Town of Vienna, Virginia

Sediment TMDL Action Plan for Difficult Run and Accotink Creek

Public Review Draft – April 14, 2025

Town of Vienna
Department of Public Works
127 Center Street, South
Vienna, Virginia 22180

Prepared with assistance by:
WSP USA Earth & Environment
Herndon, Virginia

Prepared in Compliance with Municipal Separate Storm Sewer System (MS4)
Permit No. VAR040066

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."

Name	Title	Date

RECORD OF PLAN UPDATES

September 27, 2016	Original plan submitted to DEQ.
December 2, 2016	Original plan approved by DEQ.
May 1, 2020	Update in accordance with 2018 MS4 permit.
TBD, 2025	Update in accordance with 2023 MS4 permit.

Town of Vienna, Virginia
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Table of Contents

Tables

Maps and Figures

Appendices

Acronyms and Terms

Acronym	Explanation	Definition
BMP	Best Management Practice	Structural or non-structural techniques used to reduce pollution at its source or to capture and treat stormwater runoff.
DEQ	Virginia Department of Environmental Quality	The state regulatory agency responsible for issuance of VPDES permits.
IDDE	Illicit Discharge Detection and Elimination	An IDDE plan is developed and implemented to identify and eliminate illicit discharges to the MS4.
MCM	Minimum Control Measures	Minimum measures that must be implemented to reduce and eliminate sources of pollution. There are six MCMs in the Town's MS4 VPDES permit.
MS4	Municipal Separate Storm Sewer System	A conveyance or system of conveyances that is owned and/or operated by a public entity.
TMDL	Total Maximum Daily Load	The maximum amount of a pollutant that can enter a water body without violating water quality standards.
TSS	Total Suspended Solids	Generally interchangeable with sediment for pollutant reduction purposes. One of three primary pollutants affecting the health of the Chesapeake Bay for which WLAs have been established.
VPDES	Virginia Pollutant Discharge Elimination System	The permit issued to an entity that allows for the discharge of stormwater to waters of the state under prescribed conditions. Loudoun holds a VPDES permit for its MS4.
USEPA	United States Environmental Protection Agency	The federal agency responsible for environmental regulation and enforcement.
WLA	Wasteload Allocation	The portion of a receiving water's loading capacity that is allocated to a specific source (such as a MS4).

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1. Introduction

1.1 Purpose

This Sediment Total Maximum Daily Load (TMDL) Action Plan for Difficult Run and Accotink Creek demonstrates how the Town of Vienna intends to meet the "Local TMDL Special Condition" in Part II B of the General Permit for Discharges from Small Municipal Separate Storm Sewer Systems (MS4s). The Town's most recent MS4 permit (VAR040066) issued by the Virginia Department of Environmental Quality (DEQ) became effective November 1, 2023. This plan updates and replaces all previous plans.

The Town's MS4 permit requires the development and implementation of action plans for impaired streams where a TMDL approved by the State Water Control Board (SWCB) assigns a waste load allocation (WLA) to the Town. A TMDL establishes the maximum amount of a pollutant that can enter a water body without violating water quality standards. A WLA represents the total pollutant loading that is allocated to a specific permitted source.

The Town has been assigned two WLAs for sediment. The "Benthic TMDL for the Difficult Run Watershed" affects MS4 regulated areas of the Town draining to Difficult Run. The "Sediment TMDLs for the Accotink Creek Watershed" affects MS4 regulated areas of the Town draining to Accotink Creek. Sediment pollution is a leading cause of stream degradation and has been identified as a primary stressor associated with the decline of benthic habitats in both watersheds. While some sediment is a natural part of the water environment, too much sediment can smother bottom dwelling organism and larvae, clog or impair the organs of filter-feeding organisms, and block sunlight to underwater plants. These plants are important to aquatic life both in terms of habitat and as a food source. In addition, other pollutants such as phosphorus and PCBs may be attached to sediment particles.

This plan addresses the requirements of the MS4 permit by: (1) describing the WLAs assigned to the Town and the corresponding reduction requirements; (2) identifying significant sources of the pollutants of concern discharging from the Town's MS4; (3) identifying best management practices (BMPs) to reduce the pollutants of concern in accordance with special permit requirements; (4) calculating existing and planned pollutant reductions; (5) developing outreach strategies to enhance the public's ability to eliminate and reduce discharges of pollutants; and, (6) establishing an implementation schedule for the permit term.

In accordance with Part II B 2 a of the MS4 permit, the plan also includes an evaluation of the results achieved by the previous action plan and a description of any adaptive management strategies incorporated into the plan based on the evaluation.

The Town's original plan addressed the sediment WLA assigned to Difficult Run. The plan was updated in accordance with the 2018 MS4 permit to include the WLA assigned to Accotink Creek. In accordance with the 2023 MS4 permit, the Town must update previously approved plans no later than 18 months after the effective permit date. This plan replaces the previously approved plan and updates strategies based on the evaluation of results achieved by the previous action plan.

1.2 Chesapeake Bay TMDL Action Plan

This Sediment TMDL Action Plan is designed to work in conjunction with the Town's Final Phase III Chesapeake Bay TMDL Action Plan. A TMDL was developed for the Chesapeake Bay by the U.S. Environmental Protection Agency (EPA) in 2010. Pollutants of concern (POCs) for the Chesapeake Bay include nitrogen, phosphorus, and sediment. The Town's 2013 and 2018 MS4 permits required specific reductions in sediment over three five-year permit cycles. The 2023 MS4 permit removes sediment from the definition of POC and the pollutant reduction requirements. However, the Final Phase III Chesapeake Bay TMDL Action Plan continues to serve as the Town's primary tool for identifying projects to reduce sediment pollution since total phosphorus and sediment reductions are closely related. Projects are further discussed in Section 2.5.

1.3 Cooperative Approach with Fairfax County

The Town has entered into an agreement with Fairfax County and the Town of Herndon to cooperate in the development and implementation of TMDL action plans. The agreement, included in Appendix A, was originally adopted by the Town of Vienna on October 28, 2013 and by Fairfax County on April 1, 2014. The agreement was updated by all parties effective March 8, 2017.

In accordance with the agreement, the cooperating localities jointly receive credit for each stormwater management project funded through the County's Stormwater Service District Fee and brought on-line as of July 1, 2009. The Stormwater Service District Fee is assessed in the County and the Town. Credit is provided regardless of the project's location within the cooperating localities and in proportion to each locality's MS4 service area. For the larger Chesapeake Bay TMDL, Vienna is credited 3.5% of pollutant reductions (nitrogen, phosphorus, and sediment) for each eligible stormwater project. For the Difficult Run sediment TMDL, Vienna is credited 14.6% of the sediment reduction for each eligible project located within the Difficult Run watershed. For the Accotink Creek sediment TMDL, Vienna is credited 7.7% of the sediment reduction for each eligible project located within the Accotink Creek watershed. These figures may shift slightly in the future as the cooperating localities continue to refine their MS4 service areas. Any changes will be documented to DEQ in the Town's MS4 annual reports.

1.4 Permit Compliance Crosswalk

This plan has been prepared in accordance with Part II B of the MS4 permit, DEQ Guidance Memo 16-2006 "TMDL Action Planning for Local TMDL Maximum Daily Loads," applicable portions of DEQ Guidance Memo 15-2005 "Chesapeake Bay TMDL Special Conditions Guidance," and other guidance provided by DEQ. Table 1A provides an overview of the organization of this plan and how each section addresses the 2023 MS4 permit.

Table 1A – Action Plan and Permit Compliance Crosswalk

Action Plan	Plan Element	2023 MS4 Permit	
Section 1	Introduction		
Section 2.1	Overview of TMDLs	Part II B 4	a. The TMDL project name. b. The EPA approval date of the TMDL.
Section 2.2	Waste Load Allocation	Part II B 4	c. The wasteload allocated to the permittee (individually or in aggregate), and the corresponding percent reduction, if applicable.
Section 2.3	Identification of Significant Sources of Sediment	Part II B 4	d. Identification of the significant sources of the pollutants of concern discharging to the permittee's MS4 and that are not covered under a separate VPDES permit. For the purpose of this requirement, a significant source of pollutants of concern means a discharge where the expected pollutant loading is greater than the average pollutant loading for the land use identified in the TMDL.
Section 2.4	Evaluation of Previous Action Plan and Adaptive Management Strategies	Part II B 2	a. For TMDLs approved by EPA prior to July 1, 2018, and in which an individual or aggregate wasteload has been allocated to the permittee, the permittee shall develop and initiate or update as applicable the local TMDL Action plans to meet the conditions of Part II B 4, B 6, B 7, and B 8, as applicable no later than 18 months after permit effective date and continue implementation of the action plan. Updated plans shall include: (1) an evaluation of the results achieved by the previous action plan; and, (2) any adaptive management strategies incorporated into updated action plans based on action plan evaluation.
Section 2.5	Best Management Practices	Part II B 4	e. The BMPs designed to reduce the pollutants of concern in accordance with Part II B 5, B 6, B 7, and B 8.

Action Plan	Plan Element	2023 MS4 Permit	
Section 2.6	Sediment Reduction Calculations	Part II B 4	f. Any calculations required in accordance with Part II B 5, B 6, B 7, or B 8.
		Part II B 6	a. The permittee shall reduce the loads associated with sediment, phosphorus, or nitrogen through implementation of one or more of the following: (1) One or more of the BMPs from the Virginia Stormwater BMP Clearinghouse listed in 9VAC25-870-65 or other approved BMPs found on the Virginia Stormwater BMP Clearinghouse website; (2) One or more BMPs approved by the Chesapeake Bay Program. Pollutant load reductions generated by annual practices, such as street and storm drain cleaning, shall only be applied to the compliance year in which the annual practice was implemented; or, (3) Land disturbance thresholds lower than Virginia's regulatory requirements for erosion and sediment control and post-development stormwater management. b. The permittee may meet the local TMDL requirements for sediment, phosphorus, or nitrogen through BMPs implemented or sediment, phosphorus, or nitrogen credits acquired. BMPs implemented and nutrient and sediment reductions acquired to meet the requirements of the Chesapeake Bay TMDL in Part II A may also be utilized to meet local TMDL requirements as long as the BMPs are implemented or the credits are generated in the watershed for which local water quality is impaired. c. The permittee shall calculate the anticipated load reduction achieved from each BMP and include the calculations in the action plan required in Part II B 3 f.

Action Plan	Plan Element	2023 MS4 Permit	
Section 2.7	Outreach Strategy	Part II B 4	g. For action plans developed in accordance with Part II B 5, B 6, and B 8, an outreach strategy to enhance the public's education (including employees) on methods to eliminate and reduce discharges of the pollutants.
Section 3	Schedule of Anticipated Actions	Part II B 4	h. A schedule of anticipated actions planned for implementation during this permit term.
Section 4	Anticipated End Date	Part II B 6	d. No later than 36 months after the effective date of this permit, the permittee shall submit to the department an update on the progress made toward achieving local TMDL action plan goals and the anticipated end dates by which the permittee will meet each wasteload allocation for sediment, phosphorus, or nitrogen. The proposed end date may be developed in accordance with Part II B 3.
Section 5	Opportunity for Public Comment	Part II B 9	Prior to submittal of the action plan required in Part II B 2, the permittee shall provide an opportunity for public comment for no fewer than 15 days on the proposal to meet the local TMDL action plan requirements.

2. Sediment TMDL Action Plan

2.1 Overview of TMDLs

This TMDL action plan addresses two sediment WLAs assigned to the Town of Vienna. The "Benthic TMDL for the Difficult Run Watershed" was approved by the SWCB on April 27, 2009 and by the U.S. EPA on October 7, 2008. The "Sediment TMDLs for the Accotink Creek Watershed" was approved by the SWCB on April 12, 2018 and by the U.S. EPA on May 23, 2018. Map 2A and Map 2B show the Difficult Run and Accotink Creek watersheds in relation to the Town of Vienna and the surrounding area.

Difficult Run was first listed as impaired on Virginia's 303(d) TMDL Priority List in 1998 for not supporting the aquatic life use due to poor health in the benthic biological community. The TMDL identifies sediment as the primary stressor impacting biologically impaired segments of Difficult Run. Sources of the sediment identified in the TMDL include urban stormwater runoff, stream bank erosion, and sediment loss from habitat degradation associated with urbanization.

The lower mainstem of Accotink Creek was first listed as impaired in 1996 for not supporting the aquatic life use. The impairment was extended to include the entire upper mainstem in 2010. The TMDL identifies sediment and chloride as the primary stressors. A separate TMDL action plan has been developed for chloride. The major source of the sediment loading for the upper mainstem is identified in the TMDL as streambank erosion. Developed land and transportation infrastructure are also identified as significant sources of sediment pollution.

2.2 Waste Load Allocation

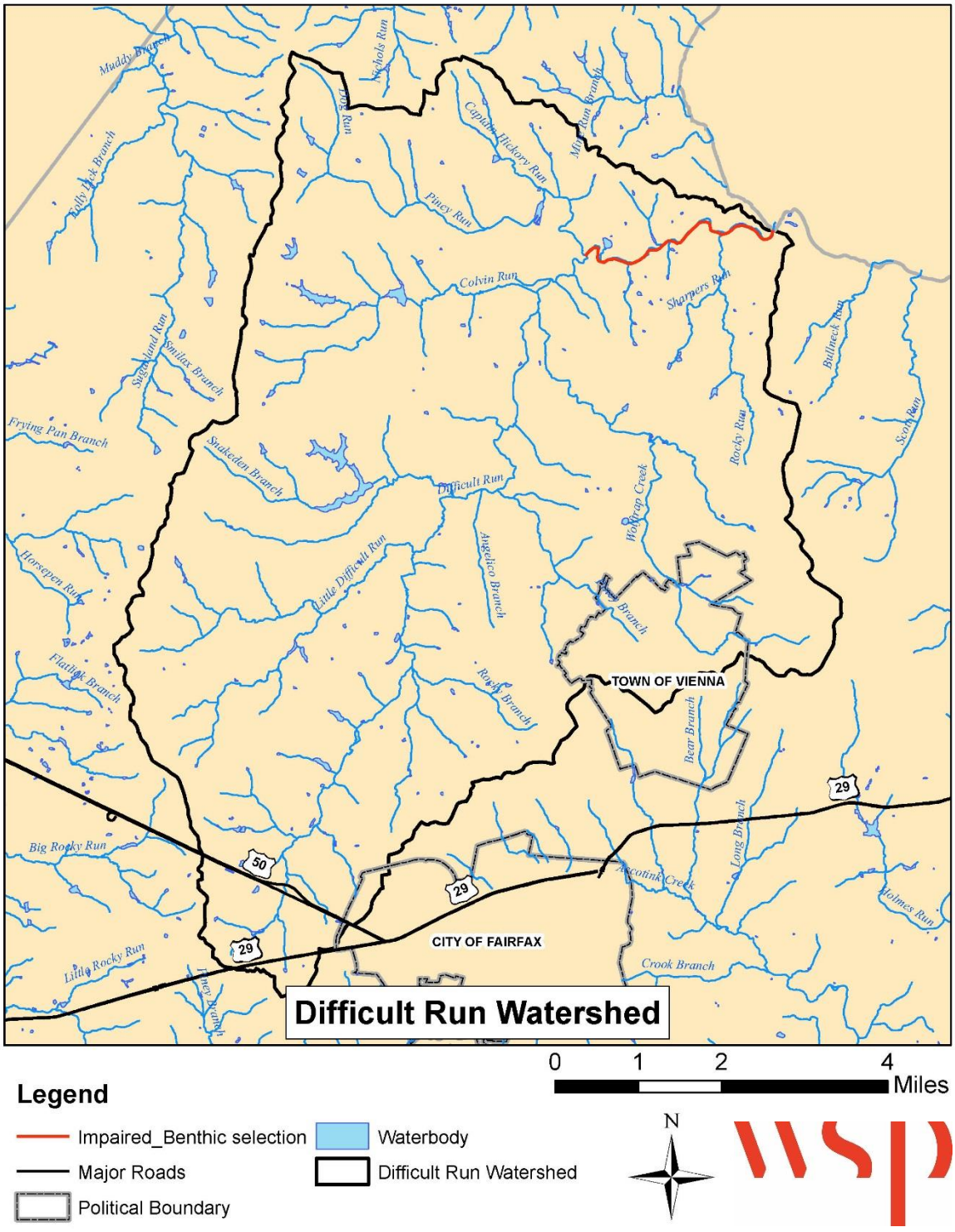
This action plan applies to those areas of the Town's regulated MS4 that drain to the Difficult Run and Accotink Creek watersheds. The MS4 regulated area is defined in the MS4 permit as a system that discharges to waters of the state that is owned or operated by the permittee. As a practical matter, the regulated MS4 area includes all of the Town with the exception of areas draining directly to a local stream without entering the Town's storm sewer system. Map 2C shows the watersheds in relation to the Town's MS4 service area.

The Difficult Run watershed drains approximately 37,260 acres of Fairfax County, the City of Fairfax, and the Town of Vienna. The Town's portion of the watershed is 1,683 acres, or approximately 4.5%. Major tributaries of Difficult Run in the Town are Wolftrap Creek and Piney Branch.

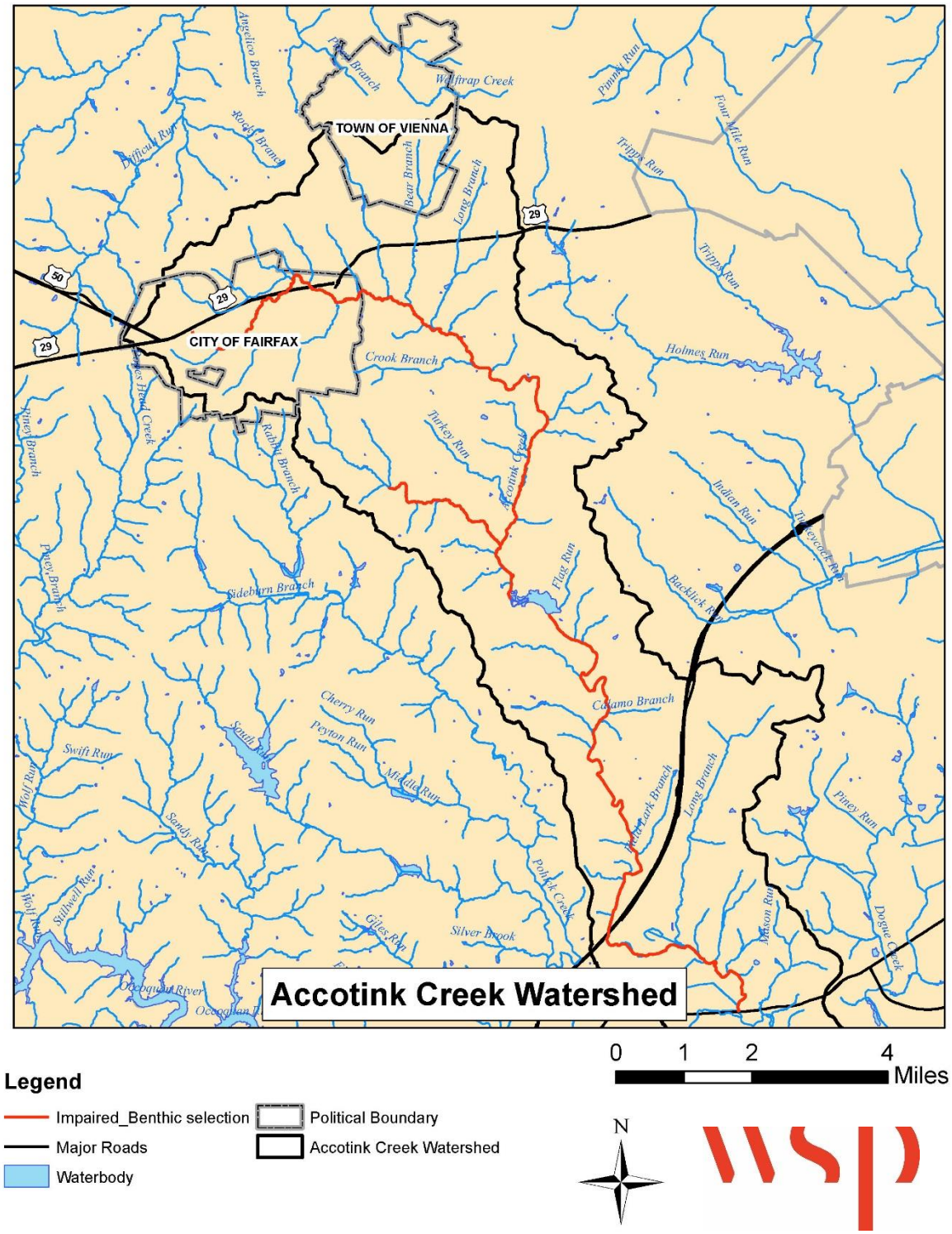
The WLA for MS4 permit holders in the Difficult Run watershed is aggregated. The existing load for MS4s is identified as 5,316.6 tons/year and the WLA is identified as 3,595.0 tons/year. This represents a 32% reduction from existing conditions. Table 2A summarizes existing and allocated sediment loads from all MS4 sources in the Difficult Run watershed.[1]

[1] Table 7-2 of the TMDL. The loading unit from the TMDL is tons/year. This has been converted to lbs/year for consistency in this action plan.

Map 2A – Difficult Run Watershed



Map 2B – Accotink Creek Watershed



Map 2C – Town of Vienna MS4 Service Area with Watersheds

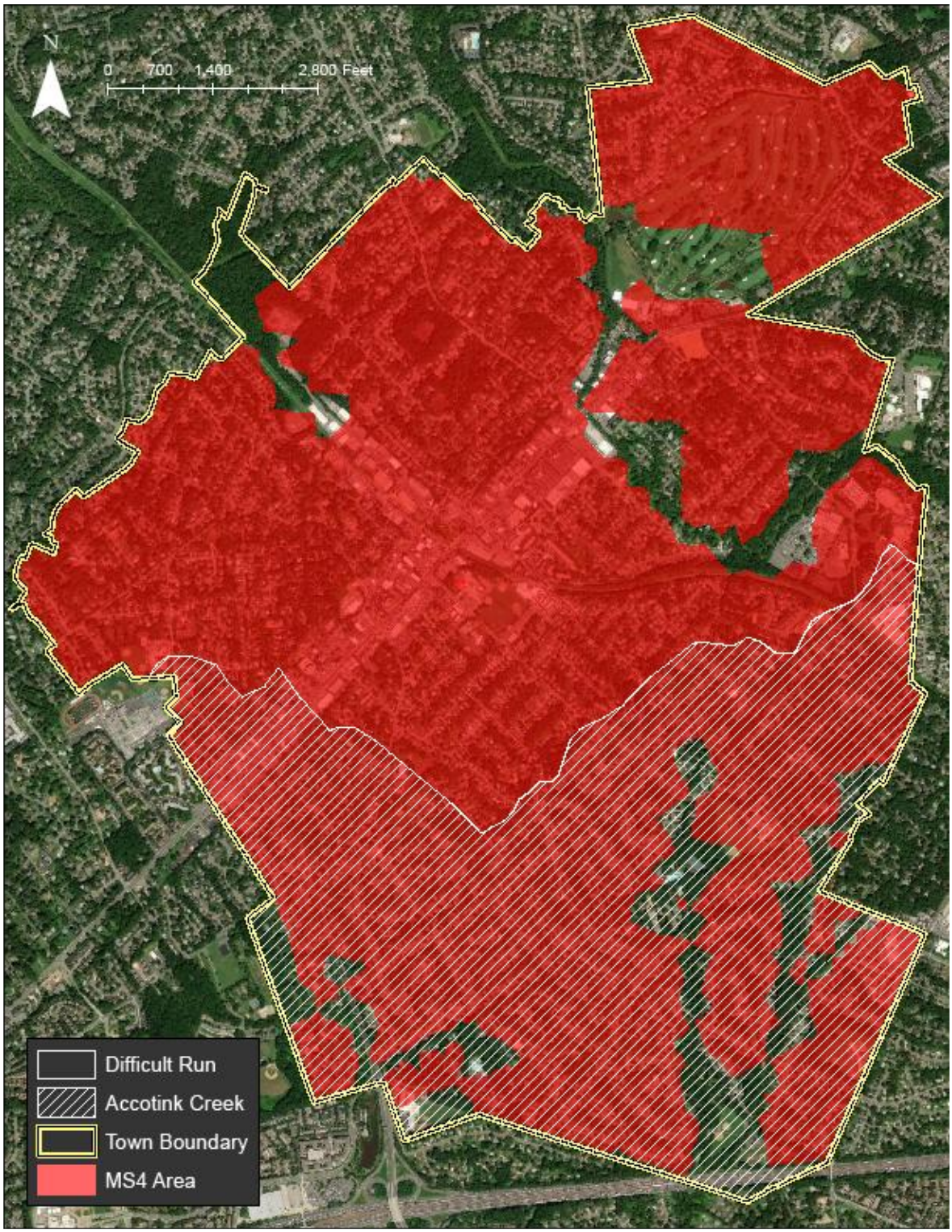


Table 2A – Difficult Run TMDL Aggregate Allocations for MS4s

Aggregated MS4s	Baseline Sediment Load	Allocated Sediment Load	% Reduction	Load Reduction
Town of Vienna City of Fairfax Fairfax County VDOT Fairfax County Public Schools George Washington Memorial Parkway	10,633,200 lbs/yr (5,316.6 tons/yr)	7,190,000 lbs/yr (3,595.0 tons/yr)	32%	3,443,200 lbs/yr (1,721.6 tons/yr)

The Accotink Creek watershed (upper and lower mainstems) drains approximately 31,112 acres of Fairfax County, Fort Belvoir, the City of Fairfax, and the Town of Vienna. The Town's portion of the watershed is 1,142 acres, or approximately 3.8%. Major tributaries of Accotink Creek in the Town are Hunter's Branch and Bear Branch.

The WLA for MS4 permit holders in the Accotink Creek watershed is aggregated in the TMDL report. However, it is noted that VDOT does not own roads within the Town of Vienna. The practical effect is that the entire WLA is the Town's responsibility. The existing load for the Town's MS4 is identified as 733 tons/year and the WLA is identified as 174 tons/year. This represents a 76% reduction from existing conditions. Table 2B summarizes existing and allocated sediment loads from the Town's WLA in the Accotink Creek watershed.[2]

Table 2B – Accotink Creek TMDL Aggregate Allocations for MS4s

Aggregated MS4s	Baseline Sediment Load	Allocated Sediment Load	% Reduction	Load Reduction
Town of Vienna VDOT	1,466,000 lbs/yr (733 tons/yr)	348,000 lbs/yr (174 tons/yr)	76%	1,118,000 lbs/yr (559 tons/yr)

2.3 Identification of Significant Sources of Sediment

Both the Difficult Run and Accotink Creek TMDLs describe significant sources of controllable sediment as being associated with streambank erosion and stormwater runoff from developed land. Sediment from developed land enters the MS4 when stormwater mixes with exposed or poorly stabilized soils. In urban areas, soils are often subject to compaction or frequent disturbance (such as vehicle wheel ruts, pedestrian traffic, sports activities, etc.) where stabilization with vegetation is difficult. Soil stockpiles that are not protected from precipitation can also be a source of sediment. Finally, land disturbing activities (development, utility installation, roadwork, etc.) can be a source of sediment if not properly controlled. It is noted that construction activities one acre and greater are considered separate from the MS4 allocation since they are subject to separate VPDES construction general permits.

[2] Table 4-5 of the TMDL. The loading unit from the TMDL is tons/year. This has been converted to lbs/year for consistency in this action plan.

Stream bank erosion is caused by the volume and velocity of the flow within the stream, which may be increased during storm events as a result of runoff from impervious areas such as parking lots, roadways, and rooftops.

The Town has conducted a review of Town owned or operated properties to identify any significant sources of sediment. A source is considered significant if the pollutant loading is expected to be greater than the average pollutant loading for the land use identified in the TMDL. For the purpose of this investigation, the Town considered the following risk factors: the existence of soil stockpiles; playing fields where high intensity use may lead to exposed soil; property with large areas of exposed soil (≥2,500 square feet); and, property with large (≥1 acre) uncontrolled impervious surfaces. The threshold of ≥2,500 square feet was chosen for exposed soil since that is the threshold at which land disturbing activities are subject to the Town's erosion and sediment control program. The threshold of ≥1 acre was chosen for impervious surface area since that is the threshold at which land disturbing activities are required to obtain a state stormwater management permit.

Table 2C shows the results of this evaluation. Elevated risk factors are indicated in orange. The table also indicates whether specific BMPs are in place for a site.

Table 2C – Evaluation of Potential Significant Sediment Sources from Town Property

Property	Watershed	Soil Stockpiles?	High Intensity Fields?	Exposed Soil (≥2,500 SF)?	Impervious Area (≥1 Acre)	Specific BMP in Place
Branch Road Tot Lot	Difficult	No	No	No	No	-
Glyndon Park	Difficult	No	Yes	No	No	-
Northside Property Yard	Difficult	Yes	No	No	Yes	SWPPP
Northside Park	Difficult	No	No	No	No	-
Salsbury Spring Park	Difficult	No	No	No	No	-
Town Hall	Difficult	No	No	No	Yes	Bioswale
Vienna Community Center	Difficult	No	No	No	Yes	Bioretention
Vienna Town Green	Difficult	No	No	No	No	-
Waters and Caffi Fields[3]	Difficult	No	Yes	Yes	No	-
Petersen Lane Park	Difficult	No	No	No	No	-
Beulah Road Lot	Difficult	Yes	No	No	Yes	SOP
Wildwood Park	Difficult	No	No	No	No	-
Meadow Lane Park	Accotink	No	Yes	Yes	No	-
Moorefield Park/Vienna Dog Park	Accotink	No	No	No	No	-
Southside Park	Accotink	No	Yes	Yes	No	-

[3] Owned by Fairfax County Public Schools. Fields maintained by Town of Vienna.

Property	Watershed	Soil Stockpiles?	High Intensity Fields?	Exposed Soil (≥2,500 SF)?	Impervious Area (≥1 Acre)	Specific BMP in Place
Sarah Walker Mercer Park	Accotink	No	No	No	No	Rain Garden
Nutley Street Maintenance Yard	Accotink	Yes	No	No	No	SWPPP

Risk factors associated with private properties are generally the same as those associated with Town owned or operated properties. The Town has adopted Town Code, Chapter 23 "Environmental Controls" to minimize soil erosion during construction and to reduce sediment pollution and water quantity from impervious surfaces as a result of new development and redevelopment. The Town is fully compliant with the Virginia Erosion and Stormwater Management Act and its attendant regulations. There are no known private playing fields or soil stockpiles (other than small, intermittent stockpiles such as those associated with landscaping). There are also no known private properties with large amounts of exposed soil. However, if a stockpile or bare area became a source of pollution, Chapter 23 of the Town Code allows the Town to require the property owner to establish mitigation measures. The provisions of Chapter 23 are further discussed in Section 2.5.

2.4 Plan Evaluation and Adaptive Management Strategies

The Town has successfully implemented the previous action plan as demonstrated in MS4 annual reports found acceptable to DEQ. The Town has identified four data points to help evaluate the results of the action plan: (1) the Clean Water Partners annual survey to capture knowledge, awareness, and behaviors surrounding stormwater quality; (2) the results of the Town's dry weather outfall monitoring program; (3) annual walk-throughs of Town properties identified as having an elevated risk for sediment pollution; and (4) projects from the previous plan implemented by the Town to reduce sediment pollution. This action plan has been reviewed based on this information and updated, as appropriate.

Clean Water Partners

The Town participates in the Clean Water Partners regional stormwater quality public education and outreach program. A component of the annual education campaign is illicit discharges, which includes reporting erosion from construction activities. Each year, Clean Water Partners conducts a survey of 500 Northern Virginia residents to measure attitudes and behaviors affecting stormwater quality. The survey includes specific information about Fairfax County residents, which includes the Town of Vienna. The survey found that for Fairfax County residents, 79.8% know how to identify an illicit discharge, 46.5% know who to contact to report the discharge, and 61.7% would call a government official. Regionally, the percent of people indicating that they would "definitely" or "probably" contact an official has risen over time (from 41.6% in 2018 to 66.6% in 2024). This is a positive trend. The highest barriers to reporting an illicit discharge for Fairfax County residents are "None of my business" (21.4%) and "Don't want to communicate with authorities" (22.9%). These challenges should be factored into future outreach messaging.

Dry Weather Outfall Screening

The Town conducts dry weather outfall screening on at least 50 outfalls on an annual basis. This includes observing for excessive amounts of sediment. FY2024 screening did not observe any active sediment discharges. However, the Town identified 11 outfalls with sediment accumulation. While potential sources could not be determined, these outfalls will be prioritized for future screening.

Public Facilities Walk-Throughs

The Town conducts annual walk-throughs of public facilities with elevated risk factors for sediment that are not otherwise subject to a separate stormwater pollution prevention plan (SWPPP). Sites visited in FY2024 included Meadow Lane Park, Southside Park, and Waters and Caffi fields. Minor erosion and sediment were identified by Town staff, which was referred to maintenance crews for correction. The FY2024 walk-throughs are found in Appendix B.

Sediment Reduction Projects

Since the 2020 action plan, the Town has made significant progress in sediment reductions through retrofit projects, stream restorations, and redevelopment. Retrofit and stream restoration projects have been implemented by the Town and through the cooperative partnership with Fairfax County. In the 2020 plan, the Town reported cumulative sediment reductions of 273,830.82 pounds/year in the Difficult Run watershed and 359,066.67 pounds/year in the Accotink Creek watershed. In the FY2024 MS4 annual report, the Town reported cumulative sediment reductions of 1,282,173.22 pounds/year in the Difficult Run watershed and 771,592.35 pounds/year in the Accotink Creek watershed. Projects are further addressed in Section 2.5.

2.5 Best Management Practices

The Town has in place a rigorous program aimed at preventing new sources of sediment and reducing the discharge of existing sources of sediment from the MS4. This program includes provisions of the Town Code prohibiting illicit discharges and implementing stormwater quality and quantity control requirements, the MS4 Program Plan, and the Final Phase III Chesapeake Bay TMDL Action Plan. The following provides an overview of these programs as well as a description of actions to address potential sources of sediment from Town property identified in Section 2.3.

Town Code – Illicit Discharges and Stormwater Controls

The Town prohibits illicit discharges to the storm sewer system, which includes sediment, in Section 16.2.2 of the Town Code. This section provides: “It shall be unlawful for any person to deposit, or cause to be deposited, in any public storm drainage facility, including gutters, ditches and watercourses, any substance including, but not limited to, trash, accumulations of grass clippings, petroleum products, petroleum waste, or other noxious or flammable substances; provided, however, that leaves may be piled at curbs during such seasons and in such areas as may not or in the future be furnished mechanical leaf collection service.”

The Town Council has adopted stormwater quality and quantity requirements (Town Code Chapter 23, “Environmental Controls”) that meet or exceed the requirements of the Virginia Erosion and Stormwater Management Act (VESMA) (§62.1-44.15:24 et seq, Code of Virginia), and their attendant regulations. While phosphorus is the regulated pollutant, the regulations are designed to also control for nitrogen and sediment. The Town’s ordinance applies to any land-disturbing activity 2,500 square feet and greater, which is the threshold required under VESMA for localities subject to the Chesapeake Bay Preservation Act. However, the Town’s requirements are more stringent than the minimum standards since it could have exempted single family residential development under one acre. All new development must meet a standard of 0.41 pounds of phosphorus per acre per year. All redevelopment must reduce the phosphorus load by 20% if the land disturbance is one acre or greater or by 10% if the land disturbance is less than

one acre (not to exceed the 0.41 standard for new development). The standard of 0.41 pounds of phosphorus per acre per year is mandated by the VESMA, and according to DEQ's guidance, meets the requirement for no-net-increase from phosphorus, nitrogen, and sediment.

While the Town Code generally applies to new development or redevelopment, the Town is authorized in Section 23-5(f) to require a property owner to develop and implement an erosion and sediment control plan in an "erosion impact area." An erosion impact area is defined as "an area of land not associated with current land disturbing activity but subject to persistent soil erosion resulting in the delivery of sediment onto neighboring properties or into state waters. This definition shall not apply to any lot or parcel of land of 10,000 square feet or less used for residential purposes or to shorelines where erosion results from wave action of other coastal processes."

MS4 Program Plan

The Town of Vienna has adopted an MS4 Program Plan that documents implementation of all MS4 permit requirements, including the programmatic and legal authorities required to meet the "Local TMDL Special Condition." The full MS4 Program Plan can be found at https://www.viennava.gov/residents/sustainability/protecting-the-chesapeake-bay.

Table 2D provides a summary of elements of the six minimum control measures (MCMs) implemented by the Town under the MS4 that relate to meeting the sediment TMDL.

Table 2D – MS4 Program Plan Components Related to the Sediment TMDL

Source Document	Description	Implementation and Schedule
MS4 Program Plan BMP 1.4 "Sediment and Other Illicit Discharges"	The objective of this BMP is to reduce illicit discharges, with a particular focus on sediment pollution, by educating residents on how to recognize and report a suspected illicit discharge.	The Town has identified all residents as the target audience for sediment and illicit-discharge education. The following actions are contained in the MS4 Program Plan: • At least once annually, promote the means by which the public can report a suspected illicit discharge using one of the following: (1) press release; (2) article in the Vienna Voice newsletter; (3) message in the Town Calendar; or, (4) message in the quarterly residential water bill. • At least once annually, include a message about how the public can report a suspected illicit discharge using a social media platform.
MS4 Program Plan BMP 2.2 "Public Reporting of Potential Illicit Discharges"	The objective of this BMP is to promote the ability of the public to report illicit discharges, including complaints about land disturbing activities.	• Provide information on how to report a potential illicit discharge or illegal dumping (including phone, email, and online forms) on the stormwater webpage.
MS4 Program Plan BMP 3.2 "Prohibition of Illicit Discharges"	The objective of this BMP is to prohibit illicit discharges in general and to provide the Town with adequate enforcement authority.	Enforce Town Code Section 16-2.2. Ongoing implementation.

Source Document	Description	Implementation and Schedule
MS4 Program Plan BMP 3.3 "Written Procedures for Illicit Discharges and Dumping"	The objective of this BMP is to establish procedures to identify and address unauthorized discharges and illegal dumping. The Town adopted an Illicit Discharge Detection and Elimination (IDDE) Manual that contains information about sediment pollution.	The following actions are contained in the MS4 Program Plan: • Implement the IDDE plan. • Incorporate relevant portions of the IDDE plan into field personnel training.
MS4 Program Plan BMP 3.4 "Dry Weather Outfall Screening"	The objective of this BMP is to identify and eliminate illicit discharges as soon as possible through a dry weather outfall screening program. The program includes sediment pollution.	The following actions are contained in the MS4 Program Plan: • Perform dry weather outfall screening for at least 50 outfalls annually such that no more than 50% are screened in the previous 12-month period.
MCM #4: "Construction Site Stormwater Runoff Control"	The objective of this BMP is to minimize impacts to water quality from construction activities by maintaining consistency with the Virginia Erosion and Stormwater Management Act regulations	Implement a program consistent with state law and regulations (Town Code Chapter 23, "Vienna Erosion and Stormwater Management Program."). Train all plan review, inspection, and enforcement staff as required by state law and regulation.
MCM #5: "Post Construction Stormwater Management"	The objective of this BMP is to minimize the long-term impacts to water quality caused by development by maintaining consistency with the Virginia Erosion and Stormwater Management Act regulations.	Implement a program consistent with state law and regulations (Town Code Chapter 23, "Vienna Erosion and Stormwater Management Program."). Train all plan review, inspection, and enforcement staff as required by state law and regulation.
MS4 Program Plan BMP 6.1 "Good Housekeeping Standard Operating Procedures"	The objective of this BMP is to minimize or prevent the discharge of pollution from municipal operations through implementation of written prodedures.	The following actions are contained in the MS4 Program Plan: • Implement the Good Housekeeping SOPs. • Annually review, and if necessary update, the Good Housekeeping SOPs based on new best practices and observed deficiencies. • Incorporate Good Housekeeping SOPs into staff training.
MS4 Program Plan BMP 6.2 "Stormwater Pollution Prevention Plans for High-Priority Facilities"	The objective of this BMP is to reduce and prevent the discharge of pollutants from high-priority facilities through the implementation of SWPPPs and other pollution prevention measures.	Implement the Town's existing SWPPPs (Northside Property Yard and Nutley Street Maintenance Yard). Update the SWPPPs during FY2025. .
MS4 Program Plan BMP 6.3 "Employee Training"	The objective of this BMP is to ensure that employees are aware of pollution prevention goals and trained to recognize and correct potential sources of pollution. Prevention of sediment	Department of Public Works and Parks Maintenance staff are trained in general pollution prevention, including sediment, every other year in accordance with the MS4 Program Plan.

Source Document	Description	Implementation and Schedule
	pollution is an element of the Town's training.	
MS4 Program Plan BMP 6.7 "Street Sweeping"	The objective of this BMP is to reduce trash, particulates, and organic matter from entering the storm system through an effective street sweeping program.	Continue to conduct Town-wide sweeping operations at least once a year and sweep after major outdoor special events.

Chesapeake Bay TMDL Action Plan

The Town's Final Phase III Chesapeake Bay TMDL Action Plan contains several sediment reduction strategies that are directly applicable to the Difficult Run and Accotink Creek TMDLs. These are generally discussed in Table 2E. Specific projects and calculations are contained in Section 2.6.

Table 2E – Chesapeake Bay TMDL Action Plan Components Related to the Sediment TMDL

Strategy	Description
Redevelopment	Sediment loads in the Town will continue to be reduced through improved stormwater management controls as a result of redevelopment. Town Code Chapter 23, "Vienna Erosion and Stormwater Management Program" requires a reduction in total phosphorus for any redevelopment project. This reduction also results in a reduction in sediment. Starting July 1, 2014 redevelopment over one acre or more must achieve a 20% reduction. Redevelopment under one acre must achieve a 10% reduction (except for exempted activities per the Code of Virginia).
Street Sweeping	The Town implements a Town-wide street sweeping program, which reduces the amount of sediment and other particulates that are washed into the storm drain system. Based on guidance from DEQ, the Town meets the minimum requirements for SCP-6, which has a 2% TSS reduction efficiency.
Shared Credit Projects with Fairfax County	In accordance with the agreement with Fairfax County (see Section 1.3), the Town will continue to take its share of sediment reduction credit for stormwater management and stream restoration projects implemented in the Difficult Run and Accotink Creek watersheds. The Town receives 14.6% of the credit for the Difficult Run TMDL and 7.7% of the credit for the Accotink Creek TMDL. While the Town only receives a percentage of the credit, it is worth noting that several stream restoration projects have been implemented in the Town itself. These include Wolftrap Creek Phase I (completed 2013), Hunters Branch (completed 2016), Wolftrap Creek Phase II (completed 2018), and Piney Branch (completed 2021).

Town Owned or Operated Properties

The assessment in Section 2.3 identifies several Town properties with risk factors for sediment pollution. This includes the Northside Property Yard (high impervious area and soil stockpiles), Vienna Community Center (high impervious area), Town Hall (high impervious area), multiple parks containing high intensity

fields, Nutley Street Maintenance Yard (soil stockpiles), and Beulah Road Lot (high impervious area and temporary mulch stockpiles for distribution).

The Town has adopted SWPPPs for the Northside Property Yard and Nutley Street Maintenance Yard that include BMPs for sediment reduction. This SWPPP is continuously implemented and includes semi-annual site walk-throughs and annual training. The Town has also developed a Northside Property Yard Stormwater Design Improvements Conceptual Report. The report contains recommendations for stormwater management improvements at the property, including enhanced stockpile containment and cover. Design and permit approvals have been obtained to install the stockpile covers. Implementation is pending final budget approval.

The Vienna Community Center underwent a major renovation in FY2018. As part of the renovation, the Town installed stormwater quality and quantity controls, including two StormTech manufactured stormwater treatment devices and porous pavement. Sediment reductions are described in Section 2.6.

In FY2019, the Town installed bioretention and grass swales as part of an upgrade to the Town Hall parking area (see front cover). Sediment reductions are described in Section 2.6.

In FY2024, the Town installed bioretention facilities as part of a curb-extension/traffic calming project at the intersections of Tapawingo Road and Kingsley Road at Meadow Lane.

The Town maintains several high-intensity sports fields. Waters and Caffi Fields are located in the Difficult Run watershed. They are owned by Fairfax County Public Schools but managed by the Town's Department of Parks and Recreation. Beginning in FY2017, the Town began conducting an annual walk-through of the fields to monitor for any signs of erosion and to take corrective action if necessary. Two additional parks in the Accotink Creek watershed with high-intensity sports fields, Meadow Lane Park and Southside Park, were added in FY2021. A third park, Glyndon Park, will be added beginning in FY2026.

Bioretention incorporated into traffic calming project.

The Town will continue to assess additional opportunities to implement sediment reductions at Town owned or operated properties during the current permit cycle and will update this action plan in accordance with MS4 permit requirements if necessary.

2.6 Sediment Reduction Calculations

In accordance with Part II B 6 of the MS4 permit, the Town has calculated the following actual sediment reductions for the Difficult Run and Accotink Creek watersheds. Calculations for Town-specific reductions are in Appendix C. Calculations for shared-project reductions with Fairfax County are in Appendix D.

Table 2F – Summary of Sediment Reductions for Difficult Run

Project	Reduction Type	Year	Total Reduction	Reduction Minus Baseline	% Town Share	Town Share Reduction
Vienna Community Center	Redevelop	2018	1,271.28	1,271.28	100%	1,271.28
135 Center Street S	Redevelop	2018	86.32	86.32	100%	86.32
1008 Electric Avenue	Redevelop	2018	3,451.19	3,451.19	100%	3,451.19
Vienna Town Hall	Retrofit	2019	259.84	259.84	100%	259.84
Vienna Town Hall	Imperv. Reduction	2019	32.84	32.84	100%	32.84
Holy Comforter	Redevelop	2020	71.89	71.89	100%	71.89
200 Maple Avenue E	Redevelop	2021	45.03	45.03	100%	45.03
Malcolm Subdivision	Redevelop	2021	183.07	183.07	100%	183.07
CubeSmart	Redevelop	2022	527.57	527.57	100%	527.57
Westwood Country Club	Redevelop	2022	1,476.19	1,476.19	100%	1,476.19
Subtotal			***7,405.22***	***7,405.22***		***7,405.22***
Shared-Projects with Fairfax County	Retrofit	Appx. D	168,077.91	155,056.16	14.6%	22,638.20
Shared-Projects with Fairfax County	Stream Restoration	Appx. D	9,755,735.96	8,576,231.53	14.6%	1,252,129.80
Subtotal			***9,923,813.87***	***8,731,287.70***		***1,274,768.00***
Total			**9,931,219.09**	**8,738,692.92**		**1,282,173.22**

Table 2G – Summary of Sediment Reductions for Accotink Creek

Project	Reduction Type	Year	Total Reduction	Reduction Minus Baseline	% Town Share	Town Share Reduction
Flagship	Redevelop	2020	311.93	311.93	100%	311.93
Cedar Park Shopping Center	Redevelop	2021	731.31	731.31	100%	731.31
Parkwood Oaks	Redevelop	2022	383.92	383.92	100%	383.92
Tapawingo and Kingsley	Redevelop	2024	1,155.17	1,155.17	100%	1,155.17
Subtotal			***2,582.33***	***2,582.33***		***2,582.33***
Shared-Projects with Fairfax County	Retrofit	Appx. D	202,209.08	119,776.07	7.7%	9,222.76
Shared-Projects with Fairfax County	Stream Restoration	Appx. D	14,524,400.79	9,867,367.00	7.7%	759,787.26
Subtotal			***14,726,609.87***	***9,987,143.08***		***769,010.02***
Total			**14,729,192.20**	**9,989,725.41**		**771,592.35**

2.7 Outreach Strategy

The Town's MS4 Program Plan, BMP 1.4 "Sediment and Other Illicit Discharges" serves as the primary vehicle for meeting the MS4 permit requirement to develop an outreach strategy to enhance the public's education on methods to eliminate and reduce the discharge of sediment pollution. The Town originally developed a stand-alone Stormwater Pollution Prevention Public Education and Outreach Plan. This plan was fully integrated into the MS4 Program Plan in 2024. The MS4 Program Plan identifies sediment as a high-priority water quality issue and then outlines target audiences, key messages, and specific outreach strategies.

The Town has adopted standard operating procedures (SOPs) for Town staff that address sediment reduction. These include: Road, Street, Parking Lot, and Sidewalk Maintenance; Outdoor Material Storage; and, Utility Construction. The Northside Property Yard and Nutley Street Maintenance Yard SWPPPs also contain actions to address sediment in general and outdoor material stockpiles specifically. The SOPs and SWPPPs have been incorporated into annual staff training requirements as provided for in the MS4 Program Plan and described in Table 2D (BMP 6.3).

In addition to the Vienna's individual efforts, the Town is an active partner in the Northern Virginia Clean Water Partners program. The program allows the Town to leverage funding with its regional partners to reach target audiences with greater frequency and in more ways than working alone. Reducing pollution from illicit discharges, including sediment, is one of the primary focus areas of the regional effort

The Town will continue to assess whether additional enhancement to education, outreach, and training would be beneficial to reducing sediment loads within the Town.

3. Schedule of Anticipated Actions

Table 3A presents a schedule of anticipated actions planned for implementation during this permit cycle to address the Difficult Run and Accotink Creek TMDLs.

Table 3A – Schedule of Anticipated Actions

Implementation Item	Description	Schedule and Milestones
MS4 Program Plan	The Town will continue to implement the MS4 Program Plan, including elements related to sediment.	See MS4 Program Plan for implementation schedule.
Chesapeake Bay TMDL Action Plan	The Town will continue to implement the Final Phase III Chesapeake Bay TMDL Action Plan, including actions to reduce sediment pollution.	See Chesapeake Bay TMDL Action Plan for implementation schedule. Document additional sediment reductions in MS4 annual reports.
Town Owned Property: Northside Property Yard and Nutley Street Maintenance Yard SWPPPs	The Town will continue to implement the Northside Property Yard and Nutley Street Maintenance Yard SWPPPs and will implement the recommendations of the Northside	Review and update the SWPPP in FY2025 in accordance with the MS4 Program Plan.

Implementation Item	Description	Schedule and Milestones
	Property Yard Stormwater Design Improvements Conceptual Report through the CIP.	Provide updates on CIP improvements in MS4 annual reports.
Town Owned Property Walk-Throughs	The Town will continue to annually assess the condition of Waters and Caffi fields, Meadows Lane Park, and Southside Park and take corrective action, if necessary, to ensure that they are not a source of sediment pollution. Beginning FY2026, Glyndon Park will be added to the annual assessment schedule.	Submit assessment results in MS4 annual reports. Include Glyndon Park in the FY2026 assessment.

4. Anticipated End Date

The MS4 permit requires the Town to submit the anticipated end date by which it will meet the WLAs for sediment. The Difficult Run TMDL establishes a target of reducing sediment loads from all MS4 sources by 3,443,200 lbs/year. Since the WLA is aggregated, the Town has approached this task by comparing actual reductions by both the Town (Town-specific projects) and Fairfax County (shared-credit projects) to the TMDL reduction target. As shown in Table 2F, the total actual reductions to-date for both localities equals 9,931,219.09 lbs/year, or approximately 288% of the total required reduction. As a result, the Town and County have already achieved the Difficult Run TMDL.

Unlike Difficult Run, the TMDL for Accotink Creek establishes a Town-specific sediment reduction target of 1,118,000 lbs/year. While the WLA aggregates the Town and VDOT, VDOT does not own or operate roadways within the Town corporate limits. As shown in Table 2G, the total reduction to-date for the Town (based on shared-projects with Fairfax County) equals 771,592.35 lbs/year, or approximately 69% of the total required reduction. These projects were implemented over a 15-year period. Assuming a similar pace of investment (approximately 50,000 lbs/year) and mix of projects, it will take approximately seven years to achieve the full target reduction. Considering the many variables that affect the pace of implementation, the Town estimates an end date for meeting the Accotink Creek TMDL of between 2035 and 2040. This is consistent with the estimated end date in the previous plan.

5. Opportunity for Public Comment

In accordance with Part II B 9 of the MS4 permit, this plan must be made available for public comment for at least 15 days. The draft plan was put on the Town's stormwater web page with an invitation for the public to provide comment from XXXXX through XXXXX. The opportunity to provide comment was also advertised through the Town's social media outlets. A snapshot of the web page and social media post are provided below. Public comments and the Town's responses are provided below

Appendix A

Cooperative Agreement with Fairfax County and the Town of Herndon

COOPERATIVE AGREEMENT BETWEEN THE FAIRFAX COU7.NTY BOARD OF SUPERVISORS, THE TOWN OF VIENNA, and TOWN OF HERNDON TO SHARE CERTAIN STORMWATER SERVICE DISTRICT FEES AND RESPONSIBILITY FOR RELATED SERVICES

This Agreement ("Agreement") is entered into on this 8TH day of MARCH, 2017, by and between the BOARD OF SUPERVISORS OF FAIRFAX COUNTY, VIRGINIA ("FAIRFAX"), the TOWN COUNCIL OF VIENNA, VIRGINIA ("VIENNA"), and the TOWN COUNCIL OF HERNDON, VIRGINIA ("HERNDON") (referenced collectively as the "Parties" or "the Governing Bodies", and individually as the "Party").

WITNESSETH:

WHEREAS the Towns of Vienna and Herndon (also referenced herein as "the Towns") are located within Fairfax County (also referenced herein as "the County"); and

WHEREAS Fairfax County, the Town of Vienna, and the Town of Herndon each maintain, operate, and improve stormwater systems that affect one another; and

WHEREAS Fairfax County and the Towns are each subject to a Municipal Separate Storm Sewer System ("MS4") permit issued by the Virginia Department of Environmental Quality ("DEQ"); and

WHEREAS FAIRFAX has cooperated with VIENNA and HERNDON to maintain, operate, and improve their respective stormwater systems and wish to continue such cooperation in the future in the best interests of their residents; and

WHEREAS pursuant to Va. Code Ann. § 15.2-2400 (2012), FAIRFAX has established a Stormwater Service District ("Service District"), and is authorized, pursuant to Va. Code Ann. § 15.2403(6) (Supp. 2016) to levy and collect an annual fee upon any property located within such Service District ("the Service District Fee"); and

WHEREAS the Towns of Vienna and Herndon are located within Fairfax County's Service District; and

WHEREAS, pursuant to Va. Code Ann. § 15.2-2403(6), Fairfax County collects revenues from properties located within the Towns of Vienna and Herndon; and

WHEREAS, pursuant to Va. Code Ann. § 15.2-2403.3 (Supp. 2016), by virtue of the Towns' maintenance of separate MS4 permits and their location within the Service District, the Towns are entitled to the Service District Fee revenues collected by Fairfax County within their respective jurisdictions; and

WHEREAS, the actual amount of revenues collected from the Service District Fee will vary from year to year; and

WHEREAS, each MS4 permit, among other things, assigns jurisdiction-specific, pollutant load reduction requirements for nitrogen, phosphorus, and sediment to address the Chesapeake Bay Total Maximum Daily Load (referred to herein as "TMDL"), and requires each MS4-permit jurisdiction to develop a Chesapeake Bay TMDL Action Plan that identifies the practices, means, and methods that are to be implemented by the permittee to achieve the required pollutant reductions; and

WHEREAS, the Commonwealth's Chesapeake Bay TMDL Watershed Implementation Plan (referred to herein as "the WIP") establishes the total pollutant reduction loads required to achieve the Chesapeake Bay TMDL and the timeframe for MS4-permit jurisdictions to achieve their assigned pollutant reductions; and

WHEREAS, each MS4 permit also requires the development of action plans for other pollutants where a TMDL assigns a wasteload allocation ("WLA") to the permittee; and

WHEREAS, pursuant to their respective MS4 permits, the Towns submitted their initial Chesapeake Bay TMDL Action Plans to DEQ prior to the deadline of October 1, 2015 while the County's initial Chesapeake Bay TMDL Action Plan will be submitted to DEQ prior to the deadline of April 1, 2017. Action plans for other TMDLs are submitted in accordance with the schedule contained in each MS4 permit; and

WHEREAS, while each MS4-permit jurisdiction is ultimately responsible for compliance with its MS4 permit, MS4 permits allow and encourage cooperation and coordination among permit holders, and such cooperation and coordination can mutually benefit MS4-permit jurisdictions through more effective and cost-efficient protection of water resources in each jurisdiction; and

WHEREAS, the purpose this Agreement, in part, is for the Parties to work cooperatively to satisfy the pollutant load reduction requirements of their current and future MS4 permits by implementing stormwater management practices within the Parties' jurisdiction that reduce the discharge of pollutants; and

WHEREAS, FAIRFAX, VIENNA, or HERNDON may terminate this Agreement as set forth by the terms herein if, pursuant to applicable law, either locality chooses not to participate under this Agreement or chooses not to share the Stormwater Service District Fees; and

WHEREAS FAIRFAX, VIENNA, and HERNDON have determined and agreed that the best interests of each locality's residents are fulfilled if FAIRFAX utilizes a portion of the Service District Fees collected by FAIRFAX from properties within the Towns to assist the Towns in maintaining, operating, and improving their respective stormwater systems to achieve the goals of effective regional water quality improvement and local initiatives in these localities and to satisfy certain MS4 permit requirements;

NOW, THEREFORE, in consideration of the mutual obligations set forth herein and other good and valuable consideration, so long as FAIRFAX continues to administer the Service District in FAIRFAX that encompasses VIENNA and HERNDON, and so long as VIENNA and HERNDON qualify to receive the Service District Fees collected by FAIRFAX from properties within the Towns, FAIRFAX, VIENNA, and HERNDON agree as follows:

1. FAIRFAX will continue to engage in a coordinated approach with VIENNA, and HERNDON to maintain and operate their respective stormwater systems throughout the incorporated and unincorporated parts of FAIRFAX. Moreover, FAIRFAX, VIENNA, and HERNDON will engage in a coordinated approach for future improvements to their respective stormwater systems.

2. This Agreement's duration shall be for one fiscal year and shall renew at the beginning of each fiscal year thereafter unless terminated pursuant to the terms set forth herein below. For the purposes of this Agreement, "fiscal year" shall mean Fairfax County's fiscal year, which, at the time of the execution of this agreement, ends on June 30.

3. This Agreement's purpose is to set forth how the Parties shall share revenues to be collected pursuant to the Service District Fee, including revenues collected from properties within VIENNA and HERNDON, and the respective obligations of the Parties with respect to the stormwater management services described herein.

STORMWATER FEE REVENUE SHARING

4. FAIRFAX shall collect all revenues to be collected pursuant to the Service District Fee, including revenues collected from properties within the Towns.

5. Revenues actually collected throughout the Service District are referred to herein as "STORMWATER FEE REVENUES."

6. At the end of each fiscal year, FAIRFAX shall calculate separately the total amount of stormwater fee revenues that were actually collected from properties within VIENNA and HERNDON from the amount of stormwater fee revenues collected elsewhere in FAIRFAX (the "VIENNA STORMWATER FEE" and "HERNDON STORMWATER FEE").

7. On or before October 30th of each fiscal year, FAIRFAX shall estimate the anticipated VIENNA STORMWATER FEE and HERNDON STORMWATER FEE for that year, and shall pay to VIENNA and HERNDON an amount equal to twenty-five percent (25%) of the estimated VIENNA STORMWATER FEE and HERNDON STORMWATER FEE, respectively, for that fiscal year, rounded to the nearest penny (the "PAID VIENNA REVENUES" and "PAID HERNDON REVENUES").

8. The Parties acknowledge and agree that PAID VIENNA REVENUES and/or PAID HERNDON REVENUES may be more or less than the amount that is actually due and owing to either or both of the Towns, and which amount is calculated at the end of each fiscal year.

9. If the PAID VIENNA REVENUES for a particular fiscal year are determined to have been less than 25% of the actual VIENNA STORMWATER FEE actually collected for that fiscal year, then FAIRFAX shall pay VIENNA the difference between the PAID VIENNA REVENUES and 25% of the VIENNA STORMWATER FEE actually collected for that fiscal year. FAIRFAX shall pay this difference at the same time as it pays the next fiscal year's PAID VIENNA REVENUES.

10. If the PAID HERNDON REVENUES for a particular fiscal year are determined to have been less than 25% of the actual stormwater fee actually collected for that fiscal year in HERNDON, then FAIRFAX shall pay HERNDON the difference between the PAID

HERNDON REVENUES and 25% of the HERNDON STORMWATER FEE actually collected for that fiscal year in HERNDON. FAIRFAX shall pay this difference at the same time as it pays the next fiscal year's PAID HERNDON REVENUES.

11. If the PAID VIENNA REVENUES for a particular fiscal year are determined to have been more than 25% of the actual VIENNA STORMWATER FEE actually collected for that fiscal year, then FAIRFAX shall deduct the difference between the PAID VIENNA REVENUES and 25% of the VIENNA STORMWATER FEE actually collected for that fiscal year from the amount that FAIRFAX pays for the next fiscal year's PAID VIENNA REVENUES.

12. If the PAID HERNDON REVENUES for a particular fiscal year are determined to have been more than 25% of the actual HERNDON STORMWATER FEE actually collected for that fiscal year, then FAIRFAX shall deduct the difference between the PAID HERNDON REVENUES and 25% of the HERNDON STORMWATER FEE actually collected for that fiscal year from the amount that FAIRFAX pays for the next fiscal year's PAID HERNDON REVENUES.

13. Once FAIRFAX has determined the amount of the actual VIENNA STORMWATER FEE and HERNDON STORMWATER FEE, which shall occur within 90 days of the fiscal year end, FAIRFAX shall forward the respective amounts to the Towns' Mayors in writing ("FINAL ACCOUNTING"). If VIENNA and/or HERNDON disputes the amount of the FINAL ACCOUNTING, then within 30 days of the Mayors' receipt of this FINAL ACCOUNTING, VIENNA and/or HERNDON, shall state the complete factual basis for any such dispute in writing to the Fairfax County Executive, and the Parties shall endeavor in good faith to resolve any such dispute. Upon the resolution of any such dispute, or if VIENNA and/or

HERNDON fails to dispute the amount of the FINAL ACCOUNTING within 30 days of either Mayor's receipt thereof, then VIENNA and/or HERNDON shall be deemed to have accepted payment of the respective fiscal year's PAID VIENNA REVENUES or PAID HERNDON REVENUES, which shall result in the waiver of any right to request from FAIRFAX any additional amount of the collected STORMWATER FEE REVENUES. VIENNA's and/or HERNDON's waiver of any such balance, however, is conditioned upon FAIRFAX's obligations to VIENNA and/or HERNDON pursuant to this Agreement.

14. Pursuant to Va. Code Ann. § 15.2-2403.3 VIENNA and HERNDON shall expend the PAID VIENNA REVENUES and PAID HERNDON REVENUES, respectively, only for costs directly related to the Towns' stormwater systems and not for non-stormwater-system costs, such as public safety, schools, or road maintenance.

15. Under this Agreement, neither VIENNA nor HERNDON is required to expend any of the paid revenues within any specific amount of time. This Agreement does not affect any other authority that VIENNA or HERNDON might have to carry over revenues from year-to-year or to expend revenues in one fiscal year when the revenues were collected in a previous fiscal year.

16. If, at any time in the future, either VIENNA or HERNDON becomes unincorporated or ceases to qualify to receive paid revenues for any reason or terminates its stormwater program or ceases to maintain its stormwater systems, none of the previously paid revenues shall be expended for anything other than the maintenance, operation, and improvement of such Town's stormwater systems. If any such amounts are returned to FAIRFAX they may be used for other qualified uses in the Service District as FAIRFAX, or its designee, in its or his sole discretion, deems appropriate.

TMDL COMPLIANCE AND THE TMDL ADVISORY COMMITTEE

17. Fairfax, Vienna, and Herndon agree that Fairfax will implement stormwater management practices throughout the County and in the Towns sufficient to achieve the TMDL pollutant load reduction requirements that are incorporated into each Party's respective current and future MS4 permit.

18. A TMDL Compliance Advisory Committee (hereinafter referred to as the "Advisory Committee") shall be established and shall be comprised of one or more representatives from each governing body.

19. Regardless of the number of representatives appointed by each governing body, each locality will have one vote on the Advisory Committee.

20. The Advisory Committee shall:

a. establish, pursuant to each Party's respective MS4 permit, the nitrogen, phosphorus, and sediment (referred to as "pollutants of concern" or "POCs") load reductions necessary for each individual Party to achieve full compliance with the Chesapeake Bay TMDL and the WIP (referred to herein as "the Chesapeake Bay TMDL Endpoint").

b. establish the "TOTAL POLLUTANT REDUCTION," which is the total amount of each POC that the Parties must reduce in order to reach the Chesapeake Bay TMDL Endpoint.

c. establish the percentage of the TOTAL POLLUTANT REDUCTION for which each locality is responsible. That percentage assigned to each Party shall hereinafter be referred to, respectively, as the "FAIRFAX PERCENTAGE," "VIENNA PERCENTAGE," and "HERNDON PERCENTAGE."

d. as determined by the Advisory Committee, the FAIRFAX PERCENTAGE, VIENNA PERCENTAGE, and the HERNDON PERCENTAGE may be established for each POC, an average of POCs, or by another mutually agreed upon methodology that will allocate pollutant reduction credits for projects completed under this Agreement as provided for in paragraph 27 below, in a manner necessary to meet the Chesapeake Bay TMDL Endpoint.

e. establish a watershed-specific FAIRFAX PERCENTAGE, VIENNA PERCENTAGE, and HERNDON PERCENTAGE to allocate pollutant reduction credits for projects implemented within a watershed to meet a non-Chesapeake Bay TMDL Endpoint.

21. VIENNA and HERNDON may at any time provide FAIRFAX with a list of stormwater management projects to be considered for implementation. Before submitting any such project, the submitting Town must thoroughly investigate and analyze each project to ensure that any such project is feasible. Any project submitted before June 30 of each year will be considered by FAIRFAX for implementation during the following fiscal year. If a project is not implemented, it will continue to be considered for implementation in subsequent fiscal years until such time that the project is determined to be infeasible. Selection of projects for implementation and determination of final feasibility are at the sole discretion of the Director of the Fairfax County Department of Public Works and Environmental Services ("Director").

22. By April 1 of each year, the Director will send to the Towns of VIENNA and HERNDON and/or their designees a proposed list of projects within their jurisdiction.

23. Within 30 days after each Mayors' receipt of this list, the Towns shall provide comments and suggestions regarding each project, its timing, and its costs for implementation,

lifetime maintenance, and replacement. If the Towns provide any comments or suggestions, the Director shall fully consider any such comments, and may, but shall not be obligated to implement or adhere to them. In the event that a dispute exists regarding implementation of any project on the list sent by the Director, the Director and the disputing Town shall endeavor in good faith to resolve any such dispute, but final authority for the implementation of any such projects rests solely with Fairfax County and the Director.

24. FAIRFAX will pay for the development of the updated Chesapeake Bay TMDL Action Plan for each Town that is due at the beginning of each new MS4 permit cycle. Each Town will be responsible for routine annual updates as required in the MS4 permits. FAIRFAX will also pay for the initial development of other TMDL action plans necessary for compliance with each Town's MS4 permit and any substantial updates to these action plans required in future permit cycles. The action plans will include all information necessary to demonstrate compliance with MS4 permit requirements. Changes or additions to projects identified in the action plans will be reported to each Town annually in accordance with paragraph 31.

25. FAIRFAX shall be solely responsible for implementing projects under this Agreement, excluding the acquisition of any permanent or temporary land rights necessary to construct and maintain a project located within a Town. The Parties may, as necessary, have agreements that are separate from this Agreement that address the Parties' responsibilities over specific projects, facilities, and other funding.

26. A project is subject to this Agreement if it is funded in whole or in part by the Service District Fee and substantially completed on or after July 1, 2009.

27. For each project substantially completed under this Agreement on or after July 1, 2009, whether the project or facility is located within VIENNA, HERNDON, or elsewhere

within Fairfax County, the Parties will receive a pollutant reduction credit for each POC. The reduction credit is determined by applying the VIENNA PERCENTAGE and the HERNDON PERCENTAGE to the estimated total POC load reductions for each project that is substantially completed pursuant to this Agreement (the "VIENNA CREDIT," "HERNDON CREDIT," "FAIRFAX CREDIT," and collectively "REDUCTION CREDITS"). For completed projects and facilities, the REDUCTION CREDITS shall survive any termination of this Agreement unless otherwise agreed to by the Parties or in the event that a constructed facility or improvement is not maintained in accordance with paragraph 28 of this Agreement.

28. The Party in whose jurisdiction any stormwater management facility or improvement is constructed under this Agreement shall ensure that the long-term maintenance of such facility or improvement is performed as necessary to maintain the functionality and performance thereof. Each party shall ensure long-term maintenance in accordance with Va. Code Ann. § 62.1-44.15.15:27(E)(2) and 9 Va. Admin. Code §§ 25-870-58 and 112. In the event that a Party's failure to maintain a project completed under this Agreement results in a decrease in the amount of POCs removed therefrom, as determined by DEQ, then that Party shall, at its sole cost, maintain or improve the facility to restore the facility to its original functionality.

29. In the event that a Party is unable to meet its load reduction requirement for a specific reporting period, and another Party has exceeded its load reduction requirement, the Director may, with written notification to the Parties, transfer credit from shared credit projects among Parties in a manner to ensure that each Party is able to meet its load reduction requirement. Any such transfer shall be temporary and last only as long as it is needed to address the immediate shortfall. Further, no transfer will occur or stay in force that would result in a donating Party being in non-compliance with an MS4 permit condition.

30. Any Party that completes a stormwater management project from funds not generated by or transferred through Fairfax County shall be entitled to claim all resulting load reduction credits for purposes of satisfying its MS4 permit requirements.

31. FAIRFAX will prepare an annual report that details the activities performed under this Agreement. The report will provide sufficient detail so that each locality may use it to meet their respective MS4 permit reporting obligations to DEQ. Fairfax will provide the report annually no later than one month before the date the annual report is due to DEQ.

STAFF TRAINING

32. Without any additional invitation or payment, VIENNA's and/or HERNDON's staff may attend MS4 permit-related training programs that are conducted or hosted by FAIRFAX. FAIRFAX will provide VIENNA and HERNDON with at least one-month's advance notice of such training opportunities.

TERMINATION

33. Any Party may terminate this Agreement by resolution of that Party's governing body. Any such resolution shall be at a public meeting with notice in writing to the non-terminating Parties. Notice shall be made at least three weeks in advance of any such meeting to the Mayor(s) or, as applicable, the County Executive, of Fairfax County. After adoption of any such resolution, the terminating Party shall notify the remaining Parties. The termination shall be effective no earlier than the end of the fiscal year in which the governing body's vote for the resolution for the termination occurs.

34. If this Agreement is terminated by any party other than FAIRFAX, the Agreement shall remain in force as to the remaining parties. The terminating Town shall have responsibility to maintain and replace, as necessary, any facility constructed under this Agreement that is

located within its boundaries and shall assume all liability for such facility. Unless otherwise agreed to by the Parties, neither Town shall have any liability or responsibility for any facility that is located outside of its jurisdictional boundaries and was developed and implemented under this Agreement.

ADDITIONAL PROVISIONS

35. This Agreement is integrated and contains all provisions of the Agreement between the Parties.

36. In the event of a conflict between any term(s) of this Agreement and either of the Parties' MS4 permits or other permit requirements, either Party's respective permit provision(s), shall control.

37. Any provision or term of this Agreement may be modified only by a writing that is approved by resolution at a public meeting of each of the localities' respective governing bodies.

38. This Agreement shall be binding on the Parties' respective agencies, employees, agents, and successors-in-interests.

39. This Agreement shall not be assigned by either of the Parties unless both of the Parties agree to such an assignment in writing.

40. Nothing in this Agreement otherwise limits the respective regulatory and police powers of the Parties.

41. The Parties agree that nothing in this Agreement creates a third-party beneficiary. The Parties also agree that this Agreement does not confer any standing or right to sue or to enforce any provision of this Agreement or any other right or benefit to any person who is not a

party to this Agreement, including but not limited to a citizen, resident, private entity, or local, state, or federal governmental or public body.

42. This Agreement may be executed in two or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one in the same Agreement.

43. This Agreement shall be governed by Virginia law, and any litigation relating to this Agreement shall be brought and/or maintained only in the Circuit Court of Fairfax County, Virginia.

IN WITNESS WHEREOF, the Parties have executed this Agreement, as verified by their signatures below.

[Signatures appear on the following pages.]

TOWN OF VIENNA

By: Laurie A DiRocco
Laurie A. DiRocco
Mayor
Town of Vienna, VA

STATE OF VIRGINIA :
: to-wit
COUNTY OF FAIRFAX :

The foregoing Agreement was acknowledged before me by Laurie A. DiRocco of the Town of VIENNA, this 21st day of February 2017 on behalf of the Town of VIENNA.

MELANIE J. CLARK
NOTARY PUBLIC
REGISTRATION # 7290978
COMMONWEALTH OF VIRGINIA
MY COMMISSION EXPIRES
JUNE 30, 2017

Melanie J Clark
Notary Public

My commission expires: June 30, 2017
Notary Registration Number: 7290978

TOWN OF HERNDON

By:_____
(Name and Title)
Lisa C. Merkel
Mayor

STATE OF VIRGINIA :
: to-wit
COUNTY OF FAIRFAX :

The foregoing Agreement was acknowledged before me by Lisa C. Merkel of the Town of HERNDON, this 2nd day of March 2017 on behalf of the Town of HERNDON.

Cynthia M. Yurewicz
Notary Public

My commission expires: 11/30/2018
Notary Registration Number: 325308

CYNTHIA M. YUREWICZ
NOTARY PUBLIC
REGISTRATION # 325308
COMMONWEALTH OF VIRGINIA
MY COMMISSION EXPIRES
NOVEMBER 30, 2018

APPROVED AS TO FORM:

Lesa J. Yeatts
Town Attorney

BOARD OF SUPERVISORS OF
FAIRFAX COUNTY, VIRGINIA

By: Edward L Long Jr.
Edward L. Long Jr.
County Executive
Fairfax County, Virginia

STATE OF VIRGINIA :
: to-wit
COUNTY OF FAIRFAX :

The foregoing Agreement was acknowledged before me by Edward L. Long Jr., ~~of the~~ County Executive, on behalf of the Board of Supervisors of Fairfax County, Virginia this 9th day of March ~~2016~~. 2017

SUSAN STANNERS ROBINSON
Registration # 7646782
My Commission Expires
March 31, 2019

Susan Stanners Robinson
Notary Public

My commission expires: March 31, 2019

Notary Registration Number: 7642019

Approved as to form: _____
Office of the County Attorney
Fairfax, Virginia

Appendix B

Site Walk-Through Summary

TOWN OF VIENNA
Public Works

TOWN OF VIENNA
Department of Public Works

MEMORANDUM

DATE: June 28, 2024

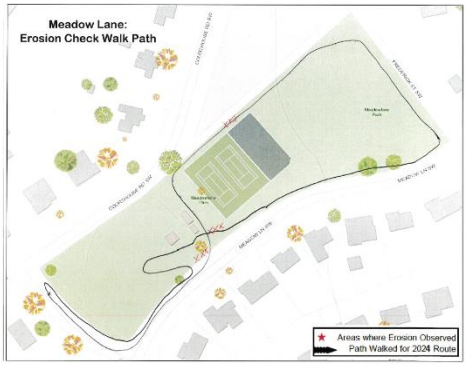
TO: Alan Chen, Water Resource Engineer

FROM: Brandon Kern, Engineering Technician

SUBJECT: Erosion Check – Meadow Lane Park Inspection

I walked the sidewalk from Ware St SW and up Meadow Lane past the tot lot, tennis/pickle ball courts and baseball field. The purpose was to search for areas of concern regarding sediment erosion.

The walk-through yielded these two major areas of concern. Find below map showing the observation path and areas marked showing erosion.



Meadow Lane Park has minor erosion issues due to slope and high traffic. Park property along Meadow Lane SW shows sediment erosion that flows from the baseball fields down past the tennis courts to the tot lot, resulting at park property along Ware Street SW.

The second area of concern is the gulley on the back side of the tennis courts which shows light signs of erosion.

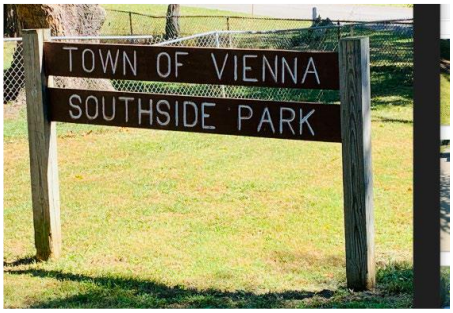
The three photos (below) show the erosion along Meadow Ln. SW.

127 Center Street, South • Vienna, Virginia 22180-5719 p: (703) 255-6380 • f: (703) 255-5722 • TTY711
www.viennava.gov

TOWN OF VIENNA
Public Works

TOWN OF VIENNA
Department of Public Works

MEMORANDUM



DATE: June 28, 2024

TO: Alan Chen, Water Resource Engineer

FROM: Brandon Kern, Engineering Technician

SUBJECT: Erosion Check – Southside Park Fields Inspection

I walked from the main parking area over to the walkways between the park's baseball fields. The purpose was to search for areas of concern regarding sediment erosion. The walk-through yielded three main areas of concern. Find the map below showing the observation path taken.

The first area is backstop bleachers on the south side of the baseball fields where there is sediment washing onto the pavement from the field.

There is some sediment is washing from the grass down the hill on the path on the northside of the park.

The parking lot on the east side of the park has some sediment washing onto the pavement from the grass .

The three photos (below) show the erosion in Southside Park Fields.

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TOWN OF VIENNA
Public Works

TOWN OF VIENNA
Department of Public Works

MEMORANDUM

DATE: June 28, 2024

TO: Alan Chen, Water Resource Engineer

FROM: Brandon Kern, Engineering Technician

SUBJECT: Erosion Check – Water & Caffi Fields Inspection

I walked a path around the Waters-Caffi baseball fields and out-buildings. The purpose was to search for areas of concern regarding sediment erosion. The walk-through yielded two main areas of some concern. Find below the map showing the observation path.

There are two areas of concern. The first area is the parking lot on the north side of the community center where there is sediment washing onto the pavement from the grass.

From Community Center Garden that borders the baseball fields to the left and the Vienna Elementary School recreation area to the right, erosion occurs where sediment washes onto the sidewalk and over into the school recreation areas. This sediment is found all along the path that border the Elementary School.

The three photos (below) show the erosion in Waters & Caffi Fields.

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www.viennava.gov

Appendix C

Town-Specific Sediment Reduction Calculations

Appendix C provides calculations for Town-specific sediment reductions. These are separate from the shared-credit projects with Fairfax County. For any portion of a project that resulted in a direct impervious surface reduction, Table 4 from the MS4 permit was used to determine the equivalent credit for TSS associated with the TP reduction. For the portion of a project that resulted in a reduction as a result of a stormwater management facility, credit was determined using the methodology described in Appendix V.E of DEQ's Chesapeake Bay TMDL Special Condition Guidance (Guidance Memo No 15-2005).

Redevelopment Project	TN Credit	TP Credit	TSS Credit	Year	Accotink	Difficult
Vienna Community Center	12.04	2.15	1,271.28	2018	N	Y
135 Center Street S	0.63	0.18	86.32	2018	N	Y
1008 Electric Ave	48.64	7.52	3,451.19	2018	N	Y
Vienna Town Hall - IA Reduction	0.48	0.07	32.84	2019	N	Y
Vienna Town Hall - BMP Retrofits	2.97	0.37	259.84	2019	N	Y
Wawa - 465 Maple Ave W	-	0.06	-	2020	Y	N
Flagship - 540 Maple Ave W	2.55	0.63	311.93	2020	Y	N
Holy Comforter - 543 Beulah Rd NE	1.02	0.15	71.89	2020	N	Y
200 Maple Avenue E	0.33	0.09	45.03	2021	N	Y
Cedar Park Shopping Center - 260 Cedar Lane	9.46	1.27	731.31	2021	Y	N
Malcolm Subdivision - 424-440 Malcolm Road	1.62	0.26	183.07	2021	N	Y
CubeSmart - 223 Mill Street NE	4.81	0.92	527.57	2022	N	Y
Parkwood Oaks - Marshall and Ware	4.52	0.64	383.92	2022	Y	N
Westwood Country Club - Clubhouse, Tennis,	9.83	1.64	1,476.19	2022	N	Y
Tapawingo and Kingsley Road Improvements	13.74	1.73	1,155.17	2024	Y	N

Vienna Community Center		
Information	**Input**	**As Developed**
Date Completed	2018	
Rainfall		
Site Area (SF)	211701.6	
Site Area (AC)		4.86
Watershed I %		
Pre-I Area (SF)	121968	
Pre-I Area (AC)		2.80
Pre-I Area (%)		
Pre C Value		
Pre-TP Load (VRRM)		**7.86**
Post-I Area (SF)	163350	
Post-I Area (AC)		3.75
Post-I Area (%)		
Post C Value		
Post-TP Load (VRRM)		**9.38**
Increase/Decrease		1.52
Stormwater Controls		
BMP 1	StormTech(2)	
Efficiency	0.411	
I Area (AC)	1.83	
TP Removed		1.88
BMP 2	Permeable Pavers	
Efficiency	0.59	
I Area (AC)	1.21	
TP Removed		1.79
BMP 3	NA	
Efficiency	0	
I Area (AC)	0	
TP Removed		0.00
Total BMP TP Removed		**3.67**
Net Change in TP		**(2.15)**

Creditable Reductions for TN and TSS Per Guidance Appendix V.E			
TP Decrease for Impervious Reduction			-
TP Decrease for BMPs (Proportion of BMP Applied to TMDL Reduction)			
	0.59		(2.15)
Total Creditable TP Decrease			**(2.15)**
Total Associated TN Load	6.9		64.72
TN Decrease from Impervious Reduction			-
TN Decrease for BMPs	Efficiency	Proportion IA Treated by BMP	
BMP 1	0.261	0.488	(8.24)
BMP 2	0.59	0.322666667	(12.32)
BMP 3	0	0	-
TN Decrease for BMPs (Decrease * Prop. Applied to TMDL)			-12.04063158
Total Creditable TN Decrease (Imp. Reduction + BMPs)			**(12.04)**
Total Associated TSS Load	469.2		4,401.10
TSS Decrease from Impervious Reduction			-
TSS Decrease for BMPs	Efficiency	Proportion IA Treated by BMP	
BMP 1	0.523	0.488	(1,123.27)
BMP 2	0.738	0.322666667	(1,048.02)
BMP 3	0	0	-
TSS Decrease for BMPs (Decrease * Prop. Applied to TMDL)			(1,271.28)
Total Creditable TSS Decrease (Imp. Reduction + BMPs)			**(1,271.28)**

BMP Efficiency Methodology Description:

Pre-TP Load and Post-TP Load taken from Virginia Runoff Reduction Method Redevelopment Worksheet revised 3/16/2015. Methodology confirmed by email from Kelsey Brooks at DEQ received 5/18/2016. StormTech: TP, TN, and TSS efficiencies calculated using Chesapeake Bay Program Retrofit Equations based on Runoff Depth Treated of 0.5 per email from Kelsey Brooks received 8/7/2015. Permeable Pavers: TP and TN efficiency taken from Virginia BMP Clearinghouse for Permeable Pavement Design #1; TSS efficiency calculated using Chesapeake Bay Program Retrofit Equations based on Runoff Storage of 0.09579904 AF, 1.21 AC IA, and Runoff Treatment Depth of 0.95.

135 Center Street S		
Information	**Input**	**As Developed**
Date Completed	2018	
Rainfall		
Site Area (SF)	44866.8	
Site Area (AC)		1.03
Watershed I %		
Pre-I Area (SF)	16117.2	
Pre-I Area (AC)		0.37
Pre-I Area (%)		
Pre C Value		
Pre-TP Load (VRRM)		**1.06**
Post-I Area (SF)	29620.8	
Post-I Area (AC)		0.68
Post-I Area (%)		
Post C Value		
Post-TP Load (VRRM)		**1.67**
Increase/Decrease		0.61
Stormwater Controls		
BMP 1	Manufactured Treatment Device - Filtering	
Efficiency	0.5	
I Area (AC)	0.64	
TP Removed		0.79
BMP 2	NA	
Efficiency	0	
I Area (AC)	0	
TP Removed		0.00
BMP 3	NA	
Efficiency	0	
I Area (AC)	0	
TP Removed		0.00
Total BMP TP Removed		**0.79**
Net Change in TP		**(0.18)**

Creditable Reductions for TN and TSS Per Guidance Appendix V.E			
TP Decrease for Impervious Reduction			-
TP Decrease for BMPs (Proportion of BMP Applied to TMDL Reduction)			
	0.22		(0.18)
Total Creditable TP Decrease			**(0.18)**
Total Associated TN Load	6.9		11.52
TN Decrease from Impervious Reduction			-
TN Decrease for BMPs	Efficiency	Proportion IA Treated by BMP	
BMP 1	0.261	0.941176471	(2.83)
BMP 2	0	0	-
BMP 3	0	0	-
TN Decrease for BMPs (Decrease * Prop. Applied to TMDL)			-0.633493059
Total Creditable TN Decrease (Imp. Reduction + BMPs)			**(0.63)**
Total Associated TSS Load	469.2		783.56
TSS Decrease from Impervious Reduction			-
TSS Decrease for BMPs	Efficiency	Proportion IA Treated by BMP	
BMP 1	0.523	0.941176471	(385.70)
BMP 2	0	0	-
BMP 3	0	0	-
TSS Decrease for BMPs (Decrease * Prop. Applied to TMDL)			(86.32)
Total Creditable TSS Decrease (Imp. Reduction + BMPs)			**(86.32)**

BMP Efficiency Methodology Description:

Pre-TP Load and Post-TP Load taken from Virginia Runoff Reduction Method Redevelopment Worksheet revised 3/16/2015. Methodology confirmed by email from Kelsey Brooks at DEQ received 5/18/2016. "Listed" Pre-Redevelopment TP Load used per email from Jaime Bauer recevied 9/27/2016. Manufactured Treatment Device: TP from Virginia BMP Clearninghouse and site calculation spreadsheet; TN and TSS efficiencies calculated using Chesapeake Bay Program Retrofit Equations based on Runoff Depth Treated of 0.5 per email from Kelsey Brooks received 8/7/2015.

1008 Electric Avenue		
Information	**Input**	**As Developed**
Date Completed	2018	
Rainfall		
Site Area (SF)	473061.6	
Site Area (AC)		10.86
Watershed I %		
Pre-I Area (SF)	346737.6	
Pre-I Area (AC)		7.96
Pre-I Area (%)		
Pre C Value		
Pre-TP Load (VRRM)		**18.85**
Post-I Area (SF)	266151.6	
Post-I Area (AC)		6.11
Post-I Area (%)		
Post C Value		
Post-TP Load (VRRM)		**13.24**
Increase/Decrease		(5.61)
Stormwater Controls		
BMP 1	Bioretention #2 (Spec #9)	
Efficiency	0.9	
I Area (AC)	0.19	
TP Removed		0.37
BMP 2	Dry Swale #2 (Spec #10)	
Efficiency	0.76	
I Area (AC)	0.49	
TP Removed		0.81
BMP 3	Manufactured TD - Jellyfish	
Efficiency	0.5	
I Area (AC)	0.68	
TP Removed		0.74
Total BMP TP Removed		**1.91**
Net Change in TP		**(7.52)**

Creditable Reductions for TN and TSS Per Guidance Appendix V.E			
TP Decrease for Impervious Reduction			(5.61)
TP Decrease for BMPs (Proportion of BMP Applied to TMDL Reduction)			
	1.00		(1.91)
Total Creditable TP Decrease			**(7.52)**
Total Associated TN Load	6.9		91.36
TN Decrease from Impervious Reduction			(38.71)
TN Decrease for BMPs	Efficiency	Proportion IA Treated by BMP	
BMP 1	0.9	0.031096563	(2.56)
BMP 2	0.74	0.080196399	(5.42)
BMP 3	0.261	0.081833061	(1.95)
TN Decrease for BMPs (Decrease * Prop. Applied to TMDL)			-9.929544943
Total Creditable TN Decrease (Imp. Reduction + BMPs)			**(48.64)**
Total Associated TSS Load	469.2		6,212.21
TSS Decrease from Impervious Reduction			(2,632.21)
TSS Decrease for BMPs	Efficiency	Proportion IA Treated by BMP	
BMP 1	0.8	0.031096563	(154.54)
BMP 2	0.8	0.080196399	(398.56)
BMP 3	0.523	0.081833061	(265.87)
TSS Decrease for BMPs (Decrease * Prop. Applied to TMDL)			(818.97)
Total Creditable TSS Decrease (Imp. Reduction + BMPs)			**(3,451.19)**

BMP Efficiency Methodology Description:

Pre-TP Load and Post-TP Load taken from Virginia Runoff Reduction Method Redevelopment Worksheet revised 3/16/2015. Methodology confirmed by email from Kelsey Brooks at DEQ received 5/18/2016. "Listed" Pre-Redevelopment TP Load used per email from Jaime Bauer recevied 9/27/2016. Bioretention and Dry Swale TP and TN efficiencies from Virginia BMP Clearninghouse; TSS efficiencies from Bay Program Established Efficiencies. Manufactured Treatment Device: TP from Virginia BMP Clearninghouse and site calculation spreadsheet; TN and TSS efficiencies calculated using Chesapeake Bay Program Retrofit Equations based on Runoff Depth Treated of 0.5 per email from Kelsey Brooks received 8/7/2015.

Vienna Town Hall - IA Reduction		
Information	**Input**	**As Developed**
Date Completed	2019	
Rainfall		
Site Area (SF)	3920.4	
Site Area (AC)		0.09
Watershed I %		
Pre-I Area (SF)	2613.6	
Pre-I Area (AC)		0.06
Pre-I Area (%)		
Pre C Value		
Pre-TP Load (VRRM)		**0.15**
Post-I Area (SF)	871.2	
Post-I Area (AC)		0.02
Post-I Area (%)		
Post C Value		
Post-TP Load (VRRM)		**0.08**
Increase/Decrease		(0.07)
Stormwater Controls		
BMP 1		
Efficiency	0	
I Area (AC)	0	
TP Removed		0.00
BMP 2		
Efficiency	0	
I Area (AC)	0	
TP Removed		0.00
BMP 3		
Efficiency	0	
I Area (AC)	0	
TP Removed		0.00
Total BMP TP Removed		**0.00**
Net Change in TP		**(0.07)**

Creditable Reductions for TN and TSS Per Guidance Appendix V.E			
TP Decrease for Impervious Reduction			(0.07)
TP Decrease for BMPs (Proportion of BMP Applied to TMDL Reduction)			
	0.00		0.00
Total Creditable TP Decrease			**(0.07)**
Total Associated TN Load	6.9		0.55
TN Decrease from Impervious Reduction			(0.48)
TN Decrease for BMPs	Efficiency	Proportion IA Treated by BMP	
BMP 1	0	0	-
BMP 2	0	0	-
BMP 3	0	0	-
TN Decrease for BMPs (Decrease * Prop. Applied to TMDL)			0
Total Creditable TN Decrease (Imp. Reduction + BMPs)			**(0.48)**
Total Associated TSS Load	469.2		37.54
TSS Decrease from Impervious Reduction			(32.84)
TSS Decrease for BMPs	Efficiency	Proportion IA Treated by BMP	
BMP 1	0	0	-
BMP 2	0	0	-
BMP 3	0	0	-
TSS Decrease for BMPs (Decrease * Prop. Applied to TMDL)			-
Total Creditable TSS Decrease (Imp. Reduction + BMPs)			**(32.84)**

BMP Efficiency Methodology Description:
This worksheet reflects impervious area reductions at the Town Hall, which were calculated separatedly from BMP reductions. Pre-TP Load and Post-TP Load taken from Virginia Runoff Reduction Method Redevelopment Worksheet revised 3/16/2015. Methodology confirmed by email from Kelsey Brooks at DEQ received 5/18/2016.

Vienna Town Hall - BMPs		
Information	**Input**	**As Developed**
Date Completed	2019	
Rainfall		
Site Area (SF)	20473.2	
Site Area (AC)		0.47
Watershed I %		
Pre-I Area (SF)	12632.4	
Pre-I Area (AC)		0.29
Pre-I Area (%)		
Pre C Value		
Pre-TP Load (VRRM)		**0.73**
Post-I Area (SF)	12632.4	
Post-I Area (AC)		0.29
Post-I Area (%)		
Post C Value		
Post-TP Load (VRRM)		**0.73**
Increase/Decrease		-
Stormwater Controls		
BMP 1	Bioretention #1	
Efficiency	0.55	
I Area (AC)	0.25	
TP Removed		0.35
BMP 2	Grass Channel	
Efficiency	0.23	
I Area (AC)	0.04	
TP Removed		0.02
BMP 3		
Efficiency	0	
I Area (AC)	0	
TP Removed		0.00
Total BMP TP Removed		**0.37**
Net Change in TP		**(0.37)**

Creditable Reductions for TN and TSS Per Guidance Appendix V.E			
TP Decrease for Impervious Reduction			-
TP Decrease for BMPs (Proportion of BMP Applied to TMDL Reduction)			
	1.00		(0.37)
Total Creditable TP Decrease			**(0.37)**
Total Associated TN Load	6.9		5.04
TN Decrease from Impervious Reduction			-
TN Decrease for BMPs	Efficiency	Proportion IA Treated by BMP	
BMP 1	0.64	0.862068966	(2.78)
BMP 2	0.28	0.137931034	(0.19)
BMP 3	0	0	-
TN Decrease for BMPs (Decrease * Prop. Applied to TMDL)			-2.973566897
Total Creditable TN Decrease (Imp. Reduction + BMPs)			**(2.97)**
Total Associated TSS Load	469.2		342.52
TSS Decrease from Impervious Reduction			-
TSS Decrease for BMPs	Efficiency	Proportion IA Treated by BMP	
BMP 1	0.8	0.862068966	(236.22)
BMP 2	0.5	0.137931034	(23.62)
BMP 3	0	0	-
TSS Decrease for BMPs (Decrease * Prop. Applied to TMDL)			(259.84)
Total Creditable TSS Decrease (Imp. Reduction + BMPs)			**(259.84)**

BMP Efficiency Methodology Description:

Pre-TP Load and Post-TP Load taken from Virginia Runoff Reduction Method Redevelopment Worksheet revised 3/16/2015. Methodology confirmed by email from Kelsey Brooks at DEQ received 5/18/2016. TP and TN efficiencies from Virginia BMP Clearinghouse for Bioretention #1 and Grass Channel. TSS efficiency from Chesapeake Bay Program Established Efficiencies. Note that Grass Channel pre-treatment to Bioretention is not included in the calculation.

Holy Comforter - 543 Beulah Rd NE		
Information	**Input**	**As Developed**
Date Completed	2020	
Rainfall		
Site Area (SF)	19602	
Site Area (AC)		0.45
Watershed I %		
Pre-I Area (SF)	2178	
Pre-I Area (AC)		0.05
Pre-I Area (%)		
Pre C Value		
Pre-TP Load (VRRM)		**0.34**
Post-I Area (SF)	6534	
Post-I Area (AC)		0.15
Post-I Area (%)		
Post C Value		
Post-TP Load (VRRM)		**0.50**
Increase/Decrease		0.16
Stormwater Controls		
BMP 1	Infiltration Trench (L2)	
Efficiency	0.93	
I Area (AC)	0.1	
TP Removed		0.31
BMP 2		
Efficiency	0	
I Area (AC)	0	
TP Removed		0.00
BMP 3		
Efficiency	0	
I Area (AC)	0	
TP Removed		0.00
Total BMP TP Removed		**0.31**
Net Change in TP		**(0.15)**

Creditable Reductions for TN and TSS Per Guidance Appendix V.E			
TP Decrease for Impervious Reduction			-
TP Decrease for BMPs (Proportion of BMP Applied to TMDL Reduction)			
	0.48		(0.15)
Total Creditable TP Decrease			**(0.15)**
Total Associated TN Load	6.9		3.45
TN Decrease from Impervious Reduction			-
TN Decrease for BMPs	Efficiency	Proportion IA Treated by BMP	
BMP 1	0.92	0.666666667	(2.12)
BMP 2	0	0	-
BMP 3	0	0	-
TN Decrease for BMPs (Decrease * Prop. Applied to TMDL)			-1.023870968
Total Creditable TN Decrease (Imp. Reduction + BMPs)			**(1.02)**
Total Associated TSS Load	469.2		234.60
TSS Decrease from Impervious Reduction			-
TSS Decrease for BMPs	Efficiency	Proportion IA Treated by BMP	
BMP 1	0.95	0.666666667	(148.58)
BMP 2	0	0	-
BMP 3	0	0	-
TSS Decrease for BMPs (Decrease * Prop. Applied to TMDL)			(71.89)
Total Creditable TSS Decrease (Imp. Reduction + BMPs)			**(71.89)**

BMP Efficiency Methodology Description:
Pre-TP Load and Post-TP Load taken from Virginia Runoff Reduction Method Redevelopment Worksheet. Methodology confirmed by email from Kelsey Brooks at DEQ received 5/18/2016. Infiltration Trench (L2): TP and TN efficiencies from Virginia BMP Clearinghouse. TSS efficiency from Chesapeake Bay Program Established Efficiencies.

Flagship - 540 Maple Ave W		
Information	**Input**	**As Developed**
Date Completed	2020	
Rainfall		
Site Area (SF)	54014.4	
Site Area (AC)		1.24
Watershed I %		
Pre-I Area (SF)	42253.2	
Pre-I Area (AC)		0.97
Pre-I Area (%)		
Pre C Value		
Pre-TP Load (VRRM)		**2.26**
Post-I Area (SF)	48787.2	
Post-I Area (AC)		1.12
Post-I Area (%)		
Post C Value		
Post-TP Load (VRRM)		**2.50**
Increase/Decrease		0.24
Stormwater Controls		
BMP 1	Jellyfish Filter	
Efficiency	0.5	
I Area (AC)	0.67	
TP Removed		0.75
BMP 2	Level 1 Green Roof	
Efficiency	0.45	
I Area (AC)	0.12	
TP Removed		0.12
BMP 3		
Efficiency	0	
I Area (AC)	0	
TP Removed		0.00
Total BMP TP Removed		**0.87**
Net Change in TP		**(0.63)**

Creditable Reductions for TN and TSS Per Guidance Appendix V.E			
TP Decrease for Impervious Reduction			-
TP Decrease for BMPs (Proportion of BMP Applied to TMDL Reduction)			
	0.72		(0.63)
Total Creditable TP Decrease			**(0.63)**
Total Associated TN Load	6.9		17.25
TN Decrease from Impervious Reduction			-
TN Decrease for BMPs	Efficiency	Proportion IA Treated by BMP	
BMP 1	0.261	0.598214286	(2.69)
BMP 2	0.45	0.107142857	(0.83)
BMP 3	0	0	-
TN Decrease for BMPs (Decrease * Prop. Applied to TMDL)			-2.550691221
Total Creditable TN Decrease (Imp. Reduction + BMPs)			**(2.55)**
Total Associated TSS Load	469.2		1,173.00
TSS Decrease from Impervious Reduction			-
TSS Decrease for BMPs	Efficiency	Proportion IA Treated by BMP	
BMP 1	0.523	0.598214286	(366.99)
BMP 2	0.51	0.107142857	(64.10)
BMP 3	0	0	-
TSS Decrease for BMPs (Decrease * Prop. Applied to TMDL)			(311.93)
Total Creditable TSS Decrease (Imp. Reduction + BMPs)			**(311.93)**

BMP Efficiency Methodology Description:
Pre-TP Load and Post-TP Load taken from Virginia Runoff Reduction Method Redevelopment Worksheet. Methodology confirmed by email from Kelsey Brooks at DEQ received 5/18/2016. Green Roof (Level 1): TP and TN efficiencies from Virginia BMP Clearinghouse. TSS efficiency calculated using Chesapeake Bay Program Retrofit Equations based on Runoff Depth Treated of 0.43 inch. Manufactured Treatment Device (Jellyfish): TP from Virginia BMP Clearninghouse and site calculation spreadsheet; TN and TSS efficiencies calculated using Chesapeake Bay Program Retrofit Equations based on Runoff Depth Treated of 0.5 per email from Kelsey Brooks received 8/7/2015.

200 Maple Avenue E		
Information	**Input**	**As Developed**
Date Completed	2021	
Rainfall		
Site Area (SF)	21344.4	
Site Area (AC)		0.49
Watershed I %		
Pre-I Area (SF)	16117.2	
Pre-I Area (AC)		0.37
Pre-I Area (%)		
Pre C Value		
Pre-TP Load (VRRM)		**0.87**
Post-I Area (SF)	18730.8	
Post-I Area (AC)		0.43
Post-I Area (%)		
Post C Value		
Post-TP Load (VRRM)		**0.97**
Increase/Decrease		0.10
Stormwater Controls		
BMP 1	Contech MTD - Filtering	
Efficiency	0.5	
I Area (AC)	0.17	
TP Removed		0.19
BMP 2		
Efficiency	0	
I Area (AC)	0	
TP Removed		0.00
BMP 3		
Efficiency	0	
I Area (AC)	0	
TP Removed		0.00
Total BMP TP Removed		**0.19**
Net Change in TP		**(0.09)**

Creditable Reductions for TN and TSS Per Guidance Appendix V.E			
TP Decrease for Impervious Reduction			-
TP Decrease for BMPs (Proportion of BMP Applied to TMDL Reduction)			
	0.48		(0.09)
Total Creditable TP Decrease			**(0.09)**
Total Associated TN Load	6.9		6.69
TN Decrease from Impervious Reduction			-
TN Decrease for BMPs	Efficiency	Proportion IA Treated by BMP	
BMP 1	0.261	0.395348837	(0.69)
BMP 2	0	0	-
BMP 3	0	0	-
TN Decrease for BMPs (Decrease * Prop. Applied to TMDL)			-0.330444209
Total Creditable TN Decrease (Imp. Reduction + BMPs)			**(0.33)**
Total Associated TSS Load	469.2		455.12
TSS Decrease from Impervious Reduction			-
TSS Decrease for BMPs	Efficiency	Proportion IA Treated by BMP	
BMP 1	0.523	0.395348837	(94.10)
BMP 2	0	0	-
BMP 3	0	0	-
TSS Decrease for BMPs (Decrease * Prop. Applied to TMDL)			(45.03)
Total Creditable TSS Decrease (Imp. Reduction + BMPs)			**(45.03)**

BMP Efficiency Methodology Description:
Pre-TP Load and Post-TP Load taken from Virginia Runoff Reduction Method Redevelopment Worksheet. Methodology confirmed by email from Kelsey Brooks at DEQ received 5/18/2016. Manufactured Treatment Device (Contech): TP from Virginia BMP Clearninghouse and site calculation spreadsheet; TN and TSS efficiencies calculated using Chesapeake Bay Program Retrofit Equations based on Runoff Depth Treated of 0.5 per email from Kelsey Brooks received 8/7/2015.

Cedar Park Shopping Center - 260 Cedar Lane		
Information	**Input**	**As Developed**
Date Completed	2021	
Rainfall		
Site Area (SF)	94089.6	
Site Area (AC)		2.16
Watershed I %		
Pre-I Area (SF)	91911.6	
Pre-I Area (AC)		2.11
Pre-I Area (%)		
Pre C Value		
Pre-TP Load (VRRM)		**4.60**
Post-I Area (SF)	75358.8	
Post-I Area (AC)		1.73
Post-I Area (%)		
Post C Value		
Post-TP Load (VRRM)		**3.98**
Increase/Decrease		(0.62)
Stormwater Controls		
BMP 1	Level 1 Bioretention	
Efficiency	0.55	
I Area (AC)	0.51	
TP Removed		0.65
BMP 2		
Efficiency	0	
I Area (AC)	0	
TP Removed		0.00
BMP 3		
Efficiency	0	
I Area (AC)	0	
TP Removed		0.00
Total BMP TP Removed		**0.65**
Net Change in TP		**(1.27)**

Creditable Reductions for TN and TSS Per Guidance Appendix V.E			
TP Decrease for Impervious Reduction			(0.62)
TP Decrease for BMPs (Proportion of BMP Applied to TMDL Reduction)			
	1.00		(0.65)
Total Creditable TP Decrease			**(1.27)**
Total Associated TN Load	6.9		27.46
TN Decrease from Impervious Reduction			(4.28)
TN Decrease for BMPs	Efficiency	Proportion IA Treated by BMP	
BMP 1	0.64	0.294797688	(5.18)
BMP 2	0	0	-
BMP 3	0	0	-
TN Decrease for BMPs (Decrease * Prop. Applied to TMDL)			-5.181269827
Total Creditable TN Decrease (Imp. Reduction + BMPs)			**(9.46)**
Total Associated TSS Load	469.2		1,867.42
TSS Decrease from Impervious Reduction			(290.90)
TSS Decrease for BMPs	Efficiency	Proportion IA Treated by BMP	
BMP 1	0.8	0.294797688	(440.41)
BMP 2	0	0	-
BMP 3	0	0	-
TSS Decrease for BMPs (Decrease * Prop. Applied to TMDL)			(440.41)
Total Creditable TSS Decrease (Imp. Reduction + BMPs)			**(731.31)**

BMP Efficiency Methodology Description:
Pre-TP Load and Post-TP Load taken from Virginia Runoff Reduction Method Redevelopment Worksheet. Methodology confirmed by email from Kelsey Brooks at DEQ received 5/18/2016. TP and TN efficiencies from Virginia BMP Clearinghouse for Bioretention #1. TSS efficiency from Chesapeake Bay Program Established Efficiencies.

Malcolm Subdivision - 424-440 Malcolm Road		
Information	**Input**	**As Developed**
Date Completed	2021	
Rainfall		
Site Area (SF)	59241.6	
Site Area (AC)		1.36
Watershed I %		
Pre-I Area (SF)	3484.8	
Pre-I Area (AC)		0.08
Pre-I Area (%)		
Pre C Value		
Pre-TP Load (VRRM)		**0.90**
Post-I Area (SF)	15681.6	
Post-I Area (AC)		0.36
Post-I Area (%)		
Post C Value		
Post-TP Load (VRRM)		**1.35**
Increase/Decrease		0.45
Stormwater Controls		
BMP 1	Inflitration #1	
Efficiency	0.63	
I Area (AC)	0.3	
TP Removed		0.71
BMP 2		
Efficiency	0	
I Area (AC)	0	
TP Removed		0.00
BMP 3		
Efficiency	0	
I Area (AC)	0	
TP Removed		0.00
Total BMP TP Removed		**0.71**
Net Change in TP		**(0.26)**

Creditable Reductions for TN and TSS Per Guidance Appendix V.E			
TP Decrease for Impervious Reduction			-
TP Decrease for BMPs (Proportion of BMP Applied to TMDL Reduction)			
	0.37		(0.26)
Total Creditable TP Decrease			**(0.26)**
Total Associated TN Load	6.9		9.32
TN Decrease from Impervious Reduction			-
TN Decrease for BMPs	Efficiency	Proportion IA Treated by BMP	
BMP 1	0.57	0.833333333	(4.42)
BMP 2	0	0	-
BMP 3	0	0	-
TN Decrease for BMPs (Decrease * Prop. Applied to TMDL)			-1.615339286
Total Creditable TN Decrease (Imp. Reduction + BMPs)			**(1.62)**
Total Associated TSS Load	469.2		633.42
TSS Decrease from Impervious Reduction			-
TSS Decrease for BMPs	Efficiency	Proportion IA Treated by BMP	
BMP 1	0.95	0.833333333	(501.46)
BMP 2	0	0	-
BMP 3	0	0	-
TSS Decrease for BMPs (Decrease * Prop. Applied to TMDL)			(183.07)
Total Creditable TSS Decrease (Imp. Reduction + BMPs)			**(183.07)**

BMP Efficiency Methodology Description:
Pre-TP Load and Post-TP Load taken from Virginia Runoff Reduction Method Redevelopment Worksheet. Methodology confirmed by email from Kelsey Brooks at DEQ received 5/18/2016. TP and TN efficiencies from Virginia BMP Clearinghouse for Infiltration #1. TSS efficiency from Chesapeake Bay Program Established Efficiencies.

CubeSmart - 223 Mill Street NE		
Information	**Input**	**As Developed**
Date Completed	2022	
Rainfall		
Site Area (SF)	74487.6	
Site Area (AC)		1.71
Watershed I %		
Pre-I Area (SF)	70567.2	
Pre-I Area (AC)		1.62
Pre-I Area (%)		
Pre C Value		
Pre-TP Load (VRRM)		**3.56**
Post-I Area (SF)	63162	
Post-I Area (AC)		1.45
Post-I Area (%)		
Post C Value		
Post-TP Load (VRRM)		**3.29**
Increase/Decrease		(0.27)
Stormwater Controls		
BMP 1	Isolator Row MTD	
Efficiency	0.4	
I Area (AC)	0.72	
TP Removed		0.65
BMP 2		
Efficiency	0	
I Area (AC)	0	
TP Removed		0.00
BMP 3		
Efficiency	0	
I Area (AC)	0	
TP Removed		0.00
Total BMP TP Removed		**0.65**
Net Change in TP		**(0.92)**

Creditable Reductions for TN and TSS Per Guidance Appendix V.E			
TP Decrease for Impervious Reduction			(0.27)
TP Decrease for BMPs (Proportion of BMP Applied to TMDL Reduction)			
	1.00		(0.65)
Total Creditable TP Decrease			**(0.92)**
Total Associated TN Load	6.9		22.70
TN Decrease from Impervious Reduction			(1.86)
TN Decrease for BMPs	Efficiency	Proportion IA Treated by BMP	
BMP 1	0.261	0.496551724	(2.94)
BMP 2	0	0	-
BMP 3	0	0	-
TN Decrease for BMPs (Decrease * Prop. Applied to TMDL)			-2.9420496
Total Creditable TN Decrease (Imp. Reduction + BMPs)			**(4.81)**
Total Associated TSS Load	469.2		1,543.67
TSS Decrease from Impervious Reduction			(126.68)
TSS Decrease for BMPs	Efficiency	Proportion IA Treated by BMP	
BMP 1	0.523	0.496551724	(400.89)
BMP 2	0	0	-
BMP 3	0	0	-
TSS Decrease for BMPs (Decrease * Prop. Applied to TMDL)			(400.89)
Total Creditable TSS Decrease (Imp. Reduction + BMPs)			**(527.57)**

BMP Efficiency Methodology Description:

Pre-TP Load and Post-TP Load taken from Virginia Runoff Reduction Method Redevelopment Worksheet. Methodology confirmed by email from Kelsey Brooks at DEQ received 5/18/2016. TP efficiency from Virginia BMP Clearinghouse for Isolator Row. TN and TSS efficiencies calculated using Chesapeake Bay Program Retrofit Equations based on Runoff Depth Treated of 0.5 per email from Kelsey Brooks received 8/7/2015.

Parkwood Oaks - Marshall and Ware		
Information	**Input**	**As Developed**
Date Completed	2022	
Rainfall		
Site Area (SF)	127630.8	
Site Area (AC)		2.93
Watershed I %		
Pre-I Area (SF)	10018.8	
Pre-I Area (AC)		0.23
Pre-I Area (%)		
Pre C Value		
Pre-TP Load (VRRM)		**1.72**
Post-I Area (SF)	22215.6	
Post-I Area (AC)		0.51
Post-I Area (%)		
Post C Value		
Post-TP Load (VRRM)		**2.48**
Increase/Decrease		0.76
Stormwater Controls		
BMP 1	Bioretention #1	
Efficiency	0.55	
I Area (AC)	0.46	
TP Removed		1.23
BMP 2	Purchased Credit	
Efficiency	0	
I Area (AC)	0	
TP Removed		0.17
BMP 3		
Efficiency	0	
I Area (AC)	0	
TP Removed		0.00
Total BMP TP Removed		**1.40**
Net Change in TP		**(0.64)**

Creditable Reductions for TN and TSS Per Guidance Appendix V.E			
TP Decrease for Impervious Reduction			-
TP Decrease for BMPs (Proportion of BMP Applied to TMDL Reduction)			
	0.46		(0.64)
Total Creditable TP Decrease			**(0.64)**
Total Associated TN Load	6.9		17.11
TN Decrease from Impervious Reduction			-
TN Decrease for BMPs	Efficiency	Proportion IA Treated by BMP	
BMP 1	0.64	0.901960784	(9.88)
BMP 2	0	0	-
BMP 3	0	0	-
TN Decrease for BMPs (Decrease * Prop. Applied to TMDL)			-4.516701921
Total Creditable TN Decrease (Imp. Reduction + BMPs)			**(4.52)**
Total Associated TSS Load	469.2		1,163.62
TSS Decrease from Impervious Reduction			-
TSS Decrease for BMPs	Efficiency	Proportion IA Treated by BMP	
BMP 1	0.8	0.901960784	(839.63)
BMP 2	0	0	-
BMP 3	0	0	-
TSS Decrease for BMPs (Decrease * Prop. Applied to TMDL)			(383.92)
Total Creditable TSS Decrease (Imp. Reduction + BMPs)			**(383.92)**

BMP Efficiency Methodology Description:
Pre-TP Load and Post-TP Load taken from Virginia Runoff Reduction Method Redevelopment Worksheet. Methodology confirmed by email from Kelsey Brooks at DEQ received 5/18/2016. TP and TN efficiencies from Virginia BMP Clearinghouse for Bioretention #1. TSS efficiency from Chesapeake Bay Program Established Efficiencies.

Westwood Country Club - Clubhouse, Tennis, Driving Range		
Information	**Input**	**As Developed**
Date Completed	2022	
Rainfall		
Site Area (SF)	358498.8	
Site Area (AC)		8.23
Watershed I %		
Pre-I Area (SF)	61855.2	
Pre-I Area (AC)		1.42
Pre-I Area (%)		
Pre C Value		
Pre-TP Load (VRRM)		**6.87**
Post-I Area (SF)	77101.2	
Post-I Area (AC)		1.77
Post-I Area (%)		
Post C Value		
Post-TP Load (VRRM)		**7.39**
Increase/Decrease		0.52
Stormwater Controls		
BMP 1	Wet Swale #1	
Efficiency	0.2	
I Area (AC)	0.93	
TP Removed		0.78
BMP 2	StormTech MTD	
Efficiency	0.4	
I Area (AC)	0.83	
TP Removed		1.39
BMP 3		
Efficiency	0	
I Area (AC)	0	
TP Removed		0.00
Total BMP TP Removed		**2.16**
Net Change in TP		**(1.64)**

Creditable Reductions for TN and TSS Per Guidance Appendix V.E			
TP Decrease for Impervious Reduction			-
TP Decrease for BMPs (Proportion of BMP Applied to TMDL Reduction)			
	0.76		(1.64)
Total Creditable TP Decrease			**(1.64)**
Total Associated TN Load	6.9		50.99
TN Decrease from Impervious Reduction			-
TN Decrease for BMPs	Efficiency	Proportion IA Treated by BMP	
BMP 1	0.25	0.525423729	(6.70)
BMP 2	0.261	0.468926554	(6.24)
BMP 3	0	0	-
TN Decrease for BMPs (Decrease * Prop. Applied to TMDL)			-9.827787947
Total Creditable TN Decrease (Imp. Reduction + BMPs)			**(9.83)**
Total Associated TSS Load	469.2		3,467.39
TSS Decrease from Impervious Reduction			-
TSS Decrease for BMPs	Efficiency	Proportion IA Treated by BMP	
BMP 1	0.6	0.525423729	(1,093.11)
BMP 2	0.523	0.468926554	(850.37)
BMP 3	0	0	-
TSS Decrease for BMPs (Decrease * Prop. Applied to TMDL)			(1,476.19)
Total Creditable TSS Decrease (Imp. Reduction + BMPs)			**(1,476.19)**

BMP Efficiency Methodology Description:

Pre-TP Load and Post-TP Load taken from Virginia Runoff Reduction Method Redevelopment Worksheet. Methodology confirmed by email from Kelsey Brooks at DEQ received 5/18/2016. Wet Swale #1: TP and TN efficiencies from Virginia BMP Clearinghouse; TSS efficiency from Chesapeake Bay Program Established Efficiencies for Wet Ponds and Wetlands. StormTech MTD: TP efficiency from Virginia BMP Clearinghouse; TN and TSS efficiencies calculated using Chesapeake Bay Program Retrofit Equations based on Runoff Depth Treated of 0.5 per email from Kelsey Brooks received 8/7/2015.

Tapawingo and Kingsley Road Improvements		
Information	**Input**	**As Developed**
Date Completed	2024	
Rainfall		
Site Area (SF)	12632.4	
Site Area (AC)		0.29
Watershed I %		
Pre-I Area (SF)	10018.8	
Pre-I Area (AC)		0.23
Pre-I Area (%)		
Pre C Value		
Pre-TP Load (VRRM)		**0.53**
Post-I Area (SF)	6969.6	
Post-I Area (AC)		0.16
Post-I Area (%)		
Post C Value		
Post-TP Load (VRRM)		**0.42**
Increase/Decrease		(0.11)
Stormwater Controls		
BMP 1	Urban Bioretention 1	
Efficiency	0.55	
I Area (AC)	1.12	
TP Removed		1.62
BMP 2		
Efficiency		
I Area (AC)		
TP Removed		0.00
BMP 3		
Efficiency	0	
I Area (AC)	0	
TP Removed		0.00
Total BMP TP Removed		**1.62**
Net Change in TP		**(1.73)**

Creditable Reductions for TN and TSS Per Guidance Appendix V.E			
TP Decrease for Impervious Reduction			(0.11)
TP Decrease for BMPs (Proportion of BMP Applied to TMDL Reduction)			
	1.00		(1.62)
Total Creditable TP Decrease			**(1.73)**
Total Associated TN Load	6.9		2.90
TN Decrease from Impervious Reduction			(0.76)
TN Decrease for BMPs	Efficiency	Proportion IA Treated by BMP	
BMP 1	0.64	7	(12.98)
BMP 2	0	0	-
BMP 3	0	0	-
TN Decrease for BMPs (Decrease * Prop. Applied to TMDL)			-12.98304
Total Creditable TN Decrease (Imp. Reduction + BMPs)			**(13.74)**
Total Associated TSS Load	469.2		197.06
TSS Decrease from Impervious Reduction			(51.61)
TSS Decrease for BMPs	Efficiency	Proportion IA Treated by BMP	
BMP 1	0.8	7	(1,103.56)
BMP 2	0	0	-
BMP 3	0	0	-
TSS Decrease for BMPs (Decrease * Prop. Applied to TMDL)			(1,103.56)
Total Creditable TSS Decrease (Imp. Reduction + BMPs)			**(1,155.17)**

BMP Efficiency Methodology Description:
Pre-TP Load and Post-TP Load taken from Virginia Runoff Reduction Method Redevelopment Worksheet. Methodology confirmed by email from Kelsey Brooks at DEQ received 5/18/2016. TP and TN efficiencies from Virginia BMP Clearinghouse for Bioretention #1. TSS efficiency from Chesapeake Bay Program Established Efficiencies.

Appendix D

Shared-Project Sediment Reduction Calculations

Appendix D provides calculations for shared-credit projects with Fairfax County. The project list is current as of FY2024. The Town receives 14.6% credit for projects in the Difficult Run watershed and 7.7% credit for projects in the Accotink Creek watershed. Local TMDL sediment reduction projects do not have to adjust for the sediment delivery factor. However, they do have to account for the TMDL-specific baseline for areas outside of the regulated MS4. For Difficult Run (Table 7-5 of the TMDL), both the overall and instream erosion load reduction target is 32%. As a result, the MS4 may take credit for 68% of any reductions in the unregulated area. For Accotink Creek (Tables ES-10, ES-14, and ES-17 from the TMDL), the load reduction target for other developed land is 77%, which means the MS4 may take credit for 23% of any reduction from land-based structural retrofit projects. The load reduction target for streambank is 76%, which means the MS4 may take credit for 24% of any reduction from stream restoration projects.

Project Name	Substantial Completion	Long.	Lat.	Type of Project or BMP	Treated (Ac)	Impervious Treated (Ac)	Pervious Treated (Ac)	Estimated Amount of Total Pollutant Reduction - TSS (lbs/yr)	Pollutant Reduction Calculation Method	% Treated Area Outside Regulated MS4	Local TMDL Credit Not Subject to Baseline - TSS (lbs/yr)	Local TMDL Credit Subject to Baseline - TSS (lbs/yr)	Watershed
Prosperity Heights	1/10/2011	-77.236636	38.858906	Extended Detention Pond	55.57	28.57	27.00	19,105.61	CBP Established Efficiency, Dry Extended Detention Ponds	11%	17,003.99	2,101.62	Accotink Creek
Patriot Village Sec 2	2/2/2012	-77.221133	38.822246	Extended Detention Pond	75.00	42.75	32.25	27,871.74	CBP Established Efficiency, Dry Extended Detention Ponds	5%	26,506.02	1,365.72	Accotink Creek
Villa D'Este Village Sec 3	5/18/2012	-77.288275	38.867642	Extended Detention Pond	14.70	5.88	8.82	4,218.96	CBP Established Efficiency, Dry Extended Detention Ponds	3%	4,083.95	135.01	Accotink Creek
Springfield Forest Schupps Addition Pond	5/23/2014	-77.165459	38.777259	Constructed Wetland	4.67	1.17	3.50	1,580.94	CBP Retrofits Expert Panel, ST, 2.5 inches of runoff treated	2%	1,550.91	30.04	Accotink Creek
Brookfield Park Dam	11/14/2014	-77.200901	38.788123	Wet Pond	48.69	18.57	30.12	21,533.00	CBP Retrofits Expert Panel, ST, 2.5 inches of runoff treated	80%	4,306.60	17,226.40	Accotink Creek
Brookfield Park Dam	11/14/2014	-77.200141	38.786728	Permeable Pavement	0.17	0.17	-	166.51	CBP Retrofits Expert Panel, RR, 1.97 inches of runoff treated	100%	-	166.51	Accotink Creek
Merrifield Human Services Center (Mid	11/21/2014	-77.234023	38.863721	Infiltration	0.15	0.06	0.09	81.80	CBP Established Efficiency, Infiltration Practices w/o Sand, Veg.	0%	81.80	-	Accotink Creek
Merrifield Human Services Center (Mid	11/21/2014	-77.234023	38.863721	Filtering Practices	0.14	0.03	0.11	43.58	CBP Established Efficiency, Filtering Practices	0%	43.58	-	Accotink Creek
Merrifield Human Services Center (Mid	11/21/2014	-77.234023	38.863721	Filtering Practices	0.12	0.04	0.08	48.73	CBP Established Efficiency, Filtering Practices	0%	48.73	-	Accotink Creek
Merrifield Human Services Center (Mid	11/21/2014	-77.234023	38.863721	Vegetated Roof	0.03	0.03	-	-	CBP Retrofits Expert Panel, RR, 0 inches of runoff treated	0%	-	-	Accotink Creek
Merrifield Human Services Center (Mid	11/21/2014	-77.234023	38.863721	Dry Swale	0.10	0.04	0.06	45.92	CBP Established Efficiency, Bioswale	0%	45.92	-	Accotink Creek
Merrifield Human Services Center (Mid	11/21/2014	-77.234023	38.863721	Permeable Pavement	0.48	0.30	0.18	210.67	CBP Established Efficiency, Permeable Pavement w/o Sand, Veg. C/D soils,	0%	210.67	-	Accotink Creek
Ravensworth Elementary School	1/29/2016	-77.222624	38.803130	Bioretention	0.65	0.22	0.43	283.84	CBP Retrofits Expert Panel RR, 2.5 inches of runoff treated	0%	283.84	-	Accotink Creek
Keene Mill ES	8/15/2016	-77.222504	38.780523	Permeable Pavement	0.42	0.27	0.15	292.27	CBP Retrofits Expert Panel RR, 2.5 inches of runoff treated	100%	-	292.27	Accotink Creek
Keene Mill ES	8/15/2016	-77.221826	38.781915	Dry Swale	0.19	0.14	0.05	138.22	CBP Established Efficiency, Bioswale	0%	138.22	-	Accotink Creek
North Springfield ES	11/1/2016	-77.207982	38.802543	Bioretention	3.42	0.88	2.54	1,209.71	CBP Retrofits Expert Panel RR, 1.67 inches of runoff treated	100%	-	1,209.71	Accotink Creek
Mantua ES	8/21/2017	-77.258500	38.847300	Infiltration	4.99	3.25	1.74	3,907.05	CBP Established Efficiency, Infiltration Practices w/o Sand, Veg.	37%	2,458.54	1,448.51	Accotink Creek
Mantua ES	8/21/2017	-77.258597	38.847374	Dry Swale	0.65	0.20	0.45	250.70	CBP Established Efficiency, Bioswale	0%	250.70	-	Accotink Creek
Luther Jackson IS	12/6/2019	-77.230507	38.868246	Infiltration	0.45	0.41	0.04	462.91	CBEE Infiltration w/o sand	0%	462.91	-	Accotink Creek
Luther Jackson IS	12/6/2019	-77.231643	38.866938	Extended Detention Pond	43.39	34.93	8.46	26,395.83	CBP Retrofits Expert Panel, ST curve, for 0.7 inches runoff	0%	26,395.83	-	Accotink Creek
Nottoway Park Phase 2	3/16/2020	-77.274818	38.885919	Dry Swale	3.98	0.42	3.56	894.24	CBEE Dry Swale	100%	-	894.24	Accotink Creek
Nottoway Park Phase 2	3/16/2020	-77.274906	38.884787	Bioretention	1.23	0.51	0.72	758.01	CBEE Bioretention A/B soils, underdrain	100%	-	758.01	Accotink Creek
Nottoway Park Phase 2	3/16/2020	-77.273892	38.885178	Dry Swale	0.69	0.05	0.64	136.86	CBEE Dry Swale	100%	-	136.86	Accotink Creek
Nottoway Park Phase 2	3/16/2020	-77.274973	38.885071	Dry Swale	1.58	0.64	0.94	731.92	CBEE Dry Swale	100%	-	731.92	Accotink Creek
Nottoway Park Phase 2	3/16/2020	-77.274906	38.884787	Bioretention	1.27	0.07	1.20	234.36	CBEE Bioretention A/B soils, underdrain	100%	-	234.36	Accotink Creek
Nottoway Park Phase 2	3/16/2020	-77.274254	38.884998	Constructed Wetland	28.58	1.87	26.71	4,304.32	CBP Retrofits Expert Panel, ST curve, for 0.7 inches of runoff	92%	361.56	3,942.76	Accotink Creek
Nottoway Park Phase 2	3/16/2020	-77.272714	38.885142	Bioretention	0.96	0.35	0.61	413.76	CBEE Bioretention A/B soils, underdrain	100%	-	413.76	Accotink Creek
Nottoway Park Phase 2	3/16/2020	-77.273789	38.884902	Dry Swale	0.35	0.11	0.24	136.83	CBEE Dry Swale	100%	-	136.83	Accotink Creek
Nottoway Park Phase 2	3/16/2020	-77.272805	38.884910	Dry Swale	0.35	0.10	0.25	128.87	CBEE Dry Swale	100%	-	128.87	Accotink Creek
Ben Franklin Park Sec 1	11/25/2020	-77.189329	38.770513	Constructed Wetland	58.30	16.45	41.85	6,828.08	CBP Retrofits Expert Panel, ST curve, for 0.2 inches of runoff	92%	546.25	6,281.83	Accotink Creek
Nutley Pond @ Virginia Center	11/14/2022	-77.268687	38.87994	Dredging to restore pond volun	749.00	253.20	495.80	79,793.83	CBP Retrofits Expert Panel, ST curve, for 0.3 inches of runoff	87%	10,373.20	69,420.63	Accotink Creek
Government Center Stormwater Retrofit	6/29/2012	-77.353366	38.853269	Constructed Wetland	4.28	3.12	1.16	3,071.89	CBP Retrofits Expert Panel, ST, 2.5 inches of runoff treated	0%	3,071.89	-	Difficult Run
Government Center Stormwater Retrofit	6/29/2012	-77.355078	38.852334	Constructed Wetland	45.35	25.85	19.50	25,193.45	CBP Retrofits Expert Panel, ST, 1.39 inches of runoff treated	0%	25,193.45	-	Difficult Run
Waples Mill ES Phase II	8/8/2012	-77.345172	38.875711	Permeable Pavement	0.82	0.71	0.11	708.85	CBP Retrofits Expert Panel, RR, 1.92 inches of runoff treated		708.85	-	Difficult Run
Great Falls Nike Park #4	11/1/2012	-77.324875	38.992132	Infiltration	0.95	0.90	0.05	1,009.83	CBP Established Efficiency, Infiltration Practices w/o Sand, Veg.	0%	1,009.83	-	Difficult Run
Great Falls Nike Park #4	11/1/2012	-77.324875	38.992132	Dry Swale	0.40	0.09	0.31	133.07	CBP Retrofits Expert Panel, RR, 2 inches of runoff treated	0%	133.07	-	Difficult Run
Great Falls Nike Park #4	11/1/2012	-77.324875	38.992132	Infiltration	1.89	1.79	0.10	2,008.53	CBP Established Efficiency, Infiltration Practices w/o Sand, Veg.	0%	2,008.53	-	Difficult Run
Fairfax County Landbay C, Pond #4	3/20/2013	-77.355287	38.852875	Constructed Wetland	16.99	9.25	7.74	9,722.55	CBP Retrofits Expert Panel, ST, 2.31 inches of runoff treated	0%	9,722.55	-	Difficult Run
Regional SWM Pond D-31	6/24/2013	-77.314594	38.892094	Extended Detention Pond	331.11	116.20	214.91	86,944.28	CBP Established Efficiency, Dry Extended Detention Ponds	39%	53,296.84	33,647.44	Difficult Run
Towlston Meadow (0371DP)	4/4/2014	-77.265751	38.949846	Constructed Wetland	26.00	8.00	18.00	6,267.48	CBP Established Efficiency, Wet Ponds and Wetlands	0%	6,267.48	-	Difficult Run
Oak Marr Rec Center Stormwater	8/1/2014	-77.316279	38.874842	Bioretention	0.95	0.75	0.20	441.28	CBP Retrofits Expert Panel, RR, 0.4 inches of runoff treated	0%	441.28	-	Difficult Run
Oakton Library	9/15/2014	-77.302299	38.883608	Permeable Pavement	0.37	0.25	0.12	267.78	CBP Retrofits Expert Panel, RR, 2.5 inches of runoff treated	0%	267.78	-	Difficult Run
Oakton Library	9/15/2014	-77.301820	38.883805	Bioretention	0.91	0.67	0.24	454.84	CBP Established Efficiency, Bioretention C/D soils, underdrain	0%	454.84	-	Difficult Run
Oakton Library	9/15/2014	-77.301959	38.883783	Infiltration	0.50	0.42	0.08	480.72	CBP Established Efficiency, Infiltration Practices w/o Sand, Veg.	0%	480.72	-	Difficult Run
Oakton Swim and Racquet Club (DF9045A6)	5/22/2015	-77.350396	38.880302	Bioretention	22.70	3.74	18.96	4,242.65	CBP Established Efficiency, Bioretention C/D soils, underdrain	0%	4,242.65	-	Difficult Run
Oakton Swim and Racquet Club (DF9045A6)	5/22/2015	-77.350679	38.880300	Bioretention	18.87	2.47	16.40	3,176.95	CBP Established Efficiency, Bioretention C/D soils, underdrain	2%	3,103.88	73.07	Difficult Run
Oakton Swim and Racquet Club (DF9045A6)	5/22/2015	-77.350653	38.879188	Bioretention	5.32	2.18	3.14	1,708.02	CBP Established Efficiency, Bioretention C/D soils, underdrain	2%	1,675.57	32.45	Difficult Run
Sunrise Valley ES	9/1/2015	-77.321300	38.941291	Permeable Pavement	0.21	0.14	0.07	150.38	CBP Retrofits Expert Panel, RR, 2.5 inches of runoff treated	0%	150.38	-	Difficult Run
Sunrise Valley ES	9/1/2015	-77.320802	38.941418	Permeable Pavement	0.55	0.39	0.16	413.66	CBP Retrofits Expert Panel, RR, 2.5 inches of runoff treated	0%	413.66	-	Difficult Run
Sunrise Valley ES	9/1/2015	-77.319947	38.941094	Dry Swale	0.33	0.19	0.14	197.73	CBP Established Efficiency, Bioswale	0%	197.73	-	Difficult Run
Sunrise Valley ES	9/1/2015	-77.318977	38.939997	Infiltration	2.72	1.43	1.29	1,797.22	CBP Established Efficiency, Infiltration Practices w/o Sand, Veg.	0%	1,797.22	-	Difficult Run
Terraset ES	12/15/2015	-77.343127	38.937057	Permeable Pavement	1.28	0.84	0.44	905.27	CBP Retrofits Expert Panel RR, 2.5 inches of runoff treated	100%	-	905.27	Difficult Run
Terraset ES	12/15/2015	-77.343622	38.935493	Permeable Pavement	0.69	0.35	0.34	400.69	CBP Retrofits Expert Panel RR, 2.5 inches of runoff treated	100%	-	400.69	Difficult Run
Penderbrook (DF9045/0691DP)	3/8/2016	-77.362336	38.877710	Constructed Wetland	22.53	2.60	19.93	4,239.05	CBP Retrofits Expert Panel, ST, 0.79 inches of runoff treated	90%	415.43	3,823.63	Difficult Run
Public Safety Headquarters Building	8/30/2017	-77.362589	38.857386	Dry Swale	3.10	2.54	0.56	2,458.08	CBP Established Efficiency, Bioswale	0%	2,458.08	-	Difficult Run

Public Safety Headquarters Building	8/30/2017	-77.362589	38.857386	Dry Swale	0.26	0.20	0.06	194.26	CBP Established Efficiency, Bioswale	0%	194.26	-	Difficult Run
Public Safety Headquarters Building	8/30/2017	-77.362589	38.857386	Permeable Pavement	0.24	0.24	-	210.59	CBP Retrofits Expert Panel RR, 1.0 inches of runoff treated	0%	210.59	-	Difficult Run
Public Safety Headquarters Building	8/30/2017	-77.362589	38.857386	Vegetated Roof	0.53	0.53	-	465.05	CBP Retrofits Expert Panel, RR, 1.0 inches of runoff treated	0%	465.05	-	Difficult Run
Public Safety Headquarters Building	8/30/2017	-77.362589	38.857386	Rainwater Harvesting	0.61	0.61	-	582.95	CBP Retrofits Expert Panel, RR, 1.51 inches of runoff treated	0%	582.95	-	Difficult Run
Public Safety Headquarters Building	8/30/2017	-77.362589	38.857386	Biofilter # 1	0.09	0.02	0.07	25.01	CBP Retrofits Expert Panel, ST, 1.0 inches of runoff treated	0%	25.01	-	Difficult Run
Public Safety Headquarters Building	8/30/2017	-77.362589	38.857386	Biofilter # 2	0.26	0.15	0.11	136.36	CBP Retrofits Expert Panel, ST, 1.0 inches of runoff treated	0%	136.36	-	Difficult Run
Herrity Pond Retrofit	8/8/2018	-77.361313	38.857138	Wet Pond	33.90	17.43	16.47	412.29	CBP Retrofits Expert Panel RR, 0.48 inches of runoff treated	0%	412.29	-	Difficult Run
Browns Chapel Pond & Outfall Improvement	4/20/2019	-77.308138	38.970711	Extended Detention Pond	81.66	20.07	61.59	2,693.90	CBP Retrofits Expert Panel, ST curve (wet ponds) for forebay only, 0.14	27%	1,965.11	728.79	Difficult Run
Langston Hughes MS	6/30/2020	-77.338308	38.934725	Infiltration	2.00	1.90	0.10	2,130.93	CBEE Infiltration w/o sand	0%	2,130.93	-	Difficult Run
Herrity Concrete Fountain Replacement	1/29/2021	-77.362500	38.856500	Rainwater Harvesting	2.20	1.87	0.33	697.00	VA Rainwater Harvesting Spreadsheet	0%	697.00	-	Difficult Run
Herrity Concrete Fountain Replacement	1/29/2021	-77.362500	38.856500	Bioretention	0.10	0.08	0.02	53.67	CBEE Bioretention C/D soils, underdrain	0%	53.67	-	Difficult Run
Leigh Meadow & Towlston	10/29/2021	-77.2691	38.95174	Filtering Practices	19.42	6.73	12.69	4,081.63	CBEE Filtering Practices	27%	3,000.00	1,081.63	Difficult Run
								370,286.99			222,538.17	147,748.82	

			Total
Difficult Run Total	127,384.94	40,692.97	168,077.91
% Credit for Baseline	100%	68%	
Difficult Run After Baseline	127,384.94	27,671.22	155,056.16
Vienna % per Cooperative Agreement	0.146	0.146	
Difficult Run Vienna Share	18,598.20	4,040.00	22,638.20

Accotink Creek Total	95,153.23	107,055.85	202,209.08
% Credit for Baseline	100%	23%	
Accotink Creek After Baseline	95,153.23	24,622.85	119,776.07
Vienna % per Cooperative Agreement	0.077	0.077	
Accotink Creek Vienna Share	7,326.80	1,895.96	9,222.76

#	Project Name	Substantial Completion	Longitude	Latitude	Type of Project or BMP	Acres Treated (Ac)	Impervious Acres Treated (Ac)	Pervious Acres Treated (Ac)	Restored Length (LF)	Estimated Amount of Total Pollutant Reduction - TSS (lbs/yr) without SDR	Pollutant Reduction Calculation Method	% Treated Area Outside Regulated Area	Local TMDL Credit Not Subject to Baseline - TSS (lbs/yr)	Local TMDL Credit Subject to Baseline - TSS (lbs/yr)	Watershed
6	Hunters Branch	6/13/2011	-77.2633	38.866006	Outfall Restoration	4.14	2.78	1.36	65	5,380	CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 65 LF, Average Stream Bank Height: 65 ft, Sediment Delivery Ratio: 0.181	4.8%	5,121.81	258.24	Accotink Creek
7	Villa D'Este Village Sec 3	5/18/2012	-77.28831562	38.86771963	Urban Stream Restoration	14.64	4.43	10.21	260	64,469	CBP Urban Stream Restoration Interim Approved Removal Rates	1.7%	63,372.54	1,095.96	Accotink Creek
16	Wakefield Run Stream Restoration	3/25/2014	-77.224239	38.825398	Urban Stream Restoration	106.50	52.53	53.97	816	76,255	CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 816 LF, Average Stream Bank Height: 3.5 ft, Sediment Delivery Ratio: 0.181; Protocol 2 - Average Stream Bank Width: 20 ft	16.5%	63,673.09	12,582.11	Accotink Creek
28	Crestleigh Way Outfall Restoration (AC83-0007)	9/14/2015	-77.1689987	38.7583008	Outfall Restoration	14.35	4.93	9.42	105	3,692	CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 70 LF, Average Stream Bank Height: 105 ft, Sediment Delivery Ratio: 0.065	0.0%	3,691.53	-	Accotink Creek
29	Lenox Drive Outfall Restoration (AC83-0006)	10/30/2015	-77.2805023	38.8372002	Outfall Restoration	16.26	5.31	10.95	100	25,632	CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 120 LF, Average Stream Bank Height: 100 ft, Sediment Delivery Ratio: 0.181	1.0%	25,375.68	256.32	Accotink Creek
31	5216 Inverchapel Rd (AC83-0003)	12/21/2015	-77.23000389	38.80915889	Outfall Restoration	35.64	15.85	19.79	175	17,756	CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 175 LF, Average Stream Bank Height: 175 ft, Sediment Delivery Ratio: 0.181; Protocol 4: Runoff	1.6%	17,471.41	284.09	Accotink Creek
33	Accotink Tributary 9210(Wakefield Park South)	8/17/2016	-77.2276	38.813801	Urban Stream Restoration	271.49	108.84	162.65	2700	3,484,000	CBP Urban Stream Restoration Expert Panel: Protocol 1 -BANCS Sediment Load Estimate: 3484 tons/yr, Sediment Delivery Ratio: 0.181; Protocol 2 - Average Stream Bank Width: 4.55 ft	67.8%	1,121,848.00	2,362,152.00	Accotink Creek
35	Hunters Branch Restoration	10/1/2016	-77.272799	38.887594	Urban Stream Restoration	388.72	124.83	263.89	2067	512,525	CBP Urban Stream Restoration Interim Approved Removal Rates	28.0%	369,017.74	143,506.90	Accotink Creek
36	Accotink Tributary 9232(Wakefield Park North)	10/6/2016	-77.225601	38.820702	Urban Stream Restoration	113.37	46.43	66.94	865	293,000	CBP Urban Stream Restoration Expert Panel: Protocol 1 -BANCS Sediment Load Estimate: 293 tons/yr, Sediment Delivery Ratio: 0.181; Protocol 2 - Average Stream	21.9%	228,833.00	64,167.00	Accotink Creek
38	Accotink Tributary at Daventry	10/25/2016	-77.209548	38.765789	Urban Stream Restoration	133.89	39.68	94.21	153.1	22,399	CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 152.53 LF, Average Stream Bank Height: 5.5 ft, Sediment Delivery Ratio: 0.181; Protocol 2 -	25.3%	16,732.08	5,666.95	Accotink Creek
38	Accotink Tributary at Daventry	10/25/2016	-77.209548	38.765789	Urban Stream Restoration				185.4	29,118	CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 181.76 LF, Average Stream Bank Height: 6 ft, Sediment Delivery Ratio: 0.181; Protocol 2 - Average Stream Bank Width: 6.73 ft		29,117.95	-	Accotink Creek
42	Toll House Road Outfall Restoration	3/31/2017	-77.2258231378881	38.8234086031456	Outfall Restoration	24.39	7.26	17.13	227.19	33,335	CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 227 LF, Average Stream Bank Height: 5.5 ft, Sediment Delivery Ratio: 0.181	0.0%	33,334.97	-	Accotink Creek
44	Babson Court Outfall Restoration	7/21/2017	-77.271345	38.817677	Outfall Restoration	12.96	3.74	9.22	383.2	60,876	CBP Urban Stream Restoration Expert Panel: Protocol 1 - Existing Length: 380 LF,	30.8%	42,126.19	18,749.81	Accotink Creek
48	Turkey Run at Truro	10/19/2017	-77.245164	38.828326	Urban Stream Restoration	259.23	67.48	191.75	3581.5	1,475,690	CBP Urban Stream Restoration Expert Panel: Protocol 1 -BANCS Sediment Load Estimate: 1,475.69 tons/yr, Sediment Delivery Ratio: 0.181	10.9%	1,315,476.38	160,213.62	Accotink Creek
50	Nottoway Park Retrofit Ph I	2/15/2018	-77.189617	38.938023	Outfall Restoration	47.14	16.06	31.08	248.0	28,929	CBP Urban Stream Restoration Expert Panel: Protocol 1 -BANCS Sediment Load Estimate: 18.42 tons/yr, Sediment Delivery Ratio: 0.181; Protocol 4 - Treated Runoff Depth: 0.0626 in	81.7%	5,307.73	23,621.29	Accotink Creek
52	Nottoway Park Retrofit Ph I	2/15/2018	-77.192597	38.937042	Outfall Restoration	20.10	6.74	13.36	213.0	19,570	CBP Urban Stream Restoration Expert Panel: Protocol 1 -BANCS Sediment Load Estimate: 19.57 tons/yr, Sediment Delivery Ratio: 0.181	77.1%	4,482.83	15,087.17	Accotink Creek
54	Oakford Drive Stream Restoration	4/27/2018	-77.230847	38.757118	Urban Stream Restoration	97.59	41.28	56.31	1302.0	440,249	CBP Urban Stream Restoration Expert Panel: Protocol 1 -BANCS Sediment Load Estimate: 440.25 tons/yr, Sediment Delivery Ratio: 0.181	8.3%	403,913.06	36,335.56	Accotink Creek
60	Long Branch at Long Branch Falls Park	11/20/2018	-77.259204	38.815669	Urban Stream Restoration	79.94	27.44	52.50	533.00	120,530	CBP Urban Stream Restoration Expert Panel: Protocol 1 -BANCS Sediment Load Estimate: 120.53 tons/yr, Sediment Delivery Ratio: 0.181; Protocol 2 - Average Stream	0.1%	120,409.47	120.53	Accotink Creek
60	Long Branch at Long Branch Falls Park	11/20/2018							227.00	11,980	CBP Urban Stream Restoration Expert Panel: Protocol 1 -BANCS Sediment Load Estimate: 11.98 tons/yr, Sediment Delivery Ratio: 0.181		11,980.00	-	Accotink Creek
63	Glenbrook Road Outfall Restoration	12/11/2018	-77.25341	38.851399	Outfall Restoration	15.84	3.24	12.60	274.0	29,370	CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 275 LF, Average Stream Bank Height: 4.0 ft, Sediment Delivery Ratio: 0.181	0.7%	29,164.41	205.59	Accotink Creek
69	Robey Avenue Outfall Restoration	6/12/2019	-77.231483	38.846742	Outfall Restoration	24.68	6.61	18.07	163.0	13,697	CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 171 LF, Average Stream Bank Height: 3.0 ft, Sediment Delivery Ratio: 0.181	2.0%	13,419.16	277.94	Accotink Creek
78	Flag Run at Elgar St	10/21/2020	-77.21222	38.80581	Urban Stream Restoration	207.68	66.46	141.2	3,245	229,061	CBP Urban Stream Restoration Expert Panel: Protocol 1 -BANCS Sediment Load Estimate: 229.06 tons/yr, Sediment Delivery Ratio: 0.181	49.9%	114,759.45	114,301.33	Accotink Creek
	Accotink Creek @ Wakefield Park	11/23/2021	-77.2286111	38.815725	Urban Stream Restoration	15,296.00	5,292.00	10,004.0	4,878	491,000	CBP Urban Stream Restoration Expert Panel: Protocol 1 -BANCS Sediment Load Estimate: 491 tons/yr, Sediment Delivery Ratio: 0.181	66.8%	163,012.00	327,988.00	Accotink Creek
	Rolling Creek Way	2/21/2023	-77.17531	38.74366	Regenerative Storm Conveyance	90.50	32.00	58.5	1,193	127,412	CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 1193 LF, Average Stream Bank Height: 4 ft, Sediment Delivery Ratio: 0.181	24.2%	96,578.58	30,833.79	Accotink Creek
	Terra Grande Outfall	6/1/2021	-77.203492	38.73463	Regenerative Storm Conveyance	11.97	3.33	8.6	325	43,388	CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 325 LF, Average Stream Bank Height: 5 ft, Sediment Delivery Ratio: 0.181	15.7%	36,575.67	6,811.84	Accotink Creek
	Accotink Trib @ Danbury Forest	4/9/2024	-77.235134	38.802252	Urban Stream Restoration	244.00	73.70	170.3	2,852	1,177,960	CBP USREP: P1: BANCS 1,177.96 ton/yr, SDR 0.181, P2: Restored Length 2577 ft, Average Width 7.17 ft	31.7%	804,825.14	373,134.86	Accotink Creek
	Crook Branch @ Mantua Hills	9/27/2023	-77.250742	38.845084	Urban Stream Restoration	827.80	287.25	540.6	3,756	5,687,130	CBP USREP: P1: BANCS 5,687.13 ton/yr, SDR 0.181, P2: Restored Length 3266 ft, Average Width 7.78 ft	42.7%	3,257,104.88	2,430,025.12	Accotink Creek
8	Government Center Stormwater Retrofit	6/29/2012	-77.35337445	38.85410551	Urban Stream Restoration	148.14	74.73	73.41	1000	125,490	CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 1000 LF, Average Stream Bank Height: 4.7 ft, Sediment Delivery Ratio: 0.181; Protocol 2 - Average Stream Bank Width: 1 ft	15.8%	105,662.58	19,827.42	Difficult Run
14	Wolftrap Creek	10/19/2013	-77.25065238	38.90247256	Urban Stream Restoration	755.57	350.97	404.60	2089	172,907	CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 2089 LF, Average Stream Bank Height: 3.1 ft, Sediment Delivery Ratio: 0.181; Protocol 2 - Average Stream Bank Width: 25.8 ft	26.0%	127,950.83	44,955.70	Difficult Run
22	Miller Heights Outfall	8/7/2014	-77.325369	38.888489	Outfall Restoration	23.83	5.34	18.49	233	64,800	CBP Urban Stream Restoration Expert Panel: Protocol 1 -BANCS Sediment Load Estimate: 64.8 tons/yr, Sediment Delivery Ratio: 0.181	6.2%	60,782.40	4,017.60	Difficult Run
23	South Lakes Stream Restoration	10/1/2014	-77.33658495	38.93207598	Urban Stream Restoration	37.23	19.79	17.43	660	24,318	CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 660 LF, Average Stream Bank Height: 1.38 ft, Sediment Delivery Ratio: 0.181; Protocol 2 -	14.3%	20,840.83	3,477.53	Difficult Run
25	Difficult Run Tributary at Oakton Estates (DF9045)	6/26/2015	-77.35026779	38.87799459	Urban Stream Restoration	55.97	10.65	45.33	300	36,045	CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 300 LF, Average Stream Bank Height: 4.5 ft, Sediment Delivery Ratio: 0.181; Protocol 2 -	6.6%	33,666.03	2,378.97	Difficult Run
45	Colvin Run Ph I	8/9/2017	-77.311688	38.965054	Urban Stream Restoration	2,776.59	947.96	1,828.63	2175.0	846,000	CBP Urban Stream Restoration Expert Panel: Protocol 1 -BANCS Sediment Load Estimate: 846 tons/yr, Sediment Delivery Ratio: 0.181; Protocol 2 - Average Stream	43.2%	480,528.00	365,472.00	Difficult Run
45	Colvin Run Ph I	8/9/2017	-77.314909	38.963992	Urban Stream Restoration				110.0	17,000	CBP Urban Stream Restoration Expert Panel: Protocol 1 -BANCS Sediment Load		17,000.00	-	Difficult Run
45	Colvin Run Ph I	8/9/2017	-77.313468	38.964642	Urban Stream Restoration				350.0	63,000	CBP Urban Stream Restoration Expert Panel: Protocol 1 -BANCS Sediment Load Estimate: 63 tons/yr, Sediment Delivery Ratio: 0.181; Protocol 2 - Average Stream Bank Width: 4 ft		63,000.00	-	Difficult Run
52	Stone Mill Court Reach 2	4/24/2018	-77.342058	38.879321	Outfall Restoration	32.96	7.76	25.20	262.8	28,088	CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 263 LF, Average Stream Bank Height: 4 ft, Sediment Delivery Ratio: 0.181	4.3%	26,880.60	1,207.80	Difficult Run
55	Robinson, PCL 19 @ 0723DP (DF82-03)	5/22/2018	-77.293272	38.9708	Outfall Restoration	34.33	5.08	29.25	260.0	6,942	CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 260 LF, Average Stream Bank Height: 1.0 ft, Sediment Delivery Ratio: 0.181	93.6%	444.29	6,497.71	Difficult Run
59	Lake Martin Tributaries	10/23/2018	-77.341165	38.88487	Outfall Restoration	29.48	5.24	24.24	1363.00	200,378	CBP Urban Stream Restoration Expert Panel: Protocol 1 -BANCS Sediment Load Estimate: 175 tons/yr, Sediment Delivery Ratio: 0.181, Protocol 4 - a RSC with 6,534 cf of runoff treated	10.57%	179,190.64	21,187.23	Difficult Run
66	Browns Chapel Pond & Outfall Improvement	4/20/2019	-77.307614	38.96985	Outfall Restoration	91.58	22.42	69.16	145.0	28,355	CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 180 LF, Average Stream Bank Height: 5.9 ft, Sediment Delivery Ratio: 0.181	26.1%	20,946.33	7,409.07	Difficult Run
62	Wolftrap Creek Phase 2	10/18/2017	-77.246262	38.90577	Urban Stream Restoration	693.74	268.15	425.59	1020	252,915	CBP Urban Stream Restoration Interim Approved Removal Rates	12.0%	222,565.13	30,349.79	Difficult Run
	Difficult Run Tributary @ Brittenford Drive	3/1/2020	-77.297957	38.943905	Urban Stream Restoration	459.20	112.42	346.8	5,402	3,487,330	CBP Urban Stream Restoration Expert Panel: Protocol 1 -BANCS Sediment Load Estimate: 3487.33 tons/yr, Average Stream Bank Height: 4.7 ft , Protocol 2 - Restored	36.4%	2,217,941.88	1,269,388.12	Difficult Run

	Brevity Drive Outfall	11/27/2019	-77.30877	38.98328	Outfall Restoration	88.90	14.20	74.7	540	86,508	CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 540 LF, Average Stream Bank Height: 6 ft, Sediment Delivery Ratio: 0.181	77.1%	19,810.33	66,697.68	Difficult Run
73	Old Courthouse Spring Branch - Phase I @ Gosnell Road	1/29/2021	-77.247156	38.925587	Urban Stream Restoration	369.25	259.69	109.6	3,236	454,878	CBP Urban Stream Restoration Expert Panel: Protocol 2 -BANCS Sediment Load Estimate: 454.88 tons/yr, Sediment Delivery Ratio: 0.181	39.2%	276,566.10	178,312.35	Difficult Run
	Snakeden Branch Tributary @ Lake Audubon	1/15/2021	-77.335564	38.929434	Urban Stream Restoration	46.76	22.44	24.3	863	117,923	CBP Urban Stream Restoration Expert Panel: Protocol 1 -BANCS Sediment Load Estimate: 117.92 tons/yr, Sediment Delivery Ratio: 0.181	28.2%	84,668.46	33,254.19	Difficult Run
	Miller Heights Outfall	3/11/2021	-77.32549	38.888567	Outfall Restoration	31.00	5.89	25.1	403	51,110	CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 403 LF, Average Stream Bank Height: 4.75 ft, Sediment Delivery Ratio: 0.181	36.7%	32,352.94	18,757.55	Difficult Run
	Rockport Road	11/11/2020	-77.27333	38.913687	Outfall Restoration	39.70	13.10	26.6	378	80,740	CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 378 LF, Average Stream Bank Height: 8 ft, Sediment Delivery Ratio: 0.181	47.9%	42,065.71	38,674.62	Difficult Run
	Brooktrail Court	6/10/2021	-77.28009	38.928154	Outfall Restoration	39.11	7.04	32.1	300	32,039	CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 300 LF, Average Stream Bank Height: 4 ft, Sediment Delivery Ratio: 0.181	77.5%	7,208.70	24,829.97	Difficult Run
	Piney Branch	3/25/2021	-77.111759	38.814183	Urban Stream Restoration	688.50	249.80	438.7	1,525	574,801	CBP Urban Stream Restoration Expert Panel: Protocol 1 -BANCS Sediment Load Estimate: 574.81 tons/yr, Sediment Delivery Ratio: 0.181	8.4%	526,517.81	48,283.29	Difficult Run
	Leigh Meadow & Towlston	10/29/2021	-77.27115	38.95121	Urban Stream Restoration	117.87	41.42	76.5	1,687	463,860	CBP Urban Stream Restoration Expert Panel: Protocol 1 -BANCS Sediment Load Estimate: 463.86 tons/yr, Average Stream Bank Height: 6.2 ft, Sediment Delivery Ratio: 0.181	26.5%	340,937.10	122,922.90	Difficult Run
	Leigh Meadow & Towlston	10/29/2021	-77.27115	38.95121	Outfall Restoration	9.55	2.73	6.8	187	20,623	CBP Urban Stream Restoration Expert Panel: Protocol 4 -Proposed treatment volume: 26,764 cf, Sediment Delivery Ratio: 0.181	26.5%	15,157.57	5,464.97	Difficult Run
	Chestnut Burr Court	10/17/2021	-77.34433	38.930976	Outfall Restoration	10.70	4.60	6.1	654	48,226	CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 654 LF, Average Stream Bank Height: 3 ft, Sediment Delivery Ratio: 0.181	31.3%	33,131.09	15,094.66	Difficult Run
	Shouse Village	3/11/2022	-77.27026	38.944231	Outfall Restoration	117.93	37.69	80.2	1,035	124,355	CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 1035 LF, Average Stream Bank Height: 4.5 ft, Sediment Delivery Ratio: 0.181	8.1%	114,282.47	10,072.78	Difficult Run
	Piney Run @ Lake Wereowance	1/23/2023	-77.2864	38.983	Urban Stream Restoration	2,601.60	520.32	2,081.3	3,267	1,101,770	CBP Urban Stream Restoration Expert Panel: Protocol 1 -BANCS Sediment Load Estimate: 708.53 tons/yr, Sediment Delivery Ratio: 0.181, Protocol 2 - Restored Length	63.3%	404,349.59	697,420.41	Difficult Run
	Rocky Branch Trib @ Ashlawn Park	5/30/2024	-77.299658	38.898411	Urban Stream Restoration	34.60	9.50	25.1	1,529	626,880	CBP USREP: P1: BANCS 626.88 ton/yr, SDR 0.181	48.0%	325,977.60	300,902.40	Difficult Run
	Rocky Run Tributary @ Dulles Access Road	9/21/2023	-77.241625	38.937639	Urban Stream Restoration	303.62	170.94	132.7	1,186	96,520	CBP USREP: P1: BANCS 96.52 ton/yr, SDR 0.181, P2: Restored Length 875 ft, Average Width 10.5 ft	86.0%	13,512.80	83,007.20	Difficult Run
	Madison Meadows Lane	4/20/2023	-77.336358	38.903593	Outfall Restoration	47.80	10.52	37.3	816	424,942	CBP USREP: P1: BANCS 313.7 tons/yr. 0.97 lb/ton TP, 0.37 lb/ton TN, SDR 0.181 TSS, P5: Prevented Volume 14,280 cf	47.1%	224,811.96	200,130.03	Difficult Run
	Sorrel Ridge Lane	11/10/2023	-77.334108	38.889493	Outfall Restoration	36.70	5.51	31.2	199	10,791	CBP USREP: P5 Prevented Volume 6932 cf, 0.36 lb/ton TP, 1.21 lb/ton TN	73.3%	2,880.33	7,910.48	Difficult Run
	Boehms Court	3/26/2024	-77.284452	38.994653	Outfall Restoration	53.90	17.30	36.6	309	86,201	CBP USREP: P5: Prevented Volume 57,918 cf. 0.41 lb/ton TP, 0.54 lb/ton TN	67.3%	28,154.53	58,046.91	Difficult Run
										24,280,136.75			14,466,509.39	9,813,627.37	

			Total
Difficult Run Total	6,069,784.63	3,685,951.33	9,755,735.96
% Credit for Baseline	100%	68%	
Difficult Run After Baseline	6,069,784.63	2,506,446.90	8,576,231.53
Vienna % per Cooperative Agreement	0.146	0.146	
Difficult Run Vienna Share	886,188.56	365,941.25	1,252,129.80

Accotink Creek Total	8,396,724.76	6,127,676.04	14,524,400.79
% Credit for Baseline	100%	24%	
Accotink Creek After Baseline	8,396,724.76	1,470,642.25	9,867,367.00
Vienna % per Cooperative Agreement	0.077	0.077	
Accotink Creek Vienna Share	646,547.81	113,239.45	759,787.26