VIRGINIA TECH

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 2020 – June 30th 2021

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.

Christopher H. Kiwus, PE, Phd DocuSigned by: Christopher H. Kiwus C798F8A440FE4DE...

Date 9/2/2021

Vice President for Campus Planning, Infrastructure and Facilities

Permit Number: VAR040049 MS4 Name: Virginia Tech

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Program Plan

Changes to the program plan during the reporting year included:

- Removed Girl Scouts event from Annual Outreach Activities

- Changed measurable goal for stream clean-ups from the weight of trash bags to the number of trash bags
- Updated the organizational chart to add Mark Witt as the new Water Resource Specialist

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: (2/2021) Rhonda Ferris and Mark Witt educated 29 Virginia Tech faculty and staff members during Capital Construction Coordination meetings. The presentations explained Erosion and Sediment Control Measures that can be used by the faculty and staff members to help minimize sediment discharge from construction sites.
    b. Speaking engagements: (3/4/21) Chuck Dietz taught 29 Virginia Tech students in Erich Hester's Hydraulic Structures class. His presentation covered a description of the duties and responsibilities of our department and included a field trip to an on-campus stormwater facility to discuss maintenance and how the facility operates to protect water quality and remove pollutants like sediment.
    c. Alternative Materials: Educational magnets that highlighted the importance of water quality and harmful pollutants like sediment, animal waste and trash were distributed to stream clean-up volunteers; approximately 50 magnets were given out.
2. Animal Waste
    a. Traditional Written Materials: Madison Norris created a virtual table card promoting the protection of water quality and the importance of picking up after pets that was distributed to approximately 200 Virginia Tech Students during the school year.
    b. Signage: Permanent signage is placed on 32 different pet waste stations scattered around campus. These signs discuss pet waste's 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 stream clean-up volunteers, approximately 50 magnets were given out.
3. Trash
    a. Speaking Engagement: (3/9/2021) Madison Norris gave a brief Water Quality presentation to 40 students about stormwater awareness. Students were educated on what stormwater is, why it affects them, and

what they can do to prevent pollution from being collected by stormwater runoff.

b. Alternative Materials: Educational magnets that highlighted the importance of water quality and harmful pollutants like sediment, animal waste and trash were distributed to stream clean-up volunteers, approximately 50 magnets were given out.
c. Traditional Written Materials: Madison Norris created a virtual table card promoting the protection of water quality and the importance of picking up trash that was distributed to approximately 200 Virginia Tech Students during the school year.

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
7/21/2020	Matt Gart (VT employee)	7/21/2020	Performed calculations to help convert a concrete ditch along Duck Pond Drive to grass.
7/29/2020	Alan Raflo	7/29/2020	Explained how detention facilities will have various water levels based on rainfall in response to a concern about the drainage time at Grove Detention Pond.
1/25/2021	Bill Ross (VT employee)	1/25/2021	Inspected Stroubles Creek in response to a concern about it being muddy. While the mud had dissipated, emails were sent to many parties and departments on campus to determine the cause of discoloration in the Webb Branch and Central Branch (both gray in color) and the Duck Pond (green in color).
1/26/2021	Dean Paul Winistorfer	1/26/2021	Reached out to the grounds department and athletics department about vehicles driving on lawn in order to resolve erosion and potential water quality issues and relay the information to contractors.

The permittee's MS4 program plan and stormwater website can be accessed at https://www.facilities.vt.edu/permits-inspections/stormwater-management.html . The permittee's facebook page (https://www.facebook.com/hokiestormwater/) has had a total of 3,400 impressions, a reach of 2,839 individuals, an engagement of 150, and a

sum of 58 reactions in the past reporting year. The permittee created 11 educational posts during the reporting year.

Public Involvement activities implemented include:

1. Restoration:
    - (8/2020) ReNew the New took place at several locations and across several dates on the New River to remove trash and tires.
        - Metric: Roughly 200 volunteers participated
    - (11/14/2020) Virginia Tech Students participated in a stream clean-up around the Duck Pond and Stadium Woods for 1 hour and removed 3.5 bags of trash.
        i. Metric: 16 Virginia Tech students volunteered
    - (11/13/2020) Virginia Tech students participated in a stream clean-up by Stroubles Creek for 1.5 hours and picked up 1.5 bags of trash
        ii. Metric: 2 Virginia Tech students volunteered
    - (3/5/2021) Virginia Tech students participated in a stream clean-up around Stroubles Creek and the Duck Pond for 2 hours and collected 1.5 bags of trash.
        iii. Metric: 2 Virginia Tech students volunteered
    - (3/6/2021) Virginia Tech students from the Circle K International club participated in a stream clean-up around the Duck Pond and Stroubles Creek for 1.5 hours and collected 5 bags of trash.
        iv. Metric: 12 Virginia tech Students Volunteered
    - (3/17/2021) VIrginia Tech Students participated in a stream clean-up by Stroubles Creek for 2.5 hours and collected 2 trash bags
        v. Metric: 2 Virginia Tech students volunteered
    - (3/20/2021) Virginia Tech Students from Alpha Epsilon Delta volunteered in a stream clean-up at the President's House pond for 1 hour and collected 1 bag of trash.
        vi. Metric: 9 Virginia Tech students volunteered
    - (3/20/21) Virginia Tech students from the Horticulture Club participated in a stream clean-up around Stroubles Creek for 1.5 hours and collected 3 bags of trash.
        vii. Metric: 13 Virginia Tech students volunteered
    - (3/27/2021) Virginia Tech students from Alpha Epsilon Delta volunteered in a stream clean-up around the Duck Pond for 1 hour and collected 1 bag of trash.
        viii. Metric: 8 Virginia Tech students volunteered
    - (3/27/2021) Virginia Tech students volunteered in a stream clean-up at Stadium Woods for 2 hours and collected 5 bags of trash.
        ix. Metric: 5 Virginia Tech students volunteered
    - (4/6/2021) Virginia Tech students volunteered in a stream clean-up at Stadium Woods for 2 hours and collected 2 bags of trash.
        x. Metric: 4 Virginia Tech students volunteered

- (4/7/2021) Virginia Tech students volunteered in a stream clean-up at Stadium Woods for 4 hours and collected 1.5 bags of trash.
  xi. Metric: 3 Virginia Tech students volunteered
- (4/9/2021) Virginia tech students volunteered in a stream clean-up at Stadium Woods for 2 hours and picked up 1.5 bags of trash.
  xii. Metric: 4 Virginia Tech students volunteered
- (4/14/2021) Virginia Tech students volunteered in a stream clean-up at the Duck Pond for 2 hours and collected 1 bag of trash.
  xiii. Metric: 4 Virginia Tech students volunteered
- (4/15/2021) Virginia Tech student volunteered in a stream clean-up at the Vet Med Pond for 3 hours and collectd 1.5 bags of trash.
  xiv. Metric: 1 Virginia Tech student volunteered
- (4/20/2021) Virginia Tech students volunteered in a stream clean-up at the Duck Pond for 2 hours and collected 1.5 bags of trash.
  xv. Metric: 4 Virginia Tech students volunteered
- (4/21/2021) Virginia Tech students volunteered in a stream clean-up at Depot Park in Christiansburg for 1 hour and collected 3-4 small bags of trash.
  xvi. Metric: 7 Virginia Tech students volunteered
- (4/21/2021) Virginia tech students volunteered in a stream clean-up at Stroubles Creek for 4 hours and collected 1.5 bags of trash.
  xvii. Metric: 2 Virginia Tech students volunteered
- (4/24/2021) Virginia Tech Students from the Student Alumni Association volunteered in a stream clean-up at Stadium Woods for 1 hour and collected 1 bag of trash.
  xviii. Metric: 10 Virginia Tech students volunteered
- (4/25/2021) Virginia Tech students volunteered in a stream clean-up at Stroubles Creek for 2 hours and collected 11 bags of trash.
  xix. Metric: 16 Virginia Tech students volunteered
- (4/26/2021) Virginia Tech students volunteered in stream clean-up at the Duck Pond for 1.5 hours and collected 1 bag of trash,
  xx. Metric: 2 Virginia Tech students volunteered
- (4/29/2021) Virginia Tech students volunteered at the Duck Pond for 2 hours and collected 1 bag of trash.
  xxi. Metric: 2 Virginia Tech students volunteered
- (4/30/2021) Virginia Tech students volunteered for 1 hour at the trail by Knollwood and collected 5 bags of trash.
  xxii. Metric: 3 Virginia Tech students volunteered
- (4/302021) Virginia Tech students volunteered at Crab Creek in Christiansburg for 1.5 hours and collected 3 bags of trash
  xxiii. Metric: 8 Virginia Tech students volunteered
- (5/1/2021) Virginia Tech students volunteered at Depot Park in Christiansburg for 1 hour and collected 6 bags of trash.
  xxiv. Metric: 13 Virginia Tech students volunteered
- (2/27/2021) During the Big Plant Event VTSID partnered with The Environmental Coalition and the local Save Stroubles group to plant

around 7,000 live stake trees on tributaries of Stroubles Creek. Volunteers came out to work to plant the stakes and learn about riparian buffers and stream restoration.

xxv. Metric: Over 400 volunteer hours were logged by Virginia Tech Students throughout the Spring semester for this project.

Evaluation of Restoration as public involvement activities: Last reporting year 5 restoration events took place on campus with roughly 60 volunteers participating to an increase of over 20 restoration events on campus this reporting year with over 150 volunteers. The increase in number of events and volunteers in riparian areas is viewed as a benefit for water quality, and the increase in events and volunteers results in more individuals being educated about stormwater awareness and more trash being removed.

2. Educational Events:
    - (3/9/2021) Madison Norris gave a brief Water Quality presentation to students about stormwater awareness. Students were educated on what stormwater is, why it affects them, and what they can do to prevent pollution from being collected by stormwater runoff.
        i. Metric: 40 Virginia Tech Students were educated
    - (3/4/21) Chuck Dietz taught Virginia Tech students in Erich Hester's Hydraulic Structures class. His presentation covered a description of the duties and responsibilities of our department and included a field trip to an on-campus stormwater facility to discuss maintenance and how the facility operates to protect water quality and remove pollutants like sediment.
        i. Metric: 39 Virginia Tech Students were educated
    - (4/21/2021) Katelyn Muldoon taught a Lecture for Dr. Krometis' BSE Class about the department's role at the university and the importance of stormwater regulations and protection of water quality.
        ii. Metric: 15 Virginia Tech Students were educated
    - (Fall semester 2020 & Spring Semester 2021) Katelyn Kast mentored 5 Office of Sustainability Student interns in the Water Resources group. These students learned about Virginia Tech's MS4 permit and program while helping design water conservation educational tools and materials.
3. Metric: 5 Virginia Tech Students participated in this program.
    - (Spring Semester 2021) Site and Infrastructure Development helped develop an Exploration Backpack program through the local libraries to learn about water quality and macroinvertebrate species.
4. Metric: Over 30 local individuals checked out an Exploration Backpack kit to learn at home.

Evaluation of Educational Events as public involvement activities: An increase in water quality can be expected due to the knowledge related to stormwater awareness being delivered to over 900 individuals during this reporting year through educational booths.

5. Pollution Prevention:

- Unmarked storm drains were marked by the department's interns across campus with educational messages about protecting water quality.
    i. Metric: Roughly 20 storm drain markers were put out during the reporting year
- 38 pet waste stations are scattered around campus for the public's use.
    ii. Metric: During the reporting year roughly 5,000 bags were used to pick up pet waste on campus and roughly 8,000 bag were used by the vet school program.

Evaluation of Pollution Prevention as public involvement activities: An increase in water quality can be expected due to the increase in storm drain markers that were put out in comparison to the last 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

Due to the COVID19 pandemic several annual activities planned for this reporting year could not take place due to teleworking, school closures and CDC requirements. Some of those events that were planned included:

1. Home Builders Show to educate residents
2. 6th grade Stormwater Days to educate students
3. Steppin' Out Festival to educate residents
4. 4th grade field trips to educate students

MCM 3

The up to date MS4 map is available on the permittee's website and at https://www.arcgis.com/home/webmap/viewer.html?webmap=d5896391f66f4ba7bf49e59469b66a30&extent=-80.4581,37.2127,-80.3947,37.2462

The total number of outfalls screened during the reporting period as part of the dry weather screening program was 58. 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
9/5/2020	9/8/2020	Cloudy water in Stroubles	Just past West Campus Drive	VTSID Employee, Katelyn Kast	The Chiller Plant Project set up a pump and silt sack incorrectly for collected groundwater. The installation was fixed correctly and was noted on the ESC inspection report on 9/8/2020.
1/12/2021	1/13/2021	Unprotected drop inlet had plastic sawdust around and in it from pipe cutting	Saunders Hall	VTSID Employee, Katelyn Kast	Rhonda Ferris received photo evidence from Phillip Dunn of installed protection and cleaned up sawdust.
1/25/2021	1/25/2021	Duck Pond was reported to have a greenish color	Duck Pond	VTSID Employee, Katelyn Kast	The duck pond cleared up on its own, but the cause was not determined. Emails were sent out to research groups and college deans to determine if there was a recent dye study, but no source was found.
2/15/2021	2/16/2021	Diesel spill	By Wallace Hall	VTSID Employee, Katelyn Kast	The dewatering bag and inlet protection were in place, but weren't cleaned up properly. The clean-up supplies and spill were cleaned up and the dewatering bag was replaced.
6/14/2021	6/17/2021	Stroubles Creek was reported to have a murky white color	By Hahn Hall North in Webb Branch	Julia Hallworth	Job sites upstream, power house, and Town of Blacksburg were contacted, but all had no discharge. The water had cleared shortly after the plume had passed.

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**
Tom's Creek Landfill	42	Active
Smoot Parking Lot	30	Active
MRL	33	Active
CID	43	Active
Athletic Soil Stockpile	33	Active
Airport Runway (3 phases)	67	Active
Alumni Mall Tree Planting	8	Active
BETR	33	Active
CALS Grain Bin Relocation	28	Active

Catawba Greenway Trailhead	7	Active
Holden Hall	38	Active
Chiller (Phase 2)	45	Active
CLMS	7	Active
Contractor Laydown	43	Active
D&DS	15	Active
Harper Hall Heat Box Replacement	28	Active
Kentland Farms Stockpile Area	2	Active
LPRF Beef Nutrition	3	Active
LPRF Equine Barn	3	Active
LPRF Swine	4	Active
LPRF Turkey Grow	7	Active
MMTF	5	Active
Perry Street Improvements	27	Active

Non-Permanent Gym Facility	31	Active
Venture Out Building	29	Active
Vet Med ADA Pathway	27	Active
Vet Med Equine Sports Arena	5	Active
Total Inspections	**643**	

Enforcement actions:
No enforcement actions were taken during the reporting year.

MCM 5

162 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.

The BMP Warehouse was updated on Monday June 24th with the addition of one new BMP and the latest inspection date for each BMP.

No significant maintenance, repair and retrofit activities were performed on stormwater management facilities owned or operated by Virginia Tech during the reporting year.

MCM 6

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	1545.5	4/1/2021	9/1/2023	Agriculture	Dr. Allen Grant	540-231-4152 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	Robert Perfater	540-200-7163 rperfatr@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	Kyle LeDuc	540-231-3045 kleduc@vt.edu
Virginia Tech Dairy and Animal and Poultry Sciences	1429	4/1/2021	9/1/2023	Agriculture	Dr. Allen Grant	540-231-4152 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	Patrick Hilt	540-231-9405 philt@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	7/1/2021	7/1/2024	Turf & Landscape	Dr. Pete Shultz	757-363-3900 jderr@vt.edu
Middleburg AREC	268.6	7/1/2021	7/2/2024	Turf & Landscape	Ryan Brooks	540-687-3521 tgolight@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	1/1/2021	12/31/2023	Agriculture	David Langston	757-657-6450 whframe@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.	6/2021	35
Quarry SWPPP Training	Train employees about the SWPPP and describe the employee's responsibility to prevent stormwater pollution.	March, 2021	14
Stormwater Training for Housekeeping Services Staff	Educate Housekeeping Staff about stormwater runoff, as well as how to reduce and prevent stormwater pollution.	September, 2020	164
Grounds and Facilities SWPPP Training	Train employees about the SWPPP and describe the employee's responsibility to prevent stormwater pollution.	Several dates in October, 2020	70
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	996

No operation procedures were developed or modified during the reporting year.

No new SWPPPs were developed and there were no SWPPP modifications during the reporting period.

TMDL

Status report on the implementation:

- Updated training was delivered to those operating Street Sweepers and cleaning out storm sewer inlets on April 27th 2021 and will occur again in the next reporting year.
- A transition to Lane Mile Approach for tracking was implemented.

Actions conducted to implement local TMDL action plan:

- Street Sweeping: 17,535 pounds were removed through street sweeping during the reporting year, over 6,000 more pounds than the previous year. Approximately 513 miles were logged by the Street Sweeper during the reporting year. Street sweeper logs can be provided upon request.

Appendix A

BMP	BMP Name	BMP Status	BMP Type	Lat	Long	Perv. DrainArea	Imperv. Drain Area	Total Acres	Date Added	HUC	Impaired Water	Ownership	Maint Agreement	Date of Last Insp.
1	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	6/9/2021
2	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	12/2020
4	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	5/20/2021
5	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	5/20/2021
7	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	5/20/2021
8	Smithfield Lot Bioretention	Existing	Bioretention	37.2230N	80.4296W	0.49	1.04	1.53	07/2007	NE59	Stroubles Creek	Operator-owned	N	5/20/2021
9	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	5/20/2021
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	5/20/2021
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	5/20/2021
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	5/26/2021
14	Alumni Pond	Existing	Enhanced Extended Detention	37.2282N	80.4281W	15.8	28	43.78	01/2012	NE59	Stroubles Creek	Operator-owned	N	6/9/2021
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	5/26/2021
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	5/26/2021

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	5/26/2021
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	12/2020
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	5/20/2021
20	New Hall West 1	Existing	Bioretention	37.2221N	80.4228W	0	0.3	0.3	01/2012	NE59	Stroubles Creek	Operator-owned	N	5/26/2021
21	New Hall West 2	Existing	Bioretention	37.2224N	80.4222W	0	0.4	0.4	01/2012	NE59	Stroubles Creek	Operator-owned	N	5/26/2021
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	5/20/2021
23	VTES - Extended Detention	Existing	Extended Detention	37.2113N	80.4128W	28.32	8.58	36.9	06/2005	NE59	Stroubles Creek	Operator-owned	N	6/24/2021
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	6/9/2021
27	ICTAS II-Bioretention	Existing	Bioretention	37.2218N	80.4261W	0.05	0.28	0.33	07/2011	NE59	Stroubles Creek	Operator-owned	N	5/20/2021
28	HABBI Bioretention	Proposed	Bioretention	37.2201N	80.4274W	0.7	0.69	1.39	7/2015	NE59	Stroubles Creek	Operator-owned	N	5/26/2021
29	SWCP Extended Detention	Existing	extended detention	37.2213N	80.4306W	3.25	1.31	4.56	11/2013	NE59	Stroubles Creek	Operator-owned	N	5/20/2021
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	5/20/2021
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	12/2020
35	New Hall West 3	Existing	Bioretention	37.2225N	80.4224W	0	0.3	0.3	01/2012	NE59	Stroubles Creek	Operator-owned	N	5/26/2021
36	New Hall West 4	Existing	Bioretention	37.2220N	80.4227W	0	0.3	0.3	01/2012	NE59	Stroubles Creek	Operator-owned	N	5/26/2021
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	6/9/2021

38	Football Locker Room WQU	Existing	Underground WQU	37.2226N	80.4178W	0.7	2.6	3.3	01/2012	NE59	Stroubles Creek	Operator-owned	N	12/2020
39	ICTAS II - Rain Garden	Existing	Bioretention	37.2221N	80.4258W	0	0.15	0.15	07/2011	NE59	Stroubles Creek	Operator-owned	N	5/20/2021
41	MMF Bioretention Filter	Existing	Bioretention	37.2148N	80.4172W	10.25	1.37	11.62	09/2011	NE59	Stroubles Creek	Operator-Owned	N	5/20/2021
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	5/26/2021
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	5/26/2021
44	Roller Hockey Rink WQU	Existing	MTD Stormceptor Underground WQU	37.2231N	80.4172W	2.6	4.2	6.8	01/2012	NE59	Stroubles Creek	Operator-owned	N	12/2020
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	6/9/2021
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	6/9/2021
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	6/9/2021
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	6/9/2021
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	12/2020
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	12/2020
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	12/2020
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	12/2020
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	12/2020

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	5/26/2021
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	5/26/2021
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	12/2020
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	5/20/2021
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	5/20/2021
59	Dairy Barn Extended Detention	Existing	Extended Detention	37.2005N	80.5775W	0	8.49	34.91	7/2016	NE60	Stroubles Creek	Operator-owned	N	6/9/2021
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	12/1/20
61	CFTA Water Quality Unit 2	Existing	MTD Stormceptor Underground WQU	37.2316 N	80.4169W	1.94	1.82	3.76	07/2013	NE59	Stroubles Creek	Operator-owned	N	12/1/20
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	12/2020
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	12/2020
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	5/20/21
66	Upper Quad Bioretention 1	Existing	Bioretention	37.2304N	80.4190W	0	0.3	0.3	02/2018	NE59	Stroubles Creek	Operator-owned	N	5/20/2021
67	Upper Quad Bioretention 2	Existing	Bioretention	37.2302N	80.4193W	0	0.4	0.4	02/2018	NE60	Stroubles Creek	Operator-owned	N	5/20/2021
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	12/1/20
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	5/20/2021

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	5/20/2021
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	6/9/2021
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	6/9/2021
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	6/9/2021
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	6/9/2021
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	6/1/2020
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	6/9/2021
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	6/9/2021
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	12/15/20
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	5/20/2021
83	MARCHING VIRGINIANS Extended Detention	Existing	Enhanced Extended Detention	37.1253N	80.2451W	32.16	6.23	38.39	07/2016	NE59	Stroubles Creek	Operator-owned	N	5/20/2021
84	BETR Underground Detention	Existing	Underground Detention	37.2184N	80.4411W	1.71	0.38	2.09	01/2021	NE59	Stroubles Creek	Operator-owned	N	Final Insp only