Fauquier County, Virginia

Municipal Separate Storm Sewer System (MS4) Fiscal Year 2019 Annual Report

October 1, 2020

Department of Community Development
10 Hotel Street
Warrenton, VA 20186
540-422-8210

Submitted to the Virginia Department of Environmental Quality in compliance with Permit No. VAR040123

MS4 Fiscal Year 2020 Annual Report, Fauquier County

A. *Report Requirements*

a) Permittee name and permit number:

Fauquier County; Permit number VAR040123

b) The annual report permit year and reporting period:

The five-year MS4 permit was issued on October 31, 2018. The permit became effective on November 1, 2018. This permit will expire on October 31, 2023. This report is for the period July 1, 2019 – June 30, 2020.

c) Signed Certification Statement:

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.

Fauquier County by: _____ 9-21-20

Paul McCulla, Fauquier County Administrator Date

d) Minimum Control Measure annual reporting items:

These are listed on the following pages.

e) Evaluation of program implementation:

Evaluations are included on the following pages with the minimum control measure descriptions.

f) Chesapeake Bay TMDL action plan implementation update:

TMDL action plan implementation update included as appendix.

Minimum Control Measure Implementation

1. MCM1 – Public Education and Outreach

From the County's MS4 Permit:

1. Public education and outreach.
g. The annual report shall include the following information:
(1) A list of the high-priority stormwater issues the permittee addressed in the public education and outreach program; and
(2) A list of the strategies used to communicate each high-priority stormwater issue.

(1)

1. Chesapeake Bay Pollutants (Nitrogen, Phosphorous, and Suspended Solids)
2. Homeowner Strategies for Urban Stormwater Management
3. Value and Importance of Stream Buffers

(2) The public education related to the Chesapeake Bay pollutants took place through the "Be the Solution to Stormwater Pollution" contest for elementary school students conducted through the Warrenton Waterways Cleanup Initiative.

Homeowner strategies were tackled through the provision of an updated Homeowner's Guide to a Watershed Friendly Backyard as an available resource from the County offices. The County also partnered with the Piedmont Environmental Council, Chesapeake Stormwater Network, Center for Watershed Protection and Hirschman Water and Environment LLC to conduct a webinar on June 11, 2020 entitled *Capturing the Rain: Green Infrastructure Options for HOA Common Areas.* A recording of this presentation and related materials are available through the County's MS4 website.

John Marshall Soil and Water Conservation District leads the County's efforts with regard to teaching the value and importance of stream buffers among other environmental concerns. They accomplished this through interactive workshops and events that reached 2,092 children and 297 adults.

The County is successfully implementing this minimal control measure in collaboration with the Town of Warrenton.

2. *MCM2 – Public Involvement/Participation*

From the County's MS4 Permit:

2. Public involvement and participation.
f. The annual report shall include the following information:
(1) A summary of any public input on the MS4 program received (including stormwater complaints) and how the permittee responded;
(2) A webpage address to the permittee's MS4 program and stormwater website;
(3) A description of the public involvement activities implemented by the permittee;
(4) A report of the metric as defined for each activity and an evaluation as to whether or not the activity is beneficial to improving water quality; and
(5) The name of other MS4 permittees with whom the permittee collaborated in the public involvement opportunities.

(1) There was no public input received on the MS4 program.

(2) MS4 Program website: https://www.fauquiercounty.gov/government/departments-a-g/community-development/planning/long-range-planning/ms4-permit-program

Stormwater website: https://www.fauquiercounty.gov/government/departments-a-g/community-development/land-development/stormwater-and-erosion-sediment-control

(3) There is some overlap between the public education and public involvement activities implemented to raise understanding and awareness of the importance of stormwater quality. In collaboration with the Town of Warrenton, the County helped to promote a stormwater pollution prevention poster contest that went out to all of the elementary students in the Fauquier community. Also previously mentioned, the John Marshall Soil and Water Conservation District presented 111 water programs and hosted 5 riparian tree planting/maintenance events that involved 2.092 children and 297 adults. The detailed list of those events can be found below.

Program Date	Location	Name of Group/Class	Purpose of Program	Children in Attendance	Adults in Attendance	Programs Presented
7/8/2019	Fauquier Fairgrounds	Ag Expo Day Camp	Watersheds	40	4	4
7/9/2019	Fauquier Fairgrounds	Ag Expo Day Camp	Watersheds	79	6	4
7/17/2019	Northern Fauquier Community Park	Nature Camp	Watersheds/Sum of the Parts	11	2	1
9/9/2019	Kettle Run High School	Ecology	Stream Monitoring Training	42	2	2
9/10/2019	Bradley Elementary School	4th Grade	Watersheds (AR Sandbox)	74	1	6
9/11/2019	Vint Hill Park	Ecology	Stream Monitoring	42	2	2
9/12/2019	Brumfield Elementary School	5th Grade	Leaf Pack Project - Phase I	80	8	4

9/27/2019	Clifton Institute	Fauquier High School	Soil and Water Monitoring	28	3	1
9/29/2019	Sustainable Landscaping Workshop	General Public	VCAP Information	0	45	1
10/1/2019	Coleman Elementary School	5th Grade	Leaf Pack Project - Phase I	63	5	3
10/2/2019	PB Smith Elementary School	Ecology Club	Leaf Pack Project - Phase I	29	1	1
10/2/2019	Messick's Farm Market	General Public	Conservation Picnic - JMSWCD Programs	0	19	1
10/7/2019	St. James Episcopal School	4th and 5th Grade	Leaf Pack Project - Phase I	18	4	1
10/9/2019	Highland School	Environment	VCAP Site Assessment/Stormwater	9	1	1
10/12/2019	Fauquier High School	General Public	Farm Tour	25	30	1
10/15/2019	Liberty High School	Ecology	Leaf Pack Project - Phase I	46	5	3
10/17/2019	Messick Dairy Farm	Taylor 7th Grade	Conservation Field Day	154	23	8
10/18/2019	Riverside Preserve	Fauquier High School Natural Resources	Tree Planting, Water Monitoring, Tree Hike	8	1	1
10/18/2019	Rady Park	Highland Environmental Science	Stream Monitoring	7	1	1
10/22/2019	Brumfield Elementary School	5th Grade	Leaf Pack Project - Phase II	80	8	4
10/23/2019	Clifton Institute	AP Environmental Science/FESA	Stream Monitoring	18	6	1
10/25/2019	Liberty High School	Environmental Science	AR Sandbox - Watersheds	51	3	3
10/30/2019	Lord Fairfax Community College	MVGS Envirothon Team	Aquatics Training	10	1	1
11/4/2019	Coleman Elementary School	5th Grade	Leaf Pack Project - Phase II	63	4	3
11/6/2019	P.B. Smith Elementary School	Ecology Club	Leaf Pack Project - Phase II	32	2	1
11/8/2019	St. James Episcopal School	4th and 5th Grade	Leaf Pack Project - Phase II	18	3	1
11/12/2019	Vint Hill Park	Ecology	Stream Monitoring	42	2	2
11/18/2019	Liberty High School	Ecology	Leaf Pack Project - Phase II	46	5	3
11/19/2019	Marshall Middle School	7th Grade	Leaf Pack Project - Phase I	80	5	4
11/20/2019	Marshall Middle School	7th Grade	Leaf Pack Project - Phase I	80	5	4
11/22/2019	Liberty High School	Environmental Science	Water Monitoring/Soils	51	3	3
11/26/2019	Grace Miller Elementary School	4th Grade	AR Sandbox - Watersheds	65	4	4

12/12/2019	Marshall Middle School	7th Grade	Leaf Pack Project - Phase II	40	3	2
12/17/2019	Marshall Middle School	7th Grade	Leaf Pack Project - Phase II	120	8	6
12/18/2019	P.B. Smith Elementary School	Ecology Club	Leaf Pack Project - Phase III	32	1	1
1/14/2020	Kettle Run High School	Ecology/Environmental Science/iSTEM	Stream Monitoring Training	91	5	3
1/28/2020	Vint Hill Park	Ecology/Environmental Science/iSTEM	Stream Monitoring	91	5	3
1/29/2020	Highland School	3rd Grade	Local Water Resources	18	2	1
2/4/2020	Vint Hill Park	Ecology/Environmental Science/iSTEM	Stream Monitoring	66	4	3
2/7/2020	Rady Park	Highland School Environmental Science	Stream Monitoring	12	1	1
2/12/2020	MVGS	Envirothon	Special Topic	12	1	1
2/18/2020	Vint Hill Park	Environmental Science/Ecology	Stream Monitoring	85	4	3
2/26/2020	Liberty High School	Ecology	Leaf Pack Project - Phase I	38	4	2
3/4/2020	Liberty High School	Environmental Science	Watersheds/AR Sandbox	20	1	1
3/10/2020	Vint Hill Park	Ecology/AP Environmental Science	Stream Monitoring	52	3	2
4/23/2020	Virtual - Google Meet	Highland School 5th Grade	Soil and Water Question and Answer	24	4	2
				2,092	260	111

Program Date	Location	Purpose of Program	Participants	Volunteer Group
3/31/2020	Acorn Farm	Tree Planting	8	Friends of the Rappahannock
3/31/2020	German Noguera	Tree Planting	7	Friends of the Rappahannock
4/2/2020	Arianna Dunning	Tree Planting	9	Friends of the Rappahannock & Goose Creek Association
4/21/2020	George Grayson	Tree Planting	8	Goose Creek Association
5/2/2020	Blue Ridge Farm	Tree Planting	5	n/a

(4) It is believed that education is the most effective tool for improving water quality amongst the 'population' of the County's MS4 area which primarily consists of seven schools. The combined 2019-20 attendance (the most recent year for which attendance data is available) of these schools was 4,027. With nearly 2,100 students involved in the JMSWCD programs alone, the majority of these students are being educated on the importance of water quality.

(5) Fauquier County collaborated with the Town of Warrenton on public outreach opportunities.

The County is successfully implementing this minimal control measure on collaboration with the Town of Warrenton and other allied organizations in the community.

3. *MCM3 – Illicit Discharge Detection and Elimination*

From the County's MS4 Permit:

3. Illicit discharge detection and elimination.
e. The annual report shall include:
(1) A confirmation statement that the MS4 map and information table have been updated to reflect any changes to the MS4 occurring on or before June 30 of the reporting year;
(2) The total number of outfalls screened during the reporting period as part of the dry weather screening program; and
(3) A list of illicit discharges to the MS4 including spills reaching the MS4 with information as follows:
(a) The source of illicit discharge;
(b) The dates that the discharge was observed, reported, or both;
(c) Whether the discharge was discovered by the permittee during dry weather screening, reported by the public, or other method (describe);
(d) How the investigation was resolved;
(e) A description of any follow-up activities; and
(f) The date the investigation was closed.

(1) The MS4 Map and information table have been updated to reflect any changes to the MS4 occurring on or before June 30, 2020.

(2) All MS4 outfalls (22 outfalls) were screened during the reporting year as a part of the dry weather screening program. The results were:

Outfall	Location	Type	Date	Condition
OF-001	Fauquier High School	12" PVC Pipe	05/14/2020	Dry and in need of minor maintenance - sediment removal (repaired)
OF-002	Fauquier High School	18" HDPE Pipe	05/14/2020	Dry and in good condition
OF-003	Fauquier High School	12" Vitreous Clay Pipe	05/14/2020	Dry and in need of minor maintenance – minor sediment removal (repaired)
OF-004	Fauquier High School	18" HDPE Pipe	05/14/2020	Dry and in need of minor maintenance – additional riprap needed (scheduled for repair late 2020)
OF-005	Fauquier High School	Earthen Stream Channel	05/15/2020	Stream in good condition with steady flow – monitoring results in next table
OF-006	Alice Jane Childs Building	36" RCP Pipe	05/14/2020	Dry and in need of minor maintenance – additional riprap needed (scheduled for repair late 2020)
OF-007	Alice Jane Childs Building	24" RCP Pipe	05/14/2020	Dry and in need of minor maintenance – additional riprap needed (scheduled for repair late 2020)
OF-008	Warrenton Middle School	Earth Lined Swale	05/15/2020	Stream in good condition with steady flow – monitoring results in next table
OF-009	Fleet Maintenance Facility	15" RCP Pipe	05/14/2020	Dry and in need of minor maintenance – additional riprap

				needed (scheduled for repair late 2020)
OF-010	Fleet Maintenance Facility	Gulley	05/14/2020	Dry and in good condition
OF-011	Fleet Maintenance Facility	Gulley	05/14/2020	Dry and in good condition
OF-012	Brumfield Elementary School	42" RCP Pipe	06/04/2019	Steady flow and in good condition – monitoring results in next table
OF-013	Bradley Elementary School	Grass Lined Swale	05/14/2020	Dry and in good condition
OF-014	PB Smith Elementary School	18" HDPE Pipe	05/14/2020	Dry and in good condition
OF-015	PB Smith Elementary School	Grass Lined Swale	05/14/2020	Dry and in good condition
OF-016	Auburn Middle School	42" RCP Pipe	05/15/2020	Negligible flow and in good condition – monitoring results in next table
OF-017	Auburn Middle School	15" RCP Pipe	05/14/2020	Dry and in need of minor maintenance – sediment removal (repaired)
OF-018	Auburn Middle School	18" RCP Pipe	05/14/2020	Outfall in water, but no flow and in good condition
OF-019	Vint Hill Village Green	Grass Lined Swale	05/14/2020	Dry and in good condition
OF-020	Vint Hill Village Green	15" RCP Pipe	05/14/2020	Dry and in good condition
OF-021	Vint Hill Village Green	15" RCP Pipe	05/14/2020	Dry and in good condition
OF-022	Vint Hill Village Green	15" RCP Pipe	05/15/2020	Steady flow and in good condition – monitoring results in next table

Outfall	Air Temp	Water Temp	Flow Depth (inches)	Flow Width (inches)	Flow Rate (feet/sec)	pH	Odor	Color	Turbidity	Floatables
OF-005	84F	72.2F	4.75	18	6	7.41	No	Clear	No	No
OF-008	81F	64.0F	0.5	16	4	7.60	No	Clear	No	No
OF-012	84F	67.5F	1	12	12	8.02	No	Clear	No	No
OF-016	77F	75.1F	0.25	4	>1	6.97	No	Clear	No	No
OF-022	73F	61.0	0.75	6	3	6.20	No	Clear	No	No

(3) There were no illicit discharges to the MS4 during the reporting year.

The County is successfully implementing this minimal control measure. Outfalls requiring minor maintenance have been reported to Fauquier County Public Schools and Fauquier County General Services for repair and will be verified during the next dry screening.

4. MCM4 – Construction Site Stormwater Runoff Control

From the County's MS4 Permit:

4. Construction site stormwater runoff control.
d. The annual report shall include the following:
(1) If the permittee implements a construction site stormwater runoff control program in accordance with Part I E 4 a (3):

(a) A confirmation statement that land disturbing projects that occurred during the reporting period have been conducted in accordance with the current department approved standards and specifications for erosion and sediment control; and

(b) If one or more of the land disturbing projects were not conducted with the department approved standards and specifications, an explanation as to why the projects did not conform to the approved standards and specifications.
(2) Total number of inspections conducted; and
(3) The total number and type of enforcement actions implemented and the type of enforcement actions.

(1) There were no land disturbing projects that occurred during the reporting period either within the MS4 area, or that would impact the MS4 area.

(2) There were no inspections conducted.

(3) There were no enforcement actions taken.

The County is successfully implementing this minimal control measure.

5. MCM5 – Post-Construction Stormwater Management

From the County's MS4 Permit:

5. Post-construction stormwater management for new development and development on prior developed lands.

h. The annual report plan shall include the following information:

(1) If the permittee implements a VSMP in accordance with Part I E 5 a (3):

(a) The number of privately owned stormwater management facility inspections conducted; and

(b) The number of enforcement actions initiated by the permittee to ensure long-term maintenance of privately owned stormwater management facilities including the type of enforcement action;

(2) Total number of inspections conducted on stormwater management facilities owned or operated by the permittee;

(3) A description of significant maintenance, repair, or retrofit activities performed on the stormwater management facilities owned or operated by the permittee to ensure it continues to perform as designed. This does not include routine activities such as grass mowing or trash collection;

(4) A confirmation statement that the permittee submitted stormwater management facility information through the Virginia Construction Stormwater General Permit database for those land disturbing activities for which the permittee was required to obtain coverage under the General VPDES Permit for Discharges of Stormwater from Construction Activities in accordance with Part I E 5 f or a statement that the permittee did not complete any projects requiring coverage under the General VPDES Permit for Discharges of Stormwater from Construction Activities; and

(5) A confirmation statement that the permittee electronically reported BMPs using the DEQ BMP Warehouse in accordance with Part I E 5 g and the date on which the information was submitted.

(1) There were no privately owned stormwater management facility inspections conducted as there are no privately owned stormwater management facilities identified within the MS4 area. Similarly, there were no enforcement actions initiated by the permittee.

(2) Formal inspections were conducted by Community Development staff on all (100%) of the County owned stormwater management facilities including three dry ponds as well as 17 swales.

(3) There was no significant maintenance, repair, or retrofit activities performed on any stormwater management facilities owned or operated by the County.

(4) Fauquier County did not complete any projects requiring coverage under the General VPDES Permit for Discharges of Stormwater from Construction Activities within the MS4 area.

(5) The BMPs were electronically reported to the DEQ BMP Warehouse in accordance with Part I E 5 g,on September 18, 2020.

The County is successfully implementing this minimum control measure.

6. *MCM6 – Pollution Prevention/Good Housekeeping for Municipal Operations*

From the County's MS4 Permit:

6. Pollution prevention and good housekeeping for facilities owned or operated by the permittee within the MS4 service area.
q. The annual report shall include the following:
(1) A summary of any operational procedures developed or modified in accordance with Part I E 6 a during the reporting period;
(2) A summary of any new SWPPPs developed in accordance Part I E 6 c during the reporting period;
(3) A summary of any SWPPPs modified in accordance with Part I E 6 f or the rationale of any high priority facilities delisted in accordance with Part I E 6 h during the reporting period;
(4) A summary of any new turf and landscape nutrient management plans developed that includes:
(a) Location and total acreage of each land area; and
(b) The date of the approved nutrient management plan; and
(5) A list of the training events conducted in accordance with Part I E 6 m, including the following information:
(a) The date of the training event;
(b) The number of employees who attended the training event; and
(c) The objective of the training event.

(1) There were no operational procedures developed or modified during the reporting period.

(2) There were no new SWPPPs developed during the reporting period.

(3) There were no SWPPPs modified or facilities delisted during the reporting period.

(4) There were no new turf and landscape nutrient management plans developed. A number of plans expire in December 2020 that will be updated in the next permit year.

(5)

Annual Custodial Staff Training	7/2019	95	Includes overview of MS4 Program and importance of water quality
Annual Custodial Staff Training	8/2019	62	Includes overview of MS4 Program and importance of water quality

The County is successfully implementing this minimal control measure.

Appendix

Fauquier County Chesapeake Bay TMDL Action Plan

1. Current Program and Existing Legal Authority

Fauquier County primarily utilizes its Stormwater Ordinance (Fauquier County Code of Ordinances Chapter 11, Stormwater Management and Erosion and Sediment Control) as its existing legal authority to ensure compliance with the Special Condition. The County is aided by the fact that only two sites (Auburn Middle School & Fauquier High School) contain off-site drainage areas that are covered by the County's MS4 Permit. Many of the sites are situated within the Town of Warrenton with whom the County has an inter-jurisdictional agreement.

2. New or Modified Legal Authority

No new legal authorities are required for permit compliance.

3. Means and Methods to Address Discharges From New Sources

The County adheres to the Virginia Stormwater Management Program (VSMP) regulations for the implementation of post-development stormwater management facilities. The County is aided by the fact that the drainage areas to the County MS4 sites are largely built-out, leaving the County as the most likely land disturber within the MS4 drainage area.

4. Estimated Existing Source Loads and Calculated Total Pollutant of Concern (POC) Required Reductions

Site	2009 Site Acreage		2009 Off-Site Urbanized Drainage Acreage within County MS4 Permit		2009 Total Acreage		Total Acreage
	Pervious	Impervious	Pervious	Impervious	Pervious	Impervious	
Auburn Middle (Pot)	32.294	7.161	251.589	45.862	283.882	53.023	336.905
Alice Jane Childs Bldg (Rap)	4.581	2.697	0.000	0.000	4.581	2.697	7.278
CM Bradley Elem(Pot)	14.957	4.335	0.000	0.000	14.957	4.335	19.292
Brumfield Elem/Taylor Mid (Pot)	33.562	11.600	0.000	0.000	33.562	11.600	45.162
Fauquier High (Rap)	73.594	19.986	8.603	2.403	82.197	22.389	104.586
Fleet Maint /Warrenton Mid (Rap)	12.259	10.202	0.000	0.000	12.259	10.202	22.461
PB Smith Elem (Pot)	20.888	4.744	0.000	0.000	20.888	4.744	25.632
Vint Hill Village Green (Pot)	27.103	5.168	0.000	0.000	27.103	5.168	32.271
2009 Total (Rappahannock)					82.197	22.389	104.586
2009 Total (Potomac)					397.232	91.770	489.002
Total							593.587

Table 2b: Calculation Sheet for Estimating Existing Source Loads for the Potomac River Basin *Based on Chesapeake Bay Program Watershed Model Phase 5.3.2					
Subsource	Pollutant	Total Existing Acres Served by MS4 (6/30/09)	2009 EOS Loading Rate (lbs/acre)	Est Total POC Load Based on 2009 Progress Run	
Regulated Urban Impervious	Nitrogen	78.871	16.86	1,329.759	5,160.306
Regulated Urban Pervious		380.392	10.07	3,830.547	
Regulated Urban Impervious	Phosphorus	78.871	1.62	127.770	283.731
Regulated Urban Pervious		380.392	0.41	155.961	
Regulated Urban Impervious	Total Suspended Solids	78.871	1,171.32	92,382.756	159,255.663
Regulated Urban Pervious		380.392	175.8	66,872.907	

Table 2c: Calculation Sheet for Estimating Existing Source Loads for the Rappahannock River Basin *Based on Chesapeake Bay Program Watershed Model Phase 5.3.2					
Subsource	Pollutant	Total Existing Acres Served by MS4 (6/30/09)	2009 EOS Loading Rate (lbs/acre)	Est Total POC Load Based on 2009 Progress Run	
Regulated Urban Impervious	Nitrogen	35.288	9.38	331.001	859.857
Regulated Urban Pervious		99.037	5.34	528.857	
Regulated Urban Impervious	Phosphorus	35.288	1.41	49.756	87.390
Regulated Urban Pervious		99.037	0.38	37.634	
Regulated Urban Impervious	Total Suspended Solids	35.288	423.97	14,961.024	20,508.076
Regulated Urban Pervious		99.037	56.01	5,547.052	

Table 3b: Calculation Sheet for Determining Total POC Reductions Required During this Permit Cycle for the Potomac River Basin *Based on DEQ Guidance Memo 15-2005					
Subsource	Pollutant	Total Existing Acres Served by MS4 (6/30/09)	Second Permit Cycle Required Reduction in Loading Rate (lbs/acre)	Total Reduction Required Second Permit Cycle (lbs)	
Regulated Urban Impervious	Nitrogen	78.871	0.60696	47.871	139.804
Regulated Urban Pervious		380.392	0.24168	91.933	
Regulated Urban Impervious	Phosphorus	78.871	0.10368	8.177	12.700
Regulated Urban Pervious		380.392	0.01189	4.523	
Regulated Urban Impervious	Total Suspended Solids	78.871	93.71	7,390.620	9,731.172
Regulated Urban Pervious		380.392	6.153	2,340.552	

Table 3c: Calculation Sheet for Determining Total POC Reductions Required During this Permit Cycle for the Rappahannock River Basin *Based on DEQ Guidance Memo 15-2005					
Subsource	Pollutant	Total Existing Acres Served by MS4 (6/30/09)	Second Permit Cycle Required Reduction in Loading Rate (lbs/acre)	Total Reduction Required Second Permit Cycle (lbs)	
Regulated Urban Impervious	Nitrogen	35.288	3.3768	119.160	131.853
Regulated Urban Pervious		99.037	0.12816	12.693	
Regulated Urban Impervious	Phosphorus	35.288	0.09024	3.184	4.276
Regulated Urban Pervious		99.037	0.01102	1.091	
Regulated Urban Impervious	Total Suspended Solids	35.288	33.92	1,196.882	1,391.029
Regulated Urban Pervious		99.037	1.96035	194.147	

5. Means and Methods to Meet the Required Reductions and Schedule

As of June 30, 2020, no reductions had yet been achieved through credit purchases, infrastructure retrofits or new infrastructure. A table displaying potential green infrastructure improvements attached. The specific combination of improvements has not been determined, however, the final improvements will meet the required reductions. A constructed wetland at James Brumfield Elementary School has been partially funded through a grant from the National Fish and Wildlife Foundation. Construction was delayed due to the current pandemic but has begun as of the Fall of 2020.

Grant funding has also been secured to aid in the design and construction of a facility at Fauquier High School through the Chesapeake Bay Foundation as well as the National Fish and Wildlife Foundation. Design and construction of this project will likely occur in 2021-22.

FY2021 – Constructed Wetland at Brumfield Elementary School

FY2022 – Constructed Wetland at Fauquier High School

6. Means and Methods to Offset Increased Loads From New Sources Initiating Construction Between July 1, 2009 and June 30, 2014

No new construction initiated within MS4 area between 2009 and 2014.

7. Means and Methods to Offset Increased Loads From Grandfathered Projects That Begin Construction After July 1, 2014

There are no grandfathered projects.

8. A List of Future Projects, and Associated Acreage that Qualify as Grandfathered

There are no grandfathered projects.

9. An Estimate of the Expected Cost to Implement the Necessary Reductions

Table displaying estimated costs of potential green infrastructure improvements attached. The County has received updated cost estimates for the project at CM Bradley ($75,300), Fauquier High School ($127,596) and Vint Hill Village Green ($412,656).

10. Public Comments on Draft Action Plan

The draft Chesapeake Bay TMDL Plan was posted to the Fauquier County Department of Community Development's MS4 webpage the week of May 28th, 2018. The Department's Facebook page also was used to advertise that the draft was posted. A stakeholder meeting of impacted property owners was held on May 30th to provide an overview of the draft plan. No comments were received.

Site ID	Site Description	Watershed	Proposed Practice	RR or ST	Impervious Cover (acre)	Turf Cover (acre)	Forest Cover (acre)	Drainage Area (acre)	%IC	%Turf	%Forest	P (in)	Rv	Target Storage WQv (CF)	Available Practice Width (ft)	Available Practice Length (ft)	IWS (Yes/No)	Ponding Depth (in)	Dry Filter Depth (in)	Wet Filter Depth (in)	Gravel Depth (in)	Top Surface Area (SF)	Bottom Surface Area (SF)	Ponding Volume (CF)	Soil & Gravel Storage Volume (CF)	Max avail vol (CF)	Proposed Volume (CF)	% Water Quality Volume	TN Pollutant Load (lbs/yr)	TP Pollutant Load (lbs/yr)	TSS Pollutant Load (lbs/yr)	Runoff Depth Captured per	Total Nitrogen Removal (%)	Total Nitrogen Removal (lbs/yr)	Total Phosphorus Removal (%)	Total Phosphorus Removal (lbs/yr)	Total TSS Removal (%)	Total TSS Removal (lbs/yr)	Construction Cost $
F1 - A	Taylor Middle School	Potomac	Bioretention	RR	1.74	3.13	2.34	7.21	24%	43%	32%	1.00	0.34	8,834	50	90	No	12	24	0	12	4500	3696	4098	3326.40	7424	7424	84%	73.20	4.40	2773.05	1.18	62.2%	45.52	72.8%	3.20	78.0%	2,162.38	$181,618
F1 - B (Option 1)	Taylor Middle School	Potomac	Dry Swale	RR	0.11	0.41	0.18	0.70	16%	59%	26%	1.00	0.29	737	10	100	No	12	24	0	12	1000	376	688	338.40	1026	737	100%	6.95	0.37	216.57	1.82	66.5%	4.62	77.7%	0.29	83.4%	180.66	$14,733
F1 - B (Option 2)	Taylor Middle School	Potomac	Bioretention	RR	0.25	0.12	0.00	0.38	67%	33%	0%	1.00	0.71	967	15	90	No	12	24	0	12	1350	756	1053	680.40	1733	967	100%	5.49	0.46	316.56	1.06	60.7%	3.33	71.0%	0.33	76.1%	240.75	$23,654
F1 - C	Taylor Middle School	Potomac	Bioretention	RR	0.42	2.55	0.12	3.09	14%	83%	4%	1.00	0.31	3,506	30	180	No	12	24	0	12	5400	4176	4788	3758.40	8546	3506	100%	33.41	1.74	950.91	2.29	67.1%	22.43	78.4%	1.37	84.4%	802.27	$85,766
F2	James Brumfield Elementary School	Potomac	Filtering Practice	ST	4.81	2.90	0.34	8.05	60%	36%	4%	1.00	0.65	18,962			No	12	18	0	12	4600	4000	4300	3100.00	7400	7400	39%	112.14	9.03	6174.58	0.42	23.7%	26.55	37.2%	3.36	47.4%	2,923.80	$85,822
F4 - A	Warrenton Middle School (Dry Swale & Bioretention combo)	Potomac	Bioretention	RR	4.28	5.85	3.07	13.20	32%	44%	23%	1.00	0.41	19,871			No	12	18	0	12	5000	4500	4750	3487.50	8238	8238	41%	147.26	9.73	6285.53	0.53	46.3%	68.17	54.0%	5.25	57.9%	3,636.26	$201,531
F4 - B	Warrenton Middle School	Potomac	Regenerative Stormwater Conveyance	RR	0.01	0.74	0.22	0.97	1%	77%	23%	1.00	0.18	647	20	240	No	9	18	0		4800	3650	3169	1368.84	4538	647	100%	8.75	0.34	155.23	30.19	70.0%	6.13	80.0%	0.27	85.0%	131.95	$29,096
F6 - A	Alice Jane Childs Building	Rappahannock	Permeable Pavers	RR	1.25	0.18	1.12	2.55	49%	7%	44%	1.00	0.50	4,629	40	100	No			0	18	4000	4000	0	2400.00	2400	2400	52%	17.23	1.98	605.83	0.53	46.2%	7.96	53.8%	1.07	57.7%	349.43	$151,557
F6 - B1	Alice Jane Childs Building	Rappahannock	Bioretention	RR	0.21	0.01	0.03	0.25	84%	4%	12%	1.00	0.81	726	10	20	No	6	24	0	12	200	119	80	107.10	187	187	26%	2.11	0.30	89.98	0.25	27.8%	0.59	32.5%	0.10	34.8%	31.30	$4,575
F6 - B2	Alice Jane Childs Building	Rappahannock	Bioretention	RR	0.44	0.46	0.56	1.46	30%	32%	38%	1.00	0.37	1,967			No	6	24	0	12	684	500	296	450.00	746	746	38%	8.84	0.87	244.33	0.47	43.1%	3.81	50.3%	0.44	53.9%	131.59	$18,250
F7	Fauquier High School	Rappahannock	Constructed Wetlands	ST	10.48	28.55	25.12	64.15	16%	45%	39%	1.00	0.27	62,500	52	100	Yes	6	8	0	24	5200	4753	2488	792.17	3280	3280	5%	352.00	28.90	7484.38	0.09	6.3%	22.18	9.9%	2.86	12.6%	943.76	$40,574
F8 - A	CM Bradley	Potomac	Bioretention	RR	0.90	0.73	0.59	2.22	41%	33%	26%	1.00	0.47	3,770	15	100	No	6	12	0		1500	1164	666	291.00	957	957	25%	25.64	1.83	1228.59	0.29	31.6%	8.10	36.8%	0.67	39.4%	484.44	$23,412

	Elementary School																																							
F8 - B	CM Bradley Elementary School	Potomac	Bioretention	RR	0.47	0.35	0.00	0.82	57%	43%	0%	1.00	0.64	1,892	48	144	No	12	24	0	12	6912	5796	6354	5216.40	1157	1892	100%	11.42	0.90	608.92	1.12	61.4%	7.02	71.9%	0.65	77.0%	469.13	$46,278
F9	Auburn Middle School - tree planting	Potomac		ST				0.00				1.00								0		0	0	0	0.00	0	0													
F10 - A	PB Smith Elementary School	Potomac	Bioretention	RR	0.84	0.37	0.21	1.42	59%	26%	15%	1.00	0.63	3,233			No	6	24	0	12	4418	3526	1986	3173.40	5159	3233	100%	19.05	1.54	1068.98	1.06	60.6%	11.55	70.9%	1.10	76.0%	812.63	$79,079
F10 - B	PB Smith Elementary School	Potomac	Filtering Practice	ST	0.99	1.64	0.28	2.91	34%	56%	10%	1.00	0.45	4,768	45	84	No	6	18	0	12	3780	3402	1796	2636.55	4432	4432	93%	34.72	2.31	1471.70	1.23	36.7%	12.75	57.7%	1.34	73.5%	1,081.12	$51,400
F11-A	Vint Hill Village Green	Potomac	Constructed Wetlands	ST	0.59	9.11	0.94	10.63	5%	86%	9%	1.00	0.24	9,435			Yes	6	8	0	24	19274	15000	8569	2500.00	11069	9435	100%	106.59	4.81	2363.90	4.43	40.0%	42.63	65.0%	3.12	80.0%	1,891.12	$116,717
F11-B	Vint Hill Village Green	Potomac	Constructed Wetlands	ST	1.97	12.16	0.12	14.25	14%	85%	1%	1.00	0.32	16,534			Yes	6	8	0	24	44880	35000	19970	5833.33	25803	16534	100%	156.36	8.20	4458.73	2.31	39.2%	61.24	61.7%	5.06	78.5%	3,498.12	$204,532