspection the next day.

MCM 4

The Virginia Tech Annual Standards and Specifications for Erosion and Sediment Control (ESC) and Stormwater Management (SWM) are integral components of Virginia Tech's design, construction, and maintenance of the University's facilities and campuses. The Virginia Tech Annual Standards and Specifications for ESC and SWM are administered by Virginia Tech Site & Infrastructure Development and apply to all design, construction, and maintenance activities on property owned by Virginia Tech, either by its internal workforce or contracted to external entities. The Virginia Tech Annual Standards and Specifications for ESC and SWM are submitted to the Virginia Department of Environmental Quality (DEQ) for review and approval on an annual basis. Virginia Tech shall ensure that project-specific plans are developed and implemented in accordance with the Virginia Tech Annual Standards and Specifications for ESC and SWM.

The total number of inspections conducted on active construction sites within the reporting year are listed in the below table.

ESC Construction Inspections		
Project Name	Total Inspections	Final Inspection Date
VTES Lane Substation	22	Active
Tom's Creek Landfill	24	Active
Smoot	26	Active
RRAB	25	Active
Pritchard Prairie	22	3/4/2019
MRL	9	Active
CID	11	Active
Challenge Course	26	6/12/2019
Athletic Soil Stockpile	24	Active
Airport T-Hangar	27	6/17/2019
Airport Runway (3 phases)	53	Active
Airport Hangar Site Development	23	6/17/2019
Rector Field House	5	9/10/2018
Unmanned Aerial Vehicle Park	2	7/27/2018
Hahn Pedestrian Tunnel	6	9/26/2018
Total Inspections	305	

Enforcement actions:

9/20/2018: Mike Vellines issued a Notice to Comply for the construction of the Prichard Prairie Quad. A curb was constructed without proper review and approval and an underdrain was installed without proper review and approval

MCM 5

261 total inspections were conducted during the reporting year for stormwater management facilities owned and operated by Virginia Tech. Detailed inspection reports can be provided upon request. Attached in Appendix A is the spreadsheet of all stormwater management facilities.

Significant maintenance, repair and retrofit activities performed on stormwater management facilities owned or operated by Virginia Tech include:

1. VTES

- The VTES Pond Channel repair project was to fix the erosion in the two channels that drained into the dry pond. The area experiences high flow velocities and volumes and the channels were continuing to erode. This project re-graded the channels and installed a pretreatment area as well as Flexamat along the channel to prevent erosion. There were rip-rap berms added with check dams to slow the water down as well as create a meander as it flowed through the longer channel. Grass seed was applied under the Flexamat and will grow up over time and cover the Flexamat so it will look like a grass channel.

2. HABB1

- The HABB1 Bioretention had become overgrown and was having issues with the flow channelizing because the mulch did not stay where it was supposed to during heavy flows. The media was also slightly clogged. This project involved fixing issues that had developed but also retrofitting the bioretention from the older specifications to the current specifications to increase its phosphorus removal rate and earn VT some credits that can be used on upcoming projects in the area. This project gained VT 0.79 lbs/yr of phosphorus removal. The project included a new liner, pretreatment areas at the 3 inlets, new underdrains, new media, and sod with trees in the basin and bushes around the edges.

3. Henderson

- The Henderson Bioretention had become overgrown and the media had become clogged. Part of the reason for clogging was that there was erosion on the banks as the slopes were too steep for mulch to hold. The maintenance that was completed involved excavating all of the media down to the liner and reshaping the basin to allow for less steep slopes. The liner was then replaced and the bioretention was then re-installed with all new underdrains, gravel, and media. A pretreatment area was added to catch fines and trash before it made it into the bioretention area. The top was then sodded with a few trees planted in the middle and bushes planted around the edges to prevent students from walking through the facility. The project added a couple trench drains and a set of stairs to prevent erosion from foot-traffic and to capture runoff from a sloped

sidewalk and convey it into the bioretention without it eroding the side slopes as it previously had.

The permittee electronically reported BMP's using the DEQ BMP Warehouse on March 20, 2018, a confirmation email received from DEQ on 3/20/2018 can be provided upon request.

MCM 6

SWPPPs modified for the rationale of any high priority facilities delisted include the following:

1. Agronomy Research Barns on Prices Fork Road
2. Large Equipment Storage at Old Mill Road
3. Glade Road Research Center
4. Virginia Tech Electric Service

After an internal review conducted by VTSID it was determined that these four locations no longer fit the description of High Priority Facilities described in Part I E 6 c.

Updated dates of all approved Nutrient Management Plans can be found in the table below:

Nutrient Management Plans						
Department	Area (Acres)	Issue Date	Expiration Date	Category	Contact Name	Contact Information
CALS Livestock Plan for Campus and Montgomery County Lands	1521.4	1/1/2019	1/1/2020	Agriculture	Dr. Allen Grant	540-231-41529 kentland@vt.edu
Virginia Tech Athletic Department	31.3	2/1/2019	2/1/2022	Turf & Landscape	Casey Underwood Emerson Pulliam	540-231-6067 caunderw@vt.edu 540-231-2840 emerson@vt.edu
Golf Course	18.5	2/1/2019	2/1/2022	Turf & Landscape	Jason Ratcliff	540-231-5619 jratclif@vt.edu
Virginia Tech Campus Grounds	174	2/1/2019	2/1/2022	Turf & Landscape	Steve Perfater	540-231-6973 sperfater@vt.edu
Hahn Horticulture Garden	3	8/1/2018	8/1/2021	Turf & Landscape	Dr. Holly Scoggins Dr. Shawn Askew	540-231-5783 hollysco@vt.edu 540-231-5807 saskew@vt.edu
Virginia Tech Recreational Sports	27	2/1/2019	2/1/2022	Turf & Landscape	Chad Kropff	540-231-1467 chadk66@vt.edu
Virginia Tech Dairy and Animal and Poultry Sciences	1429	1/1/2019	1/1/2020	Agriculture	Dr. Allen Grant	540-231-41529 kentland@vt.edu
Turfgrass Research Center	20	3/1/2019	3/2/2022	Turf & Landscape	Dr. Michael Evans Jon Dickerson	540-231-9775 mrevans1@vt.edu 540-231-6113 dickersj@vt.edu
Northern Piedmont AREC	268	9/1/2018	9/2/2021	Turf & Landscape	Steve Gulick	540-672-2660 sgulick@vt.edu

Urban Horticulture Center	15	4/1/2019	4/2/2022	Turf & Landscape	Dr. Michael Evans John James	540-231-9775 mrevans1@vt.edu 540-231-2683 jojames@vt.edu
Kentland Managed Lands	85.6	4/15/2019	4/14/2022	Turf & Landscape	Dwight Paulette	540-731-1289 kentland@vt.edu
Glade Road Research Center	6.3	4/1/2019	4/2/2022	Turf & Landscape	Dr. Michael Evans Kevin Hessler	540-231-9775 mrevans1@vt.edu 540-320-1276 khensler@vt.edu
Alson H. Smith, Jr AREC – Winchester	52.4	2/10/2019	2/11/2022	Turf & Landscape	Dr. Tony Wolf	540-869-2560 vitis@vt.edu
Eastern Shore AREC	117	3/16/2019	3/15/2022	Turf & Landscape	Steven Rideout	757-414-0724 srideout@vt.edu
Eastern Virginia AREC	152	9/9/2018	9/10/2021	Turf & Landscape	Robert Pitman	804-333-3485 rpitman@vt.edu
Hampton Roads AREC	40.25	7/1/2018	7/2/2021	Turf & Landscape	Dr. Pete Shultz	757-363-3900 schultzp@vt.edu
Middleburg AREC	268.6	7/1/2018	7/2/2021	Turf & Landscape	Ryan Brooks	540-687-3521 MAREC@vt.edu
Reynolds Homestead AREC	2.73	12/1/2018	12/1/2021	Turf & Landscape	Dr. Kyle Peer	276-694-4135 krpeer@vt.edu
Shenandoah Valley AREC	616.1	2/1/2019	2/2/2022	Agriculture	Lee Wright	540-377-2255 lrite@vt.edu
Southern Piedmont AREC	340	3/1/2019	3/2/2022	Agriculture	Dr. Carl Wilkinson	434-292-5331 wilki@vt.edu
Southwest AREC	106.4	1/15/2019	1/14/2022	Agriculture	Lee Wright	276-944-2203 lrite@vt.edu
Tidewater AREC	245	12/1/2018	12/31/2020	Agriculture	David Langston	757-657-6450 dblangston@vt.edu

The training events conducted within the reporting year can be found in the below table:

Stormwater Training			
Training Event Title	Objective	Date of Event	Number of Individuals Trained
Power House SWPPP Training	Train employees about the SWPPP and describe the employee's responsibility to prevent stormwater pollution.	7/23/2018	19
Quarry SWPPP Training	Train employees about the SWPPP and describe the employee's responsibility to prevent stormwater pollution.	1/22/2019	6

Stormwater Training for Housekeeping Services Staff	Educate Housekeeping Staff about stormwater runoff, as well as how to reduce and prevent stormwater pollution.	6/10/2019	91
Power House SWPPP Training	Train employees about the SWPPP and describe the employee's responsibility to prevent stormwater pollution.	6/17/2019	21
Stormwater Training for Dining Hall Employees	Educate the dining hall staff about stormwater runoff, as well as how to reduce and prevent stormwater pollution.	All year long	1,694

TMDL

Status report on the implementation:

- Implementation of the 2013-2018 approved TMDL action plan is progressing and updates to the TMDL action plan will be complete by May, 1 2020.
- Implementing new BMPs such as riparian buffers and credit from enforcing a stricter threshold related to land disturbance are being researched.
- Updated training will continue to be developed and delivered to those operating Street Sweepers and cleaning out storm sewer inlets.

Actions conducted to implement local TMDL action plan:

- Street Sweeping: 63,725 pounds were removed through street sweeping during the reporting year, which results in 6.69 tons of sediment removed. Street sweeper logs can be provided upon request.
- New reporting logs were created and distributed for street sweeping and sewer inlet clean-outs to ensure improved documentation. The updated logs can be provided upon request.



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Appendix A

BMP	BMP Name	BMP Status	BMP Type	Lat	Long	Perv. Drain Area	Imperv. Drain Area	Total Acres	Date Added	HUC	Impaired Water	Operator or Private owned?	Maintenance	Date of Last Insp.
01	Lane Stadium - Extended Detention Basin	Existing	Extended Detention	37.2190N	80.4169W	1.06	0.05	1.11	06/2010	NE59	Stroubles Creek	Operator-owned	N	3/20/2019
02	Chicken Hill Underground Detention Basin	Existing	Underground Stormwater Detention	37.2173N	80.4183W	3.35	7.15	10.5	01/2012	NE59	Stroubles Creek	Operator-owned	N	1/8/2019
04	Vet Med - Retention Pond	Existing	Retention Pond	37.2164N	80.4259W	312.2	119.5	431.7	06/2005	NE59	Stroubles Creek	Operator-owned	N	3/20/2019
05	Vet Med - Detention Pond	Existing	Detention Pond	37.2158N	80.4309W	457.5	148.3	605.8	06/2005	NE59	Stroubles Creek	Operator-owned	N	3/20/2019
07	Smithfield Lot Bioretention Pretreatment	Existing	Bioretention Pretreatment	37.2229N	80.4295W	0.36	1.03	1.39	06/2010	NE59	Stroubles Creek	Operator-owned	N	3/20/2019
08	Smithfield Lot Bioretention	Existing	Bioretention	37.2230N	80.4296W	0.49	1.04	1.53	07/2007	NE59	Stroubles Creek	Operator-owned	N	3/20/2019
09	Smithfield Lot Extended Detention1	Existing	Extended Detention	37.2233N	80.4295W	0.09	0.16	0.25	07/2007	NE59	Stroubles Creek	Operator-owned	N	3/20/2019
10	Smithfield Lot Extended Detention2	Existing	Extended Detention	37.2238N	80.4292W	0.22	0.27	0.49	07/2007	NE59	Stroubles Creek	Operator-owned	N	3/20/2019

11	Duck Pond Overflow Lot - Extended Detention	Existing	Extended Detention	37.2230N	80.4307W	0.43	1.83	2.26	06/2005	NE59	Stroubles Creek	Operator-owned	N	3/20/2019
13	Oak Lane (SPH) - Extended Detention Basin	Existing	Extended Detention	37.2248N	80.4381W	6.89	4.31	11.2	06/2005	NE59	Stroubles Creek	Operator-owned	N	3/20/2019
14	Alumni Pond	Existing	Enhanced Extended Detention	37.2282N	80.4281W	15.8	28.0	43.78	01/2012	NE59	Stroubles Creek	Operator-owned	N	3/20/2019
15	Grove Lane Extended Detention	Existing	Extended Detention	37.2230N	80.4278W	33.5	28.2	61.7	06/2005	NE59	Stroubles Creek	Operator-owned	N	3/20/2019
16	Life Sciences - Green Roof Extension 1	Existing	Green Roof	37.2211N	80.4245W	0	0.5	0.5	06/2010	NE59	Stroubles Creek	Operator-owned	N	3/20/2019
17	Life Sciences - Green Roof Extension 2	Existing	Green Roof	37.2208N	80.4246W	0	0.2	0.2	06/2010	NE59	Stroubles Creek	Operator-owned	N	3/20/2019
18	Payne Detention Basin	Existing	Underground Detention	37.2253N	80.4212W	3.16	2.13	5.29	06/2005	NE59	Stroubles Creek	Operator-owned	N	1/8/2019
19	Henderson Hall Bioretention Filter	Existing	Bioretention	37.2306N	80.4161W	2.32	1.26	3.58	07/2011	NE59	Stroubles Creek	Operator-owned	N	3/20/2019
20	New Hall West 1	Existing	Bioretention	37.2221N	80.4228W	0	0.3	0.3	01/2012	NE59	Stroubles Creek	Operator-owned	N	3/20/2019
21	New Hall West 2	Existing	Bioretention	37.2224N	80.4222W	0	0.4	0.4	01/2012	NE59	Stroubles Creek	Operator-owned	N	3/20/2019
22	Horse Exhibit - Livestock Arena	Existing	Extended Detention	37.2203N	80.4405W	4.93	0.87	5.8	06/2005	NE59	Stroubles Creek	Operator-owned	N	3/20/2019
23	VTTES - Extended Detention	Existing	Extended Detention	37.2113N	80.4128W	28.32	8.58	36.9	06/2005	NE59	Stroubles Creek	Operator-owned	N	3/20/2019
24	Library Storage - Extended Detention	Existing	Extended Detention	37.2128N	80.4113W	10.97	2.73	13.7	06/2005	NE59	Stroubles Creek	Operator-owned	N	3/20/2019
27	ICTAS II - Bioretention	Existing	Bioretention	37.2218N	80.4261W	0.05	0.28	0.33	07/2011	NE59	Stroubles Creek	Operator-owned	N	3/20/2019

28	HABBI Bioretention	Proposed	Bioretention	37.2201N	80.4274W	0.7	0.69	1.39	7/2015	NE59	Stroubles Creek	Operator-owned	N	3/20/2019
29	SW/CP Extended Detention	Existing	extended detention	37.2213N	80.4306W	3.25	1.31	4.56	11/2013	NE59	Stroubles Creek	Operator-owned	N	3/20/2019
30	IDRF Retention Pond	Existing	Retention Basin	37.2169N	80.4295W	6.61	8.17	14.78	05/2012	NE59	Stroubles Creek	Operator-owned	N	
34	Lower Chicken Hill WQU	Existing	Underground WQU	37.2171N	80.4184W	3.35	7.15	10.5	01/2012	NE59	Stroubles Creek	Operator-owned	N	1/8/2019
35	New Hall West 3	Existing	Bioretention	37.2225N	80.4224W	0	0.3	0.3	01/2012	NE59	Stroubles Creek	Operator-owned	N	3/20/2019
36	New Hall West 4	Existing	Bioretention	37.2220N	80.4227W	0	0.3	0.3	01/2012	NE59	Stroubles Creek	Operator-owned	N	3/20/2019
37	McComas Filterra Unit	Existing	MTD Filterra Unit	37.2197N	80.4230W	0.3	0.4	0.7	07/2011	NE59	Stroubles Creek	Operator-owned	N	3/20/2019
38	Football Locker Room WQU	Existing	Underground WQU	37.2226N	80.4178W	0.70	2.6	3.30	01/2012	NE59	Stroubles Creek	Operator-owned	N	1/8/2016
39	ICTAS II - Rain Garden	Existing	Bioretention	37.2221N	80.4258W	0	0.15	0.15	07/2011	NE59	Stroubles Creek	Operator-owned	N	3/20/2019
41	MMF Bioretention Filter	Existing	Bioretention	37.2148N	80.4172W	10.25	1.37	11.62	09/2011	NE59	Stroubles Creek	Operator-Owned	N	3/20/2019
42	West End Bioretention Filter	Existing	Bioretention	37.2236N	80.4221W	0.1	0.19	0.29	01/2012	NE59	Stroubles Creek	Operator-owned	N	3/20/2019
43	West End Filterra	Existing	MTD Filterra Unit	37.2239N	80.4221W	0.06	0.59	0.65	01/2012	NE59	Stroubles Creek	Operator-owned	N	3/20/2019
44	Roller Hockey Rink WQU	Existing	MTD Stormceptor Underground WQU	37.2231N	80.4172W	2.60	4.2	6.80	01/2012	NE59	Stroubles Creek	Operator-owned	N	1/8/2016
45	Visitor's Center - Bioretention Filter 1	Existing	Bioretention	37.2306N	80.4351W	0.9	0.47	1.37	07/2012	NE59	Stroubles Creek	Operator-owned	N	3/20/2019

46	Visitor's Center - Bioretention Filter 2	Existing	Bioretention	37.2310N	80.4345W	0.34	0.14	0.48	07/2012	NE59	Stroubles Creek	Operator-owned	N	3/20/2019
47	Visitor's Center - Bioretention Filter 3	Existing	Bioretention	37.2301N	80.4348W	0.47	0.16	0.63	07/2012	NE59	Stroubles Creek	Operator-owned	N	3/20/2019
48	Visitor's Center - Bioretention Filter 5	Existing	Bioretention	37.2301N	80.4332W	1.53	0	1.53	07/2012	NE59	Stroubles Creek	Operator-owned	N	3/20/2019
49	ASA - Underground Storage Tank 1	Existing	MTD Underground Detention Center	37.2315N	80.4229W	0.11	1.15	1.26	01/2012	NE59	Stroubles Creek	Operator-owned	N	1/28/2019
50	ASA - Underground WQU 1	Existing	MTD Underground WQU	37.2315N	80.4229W	0.11	1.15	1.26	01/2012	NE59	Stroubles Creek	Operator-owned	N	1/28/2019
51	ASA - Underground Storage Tank 2	Existing	MTD Underground Detention Center	37.2312N	80.4231W	0.06	0.86	0.92	01/2012	NE59	Stroubles Creek	Operator-owned	N	1/28/2019
52	ASA - Underground WQU 2	Existing	MTD Underground WQU	37.2312N	80.4232W	0.06	0.86	0.92	01/2012	NE59	Stroubles Creek	Operator-owned	N	1/28/2019
53	ASA - Biofilter	Existing	MTD WQU - Contech Urbangreen Biofilter	37.2311N	80.4237W	0.1	0.18	0.28	01/2012	NE59	Stroubles Creek	Operator-owned	N	1/28/2019
54	SPE Filterra Unit 1	Existing	MTD Filterra Unit	37.2261N	80.4371W	0.11	0.42	0.53	08/2013	NE59	Stroubles Creek	Operator-owned	N	3/20/2019
55	SPE Filterra Unit 2	Existing	MTD Filterra Unit	37.2254N	80.4367W	0.15	0.52	0.67	08/2013	NE59	Stroubles Creek	Operator-owned	N	3/20/2019
56	SPE Underground Detention Piping	Existing	Underground Detention	37.2252N	80.4353W	0.51	0.35	0.86	08/2013	NE59	Stroubles Creek	Operator-owned	N	1/7/2019

57	VMIA - Detention Swale	Existing	Detention Swale	37.2175N	80.4266W	0.09	0.25	0.34	11/2012	NE59	Stroubles Creek	Operator-owned	N	3/20/2019
58	VMIA - Filterra Unit	Existing	MTD Filterra Unit	37.2180N	80.4266W	0.01	0.23	0.24	11/2012	NE59	Stroubles Creek	Operator-owned	N	1/7/2019
59	Dairy Darn Extended Detention	Existing	Extended Detention	37.2005N	80.5775W	0	8.49	34.91	7/2016	NE60	Stroubles Creek	Operator-owned	N	6/4/2019
60	CFTA Water Quality Unit 1	Existing	MTD Stormceptor Underground WQU	37.2310N	80.4173W	2.9	4.43	7.33	07/2013	NE59	Stroubles Creek	Operator-owned	N	1/8/2019
61	CFTA Water Quality Unit 2	Existing	MTD Stormceptor Underground WQU	37.2316N	80.4169W	1.94	1.82	3.76	07/2013	NE59	Stroubles Creek	Operator-owned	N	1/8/2019
62	CFTA Underground Detention	Existing	MTD Underground Detention	37.2317N	80.4170W	1.94	1.82	3.76	07/2013	NE59	Stroubles Creek	Operator-owned	N	1/8/2019
64	Oil/Water Separator at Perry Street Parking Garage	Existing	MTD Underground WQU Hydrodynamic Separator	37.2310N	80.4257W	0	-	-	05/2011	NE59	Stroubles Creek	Operator-owned	N	1/8/2019
65	VT Airport Extended Detention Basin	Existing	Extended Detention	37.2055N	80.4114W	5.69	2.44	8.13	06/2005	NE60	Stroubles Creek	Privately-owned	Y	3/20/2019
66	Upper Quad Bioretention 1	Existing	Bioretention	37.2304N	80.4190W	0	0.3	0.3	02/2018	NE59	Stroubles Creek	Operator-owned	N	3/20/2019
67	Upper Quad Bioretention 2	Existing	Bioretention	37.2302N	80.4193W	0	0.4	0.4	02/2018	NE60	Stroubles Creek	Operator-owned	N	3/20/2019

68	Upper Quad Underground Detention	Existing	MTD Underground Detention	37.2306N	80.4194W	0	0.9	0.9	02/2018	NE61	Stroubles Creek	Operator- owned	N	
71	Drillfield Road Improvements Filterra Unit 1	Existing	MTD Filterra Unit	37.2294N	80.4213W	0.06	0.24	0.3	4/2016	NE59	Stroubles Creek	Operator- owned	N	3/20/2019
72	Drillfield Road Improvements Filterra Unit 2	Existing	MTD Filterra Unit	37.2279N	80.4198W	0.22	0.19	0.41	4/2016	NE59	Stroubles Creek	Operator- owned	N	3/20/2019
73	IATF Filterra Unit 1	Existing	MTD Filterra Unit	37.2212N	80.4173W	0	0.24	0.24	9/2015	NE59	Stroubles Creek	Operator- owned	N	3/20/2019
74	IATF Filterra Unit 2	Existing	MTD Filterra Unit	37.2212N	80.4172W	0	0.19	0.19	9/2015	NE59	Stroubles Creek	Operator- owned	N	3/20/2019
75	IATF Filterra Unit 3	Existing	MTD Filterra Unit	37.2181N	80.4167W	0	0.19	0.19	9/2015	NE59	Stroubles Creek	Operator- owned	N	3/20/2019
76	IATF Filterra Unit 4	Existing	MTD Filterra Unit	37.2219N	80.4169W	0	0.24	0.24	9/2015	NE59	Stroubles Creek	Operator- owned	N	3/20/2019
77	IATF Filterra Unit 5	Existing	MTD Filterra Unit	37.2221N	80.4171W	0	0.24	0.24	9/2015	NE59	Stroubles Creek	Operator- owned	N	3/20/2019
78	IATF Filterra Unit 6	Existing	MTD Filterra Unit	37.2223N	80.4173W	0	0.24	0.24	9/2015	NE59	Stroubles Creek	Operator- owned	N	3/20/2019
79	IATF Filterra Unit 7	Existing	MTD Filterra Unit	37.2224N	80.4175W	0	0.19	0.19	09/2015	NE59	Stroubles Creek	Operator- owned	N	3/20/2019
80	IATF Underground Detention	Existing	MTD Underground Detention	37.2213N	80.4174W	0	1.29	1.29	09/2015	NE59	Stroubles Creek	Operator- owned	N	1/8/2019
82	MARCHING VIRGINIANS Extended Detention	Existing	Extended Detention	37.1257N	80.2459W	12.79	2.72	15.51	07/2016	NE59	Stroubles Creek	Operator- owned	N	3/20/2019

