County of Fairfax, Virginia

To protect and enrich the quality of life for the people, neighborhoods and diverse communities of Fairfax County

September 30, 2021

Ms. Anna M. Tuthill
Regional MS4 Coordinator-Inspector
Virginia Department of Environmental Quality, Northern Regional Office
13901 Crown Court
Woodbridge, VA 22193

Reference: 2021 Municipal Separate Storm Sewer System Program Plan and Annual Report for Virginia Stormwater Management Program Permit No. VA0088587

Dear Ms. Tuthill:

The 2021 Municipal Separate Storm Sewer System (MS4) Program Plan and Annual Report for Virginia Stormwater Management Program (VSMP) Permit No. VA0088587 is enclosed. As required by Part I.E.1 of the permit, this report covers the period from July 1, 2020, through June 30, 2021, and describes the continued activities performed to satisfy the county's permit requirements, as well as updates needed to satisfy new requirements. In order to facilitate tracking of the updated program plan elements and associated reporting requirements, the Annual Report and Program Plan have been combined into a single document that includes the permit language, the county's Program Plan, the permit reporting requirements and the county's Annual Report on each requirement.

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.

If you have any questions or require additional information regarding this report, please contact Heather Ambrose, MS4 Program Coordinator, Stormwater Planning Division at 703-324-5500.

Sincerely,

Christopher Herrington
Director

Enclosures: MS4 Program Plan and Annual Report for VSMP

cc: Eleanor Ku Codding, Deputy Director, Department of Public Works and Environmental Services (DPWES), Stormwater and Wastewater Division
Craig Carinci, Director, DPWES, Stormwater Planning Division

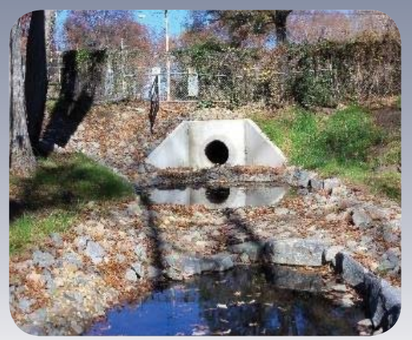
Department of Public Works and Environmental Services
Director's Office
12000 Government Center Parkway, Suite 448
Fairfax, VA 22035-0050
Phone: 703-324-5033, TTY 711, Fax: 703-653-7145
www.fairfaxcounty.gov/publicworks

Fairfax County, Virginia

2021 Municipal Separate Storm Sewer System (MS4) Program Plan and Annual Report

September 30, 2021

Reporting Period: July 1, 2020 through June 30, 2021



Permit No: VA0088587
Effective Date: April 1, 2015
Expiration Date: March 31, 2020
(Administratively Continued)

Photos on cover (from top left): Outfall Restoration; Stream Restoration; Inlet; Stormy the Raindrop; Secondary Containment; Erosion & Sediment Inspection; Stream Restoration.

(Photo Credit Fairfax County)

Report prepared and compiled by:

Stormwater Planning Division

Department of Public Works and Environmental Services

Fairfax County, Virginia 22035

703-324-5500, TTY 711

www.fairfaxcounty.gov/dpwes/stormwater

September 30, 2021

To request this information in an alternate format call 703-324-5500, TTY 711.

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Fairfax County, Virginia

2021 Municipal Separate Storm Sewer System (MS4) Program Plan and Annual Report

September 30, 2021

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Administratively Continued

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2021 MS4 Program Plan and Annual Report

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INTRODUCTION

The following Municipal Separate Storm Sewer System (MS4) combined Program Plan update and Annual Report is submitted to the Virginia Department of Environmental Quality (DEQ) in compliance with Fairfax County's Virginia Stormwater Management Program (VSMP) MS4 permit (VA0088587). The permit was reissued on April 1, 2015 and shifted the reporting period from a calendar year to a fiscal year reporting cycle. As required by Part I.E.1) of the permit, this report covers the period from July 1, 2020 through June 30, 2021 and describes the continued activities performed to satisfy the county's permit requirements, as well as updates needed to satisfy new requirements. The county is currently operating under an administrative continuance of the existing permit in anticipation of permit renewal. Program Plan modifications are identified by their due date in the Permit Year columns.

In order to facilitate tracking of the updated Program Plan elements and associated reporting requirements, the Annual Report and Program Plan have been combined into a single document that includes the permit language, the county's Program Plan, the permit reporting requirements and the county's Annual Report on each requirement. The combined MS4 Program Plan and Annual Report is presented as a table that can be navigated using the MS4 Action ID assigned to each reporting requirement. This approach has multiple benefits including ensuring that all permit requirements are addressed, facilitating update of the Program Plan in conjunction with each Annual Report, and simplifying regulatory review by including all of the information relevant to each requirement in one place. The table contains the following columns:

Column Heading	Content
MS4 Action ID:	This column follows the structure of Part I of the permit and assigns an ID to each permit requirement. In some cases, permit sections that include multiple requirements have been broken out into separate MS4 Action IDs for clarity.
Permit Requirement:	This column contains the language as it appears in each section of the permit. *Permit language is shown in italics.*
Responsible Party:	This column identifies the department, division or subdivision responsible for maintaining compliance with each permit requirement.
2021 Program Plan Elements:	This column describes the county's program for compliance with each permit requirement for the 2021 reporting period. Where the program description or supporting materials do not fit in the table, they are included as a numbered appendix beginning with the letter "P" for Program Plan.
Permit Year:	This column is a group of five smaller columns (one for each year of the permit) and is used to visually highlight specific due dates (in green) and to identify the annual timeline for implementation of individual actions (in blue). When an action is not implemented during a specific year, the column is shaded in gray.
Specific Reporting Requirement:	Like the "Permit Requirement" column, this column contains the language for each specific reporting requirement that appears in the permit. Where there is no specific reporting requirement, the column is shaded gray. *Permit language is shown in italics.*
2021 Annual Report:	This column contains a report on the activities performed to comply with each permit requirement. Where the reported activities or supporting materials do not fit in the table, they are included as a numbered appendix beginning with the letter "R" for Annual Report. Where reporting on an action is not required during the reporting period, the column is shaded in gray.

MS4 Action ID	Permit Requirement	Responsible Party	2021 Program Plan Elements (July 1, 2020 through June 30, 2021)	Due Date / Annual Timeline — Permit Year 1	2	3	4	5	Specific Reporting Requirement	2021 Annual Report (July 1, 2020 through June 30, 2021)
	A. DISCHARGES AUTHORIZED UNDER THIS STATE PERMIT									
	A.1. Authorized Discharges									
A.1.a.	*This state permit authorizes the discharge of stormwater from all existing and new municipal separate stormwater point source discharges to surface waters from the Municipal Separate Storm Sewer System (MS4) owned or operated by the Fairfax County in Virginia.*									
A.1.b.	*The following discharges, whether discharged separately or commingled with municipal stormwater, are also authorized by this state permit for discharge through the MS4:*									
A.1.b.1.	*Non-stormwater discharges and stormwater discharges associated with industrial activity (defined at 9 VAC25-31-10) that are authorized by a separate Virginia Pollutant Discharge Elimination System (VPDES) permit;*									
A.1.b.2.	*Discharges from construction activities that are regulated under the Virginia Stormwater Management Program (VSMP) (9 VAC25-870 et seq.) and authorized by a separate VSMP authority permit or state permit; and*									
A.1.b.3.	*The following non-stormwater discharges unless the State Water Control Board or the permittee determines the discharge to be a significant source of pollutants to surface waters:* *(a) water line flushing;* *(b) landscape irrigation;* *(c) diverted stream flows;* *(d) rising ground waters;* *(e) uncontaminated ground water infiltration (as defined at 40 CFR Part 35.2005(20));* *(f) uncontaminated pumped ground water;* *(g) discharges from potable water sources;* *(h) foundation drains;* *(i) air conditioning condensation;* *(j) irrigation water;* *(k) springs;* *(l) water from crawl space pumps;* *(m) footing drains;* *(n) lawn watering;* *(o) individual residential car washing;* *(p) flows from riparian habitats and wetlands;* *(q) dechlorinated swimming pool discharges;* *(r) street wash water;* *(s) discharges or flows from fire fighting activities; and* *(t) other activities generating discharges identified by the Department as not requiring VPDES authorization.*	SWPD	• Non-stormwater discharges are tracked as part of the Illicit Discharge and Improper Disposal program. • See MS4 Action ID B.2.e.1.	►	►	►	►	►		

MS4 Action ID	Permit Requirement	Responsible Party	2021 Program Plan Elements (July 1, 2020 through June 30, 2021)	Due Date / Annual Timeline — Permit Year 1	2	3	4	5	Specific Reporting Requirement	2021 Annual Report (July 1, 2020 through June 30, 2021)
A.1.b.4.	*Materials from a spill are not authorized unless the discharge of material resulting from a spill is necessary to prevent loss of life, personal injury, or severe property damage. The permittee shall take, or require the responsible party to take, all reasonable steps to minimize or prevent any adverse effect on human health or the environment in accordance with the permittee's program under Part I.B.2.f). (Spill Prevention and Response). This state permit does not transfer liability for a spill itself from the party(ies) responsible for the spill to the permittee nor relieve the party(ies) responsible for a spill from the reporting requirements of 40 CFR Part 117 and 40 CFR Part 302. The permittee is responsible for any reporting requirement listed under Part II.G of this state permit.*									
	A.2. Permittee Responsibilities									
A.2.	*This state permit establishes the specific requirements applicable to the permittee for the term of this state permit. The permittee is responsible for compliance with this state permit. The permittee shall implement and update the MS4 Program Plan (as set forth in Part I.B) to ensure compliance with this state permit. The Department has determined that implementation of the MS4 Program Plan reduces the discharge of pollutants to the maximum extent practicable. Where wasteloads have been allocated for pollutant(s) of concern in an approved Total Maximum Daily Load (TMDL), the permittee shall implement the special conditions as set forth in Part I.D of this state permit. Compliance with the requirements of this state permit shall also constitute adequate progress for this permit term towards complying with the assumptions and requirements of the applicable TMDL wasteload allocations such that the discharge does not cause or contribute to violations of the water quality standards.*									

MS4 Action ID	Permit Requirement	Responsible Party	2021 Program Plan Elements (July 1, 2020 through June 30, 2021)	Due Date / Annual Timeline — Permit Year 1	2	3	4	5	Specific Reporting Requirement	2021 Annual Report (July 1, 2020 through June 30, 2021)
A.2-1.	*The permittee shall clearly define the roles and responsibilities of each of the permittee's departments, divisions or subdivisions in maintaining permit compliance. If the permittee relies on another party to implement portions of the MS4 Program Plan, both parties must document the agreement in writing. The agreement shall be retained by the permittee with the MS4 Program Plan. Roles and responsibilities shall be updated as necessary. Where the permittee relies on another party to implement a portion of this state permit, responsibility for compliance with this state permit shall remain with the permittee.*	SWPD	• Current roles and responsibilities, and responsible agencies, are described in the "Responsible Party" and "2021 Program Plan Elements" columns of this Program Plan. See Appendix P1 for the current list of responsible parties, their acronyms and the program elements that they implement. • The county has written agreements with the following organizations to support implementation of portions of the MS4 Program Plan: ○ Northern Virginia Soil and Water Conservation District (NVSWCD) ○ Clean Fairfax Council ○ Northern Virginia Regional Commission (NVRC) Clean Water Partners ○ Fairfax County Park Authority (FCPA) ○ Fairfax County Public Schools (FCPS)	►	►	►	►	►	*Each annual report shall include a current list of roles and responsibilities.*	See the "Responsible Party" and "2021 Program Plan Elements" columns of this document, as well as Appendix P1, for the current list of responsible parties, their acronyms, and the program elements that they implement.
A.2-2.	*In the event the permittee is unable to meet conditions of this state permit due to circumstances beyond the permittee's control, a written explanation of the circumstances that prevented permit compliance shall be submitted to the Department in the annual report. Circumstances beyond the permittee's control may include abnormal climatic conditions; weather conditions that make certain requirements unsafe or impracticable; or unavoidable equipment failures caused by weather conditions or other conditions beyond the reasonable control of the permittee (operator error and failure to properly maintain equipment are not conditions beyond the control of the permittee). The failure to provide adequate program funding, staffing or equipment maintenance shall not be an acceptable explanation for failure to meet permit conditions. The Board will determine, at its sole discretion, whether the reported information will result in an enforcement action. In addition, the permittee must report noncompliance which may adversely affect surface waters or endanger public health in accordance with Part II.I.*	SWPD	If Fairfax County is unable to meet the conditions of this permit due to circumstances beyond its control, the county will provide a list of circumstances that prevented permit compliance.	►	►	►	►	►	*Each annual report shall include a list of those circumstances of non-compliance outside of the permittee's control.*	There were no circumstances of non-compliance beyond the county's control during the reporting period.
	A.3. Legal Authority									
A.3.	*The permittee shall maintain and utilize its legal authority authorized by the Commonwealth of Virginia to control discharges to and from the MS4 in the manner established by the specific requirements of this state permit. The legal authority shall enable the permittee to:*									

MS4 Action ID	Permit Requirement	Responsible Party	2021 Program Plan Elements (July 1, 2020 through June 30, 2021)	Due Date / Annual Timeline — Permit Year 1	2	3	4	5	Specific Reporting Requirement	2021 Annual Report (July 1, 2020 through June 30, 2021)
A.3.a.	*Control the contribution of pollutants to the MS4;*	LDS (124, 104) DPWES (124, 65, 109.1); FRD (62); HD (43.1, 46, 68.1, 69.1)	• The Stormwater Management Ordinance (Chapter 124), Erosion and Sediment Control Ordinance (Chapter 104), Fire Protection Ordinance (Chapter 62), Plumbing and Gas Provisions Ordinance (Chapter 65), Food and Food-Service Establishments Ordinance (Chapter 43.1), Health or Safety Menaces Ordinance (Chapter 46), Individual Sewage Disposal Facilities Ordinance (Chapter 68.1), Water Recreation Facilities Ordinance (Chapter 69.1), and Solid Waste Management Ordinance (Chapter 109.1) provide the authority to prohibit illicit discharges and connections, as well as illegal dumping. • These ordinances are available online at www.municode.com/library (search for Fairfax County) or at this weblink: Fairfax County - Code of Ordinances.	►	►	►	►	►		
A.3.b.	*Prohibit illicit discharges to the MS4;*	LDS (124, 104) DPWES (124, 65, 109.1); FRD (62); HD (43.1, 46, 68.1, 69.1)	• The following ordinances provide authority to prohibit illicit discharges and connections, as well as illegal dumping. The Stormwater Management Ordinance (Chapter 124), Erosion and Sediment Control Ordinance (Chapter 104), Fire Protection Ordinance(Chapter 62), Plumbing and Gas Provisions Ordinance(Chapter 65), Food and Food-Service Establishments Ordinance (Chapter 43.1), Health or Safety Menaces Ordinance (Chapter 46), Individual Sewage Disposal Facilities Ordinance (Chapter 68.1), Water Recreation Facilities Ordinance (Chapter 69.1), and Solid Waste Management Ordinance (Chapter 109.1). • These ordinances are available online at www.municode.com/library (search for Fairfax County) or at this weblink: Fairfax County - Code of Ordinances.	►	►	►	►	►		
A.3.c.	*Control the discharge of spills and the dumping or disposal of materials other than stormwater (e.g. industrial and commercial wastes, trash, used motor vehicle fluids, leaf litter, grass clippings, animal wastes, etc.) into the MS4;*	LDS (124, 104) DPWES (124, 65, 109.1); FRD (62); HD (43.1, 46, 68.1, 69.1)	• The Stormwater Management Ordinance (Chapter 124), Erosion and Sediment Control Ordinance (Chapter 104), Fire Protection Ordinance (Chapter 62), Plumbing and Gas Provisions Ordinance (Chapter 65), Food and Food-Service Establishments Ordinance (Chapter 43.1), Health or Safety Menaces Ordinance (Chapter 46), Individual Sewage Disposal Facilities Ordinance (Chapter 68.1), Water Recreation Facilities Ordinance (Chapter 69.1), and Solid Waste Management Ordinance (Chapter 109.1) provide the authority to control the discharge of spills and the dumping or disposal of materials other than stormwater into the MS4. • These ordinances are available online at www.municode.com/library (search for Fairfax County) or at this weblink: Fairfax County - Code of Ordinances.	►	►	►	►	►		

MS4 Action ID	Permit Requirement	Responsible Party	2021 Program Plan Elements (July 1, 2020 through June 30, 2021)	Due Date / Annual Timeline — Permit Year 1	2	3	4	5	Specific Reporting Requirement	2021 Annual Report (July 1, 2020 through June 30, 2021)
A.3.d.	*Require compliance with conditions in ordinances, permits, contracts, inter-jurisdictional agreements, or orders; and*	LDS (124, 104) DPWES (124, 65, 109.1); FRD (62); HD (43.1, 46, 68.1, 69.1)	The county has the authority to require compliance related to implementing the permit requirements, including but not limited to: • Conditions in ordinances (including permits and orders issued under ordinances): The county has authority as authorized by state law and as stated in local ordinances, including options for escalating enforcement steps as appropriate in the county's exercise of its enforcement discretion as the regulator of covered third party activities. Local enforcement authority includes: ○ Stormwater Management Ordinance (Chapter 124): see Article 8 – Violations and Penalties. ○ Erosion and Sediment Control Ordinance (Chapter 104): see § 104-1-12. - Penalties, Injunctions, and Other Legal Actions. ○ Fire Protection Ordinance(Chapter 62): see § 62-1-1. – Penalty: § 62-2-5. – Powers of arrest. ○ Plumbing and Gas Provisions Ordinance (Chapter 65): see Article 7. – Penalties. ○ Food and Food-Service Establishments Ordinance (Chapter 43.1): see Article 4 – Penalties; § 8-4 Inspection and Correction of Violations. ○ Health or Safety Menaces Ordinance (Chapter 46): see § 46-1-3 – Abatement of health or safety menaces. ○ Individual Sewage Disposal Facilities Ordinance (Chapter 68.1): see § 68.1-1-3. – Penalties. ○ Water Recreation Facilities Ordinance (Chapter 69.1): see § 69.1-1-22. – Penalties. ○ Solid Waste Management Ordinance(Chapter 109.1): see Article 9 – Enforcement. • Contracts and inter-jurisdictional agreements: To the extent authorized by state law, the county has authority to enter into and carry out contracts and, in event of breach of any contract by a counterparty, to enforce such contracts according to the provisions thereof and by legal action for breach of contract in the county's discretion.	►	►	►	►	►		

MS4 Action ID	Permit Requirement	Responsible Party	2021 Program Plan Elements (July 1, 2020 through June 30, 2021)	Due Date / Annual Timeline — Permit Year 1	2	3	4	5	Specific Reporting Requirement	2021 Annual Report (July 1, 2020 through June 30, 2021)
A.3.e.	*Carry out all inspections, surveillance, and monitoring procedures necessary to determine compliance and noncompliance with permit conditions including the prohibition on illicit discharges to the MS4.*	LDS (124, 104) DPWES (124, 65, 109.1); FRD (62); HD (43.1, 46, 68.1, 69.1)	The county has authority to conduct inspections/monitoring etc. related to implementing the permit requirements, including but not limited to: • Stormwater Management Ordinance (Chapter 124): see § 124-1-8. – Right of Entry; § 124-2-5. – Monitoring, Reports, Investigations, and Inspections: § 124-9-4 – Standards for Inspection of Industrial and Commercial Property Discharging to the county MS4. • Erosion and Sediment Control Ordinance (Chapter 104): see § 104-1-5. – Monitoring and inspections. • Fire Protection Ordinance(Chapter 62): see § 62-2-5 Powers of arrest (addresses investigation of environmental crimes). • Food and Food-Service Establishments Ordinance (Chapter 43.1): see § 8-4 Inspection and Correction of Violations.; § 8-402.11. – Allowed at Reasonable Times after Due Notice. • Health or Safety Menaces Ordinance (Chapter 46): see § 46-1-2 – Inspection for health or safety menaces. • Individual Sewage Disposal Facilities Ordinance (Chapter 68.1): see § 68.1-2-3. – Inspection of individual sewage disposal systems by Administrative Authority. • Water Recreation Facilities Ordinance (Chapter 69.1): see § 69.1-1-22. – Inspections.	►	►	►	►	►		
A.3-1.	*The permittee shall review and update its ordinances and other legal authorities such as permits, orders, contracts, and inter-jurisdictional agreements as necessary to continue providing adequate legal authority to control discharges to and from the MS4.*	SWPD	Fairfax County's current ordinances and other legal authorities provide adequate legal authority to control discharges to and from the MS4. Ordinances and other legal authorities will be reviewed annually as part of the Program Plan review.	►	►	►	►	►		
	A.4. MS4 Program Resources									
A.4.	*The permittee shall submit to the Department a copy of each fiscal year's budget including its proposed capital and operation and maintenance expenditures necessary to accomplish the activities required by this state permit. The permittee shall describe its method of funding the stormwater program with the copy of the fiscal year budget.*	SWPD	The fiscal year's budget will be provided as required.	►	►	►	►	►	*A copy of the fiscal year's budget including its proposed capital and operation and maintenance expenditures necessary to accomplish the activities required by this state permit shall be submitted with each annual report.*	In FY 2006 the Fairfax County Board of Supervisors dedicated the value of one penny of the real estate tax, or approximately $20 million annually, to stormwater capital projects. As part of the FY 2010 Adopted Budget Plan, a new service district was created to support the stormwater management program, as authorized by §15.2-2400 *et seq.* of the Code of Virginia. As part of the FY 2021 budget, the Board of Supervisors did not change the stormwater service district levy, it will remain $0.0400 (quarter cent) per $100 of assessed real estate value. The stormwater service district will generate approximately $85 million in FY 2021 that will be dedicated to funding the entire stormwater management program. This includes both staff operating requirements and stormwater capital projects. A copy of the FY 2022 Fairfax County Adopted Budget Plan (Vol. 2), Stormwater Services Budget has been included in Appendix R1 and is available online at: https://www.fairfaxcounty.gov/budget/sites/budget/files/assets/documents/fy2022/adopted/volume2/40100.pdf

MS4 Action ID	Permit Requirement	Responsible Party	2021 Program Plan Elements (July 1, 2020 through June 30, 2021)	Due Date / Annual Timeline — Permit Year 1	2	3	4	5	Specific Reporting Requirement	2021 Annual Report (July 1, 2020 through June 30, 2021)
	A.5. Permit Maintenance Fees									
A.5.	*Permit maintenance fees shall be paid in accordance with Part XIII of the VSMP regulations (9 VAC 25-870-700 et seq.).*	SWPD	The permit maintenance fee will be paid as required.	►	►	►	►	►	*A statement regarding payment of the applicable MS4 permit maintenance fee, including check date and check number shall be included with each annual report. Note: Please do not include copies of checks or other bank records.*	Fairfax County's MS4 permit maintenance fee was paid with check number 2000464930 dated August 25, 2020.
	A.6. MS4 Program Plan									
A.6.	*The permittee shall maintain, implement and enforce an MS4 Program Plan accurately documenting the MS4 Program including all additions, changes and modifications. For the purposes of this state permit, the MS4 Program Plan is considered a single document, but may actually consist of separate documents (e.g., dry weather screening plans, wet weather monitoring plans, TMDL Action Plans, annual reports). Policies, ordinances, strategies, checklists, watershed plans and other documents may be incorporated by reference provided the latest revision date is included in the MS4 Program Plan and all documents are available upon request. Specific reference shall be made to any ordinance more stringent than the Virginia Stormwater Management Act (§62.1-44.15:24 et seq) and VSMP regulations (9 VAC 25-870 et seq.), the Virginia Erosion and Sediment Control Law (§ 62.1-44.15:51 et seq.) and Regulations (9 VAC 25-840 et seq.) and the Chesapeake Bay Preservation Act (§ 62.1-44.15:67 et seq.) and Chesapeake Bay Preservation Area Designation and Management Regulations (9 VAC 25-830 et seq). The MS4 Program Plan is an enforceable part of this state permit.* *Updates to the MS4 program plan shall be submitted to the Department for review and approval in accordance with the due dates established by this state permit. Updates to the MS4 Program Plan shall become effective and enforceable upon written approval from the Department.* *The most recent MS4 Program Plan shall be posted on the permittee's website and provided in another location easily accessible to the public.*	SWPD	• This document is Fairfax County's MS4 Program Plan, which has been developed to document the county's MS4 Program as it exists at the end of the second full year of this permit cycle. • The county reserves its full discretion to modify this plan in accordance with applicable laws (including Virginia Code Titles 15.2 and 62.1), applicable regulations, and the terms of this permit. • After submission to DEQ with the county's 2021 Annual Report, the MS4 Program Plan will be posted to the county's website. • A hard copy of the MS4 Program Plan is available in the Virginia Room located on the second floor of the City of Fairfax Regional Library, 10360 North St, Fairfax, VA 22030. • See MS4 Action ID B.2.j.4	►	►	►	►	►	• *Utilizing the annual report due March 31, 2015 as a baseline, the permittee's annual report due October 1, 2016 under this state permit shall include the necessary updates to describe implementation of this MS4 Program Plan and meet the conditions described in this section.* • .	Fairfax County's 2021 MS4 Program Plan is contained in the "Program Plan Elements" column of this document and is available to the public on the Fairfax County website at the following link: https://www.fairfaxcounty.gov/publicworks/stormwater/ms4-program-plan-and-annual-reports • A hardcopy of the 2021 MS4 Program Plan is located in the Virginia Room located on the second floor of the City of Fairfax Regional Library, 10360 North St, Fairfax, VA 22030. • The county submitted an updated MS4 Program Plan (Reapplication Program Plan) on October 1, 2019 that included benchmarks and milestones for the next permit cycle as required in Part II.M of the permit. This Reapplication Program Plan included suggested changes to permit language for the next permit cycle and should be reviewed as part of permit reissuance.
	A.7. MS4 Program Review and Updates									
A.7.	*MS4 Program Review: The permittee will review the current MS4 Program Plan annually, in conjunction with the preparation of the annual report required under Part I.E of this state permit.*	SWPD	The MS4 Program Plan will be reviewed annually and updated as needed.	►	►	►	►	►	*All modifications and proposed modifications shall be reported in accordance with this section of the permit.*	Fairfax County has reviewed the MS4 Program Plan in accordance with the requirements of the renewed permit. This review resulted in the following changes: • Updated the Wet Weather Monitoring SOP.
A.7.a.	***MS4 Program Updates and Modifications:***									

MS4 Action ID	Permit Requirement	Responsible Party	2021 Program Plan Elements (July 1, 2020 through June 30, 2021)	Due Date / Annual Timeline — Permit Year 1	2	3	4	5	Specific Reporting Requirement	2021 Annual Report (July 1, 2020 through June 30, 2021)
	Modifications to the MS4 Program Plan are expected throughout the life of this state permit as part of the iterative process to reduce pollutant loading and protect water quality. As such, modifications made in accordance with this state permit as a result of the iterative process do not require modification of this state permit unless the Department determines the changes meet the criteria referenced in 9 VAC 25-870-630 or 9 VAC 25-870-650. *Updates and modifications to the MS4 Program Plan may be made during the life of the permit in accordance with the following procedures:* *1) Adding (but not eliminating or replacing) components, controls, or requirements to the MS4 Program Plan may be made by the permittee at any time. Additions shall be reported as part of the annual report.* *2) Updates and modifications to specific standards and specifications, schedules, operating procedures, ordinances, manuals, checklists and other documents routinely evaluated and modified are authorized under this state permit provided that the updates and modifications are performed in a manner (i) that is consistent with the conditions of this state permit, (ii) that ensure public notice and participation requirements established in this state permit are followed, and (iii) that the updates and modifications are documented in the annual report.* *3) Replacing, or eliminating without replacement, any ineffective or infeasible strategies, policies and Best Management Practices (BMPs) specifically identified in this state permit with alternate strategies, policies and BMPs may be requested at any time. Such requests shall include the following:* *(a) An analysis of how and/or why the BMPs, strategies, or policies are ineffective or infeasible including information on whether the BMPs, strategies, or policies are cost prohibitive;* *(b) Expectations on the effectiveness of the replacement BMPs, strategies, or policies;* *(c) An analysis of how the replacement BMPs are expected to achieve the goals of the BMPs to be replaced;* *(d) A schedule for implementing the replacement BMPs, strategies and policies; and* *(e) An analysis of how the replacement strategies and policies are expected to improve the permittee's ability to meet the goals of the strategies and policies being replaced.*									

MS4 Action ID	Permit Requirement	Responsible Party	2021 Program Plan Elements (July 1, 2020 through June 30, 2021)	Due Date / Annual Timeline — Permit Year 1	2	3	4	5	Specific Reporting Requirement	2021 Annual Report (July 1, 2020 through June 30, 2021)
	Requests or notifications shall be made in writing to the Department and signed in accordance with 9 VAC 25-870-370 of the VSMP regulations. Modification to the MS4 Program Plan shall become effective and enforceable upon written approval from the Department. Major modifications to the MS4 Program Plan as defined in 9 VAC 25-870-10 may require that the permit be reopened and modified pursuant to 9 VAC 25-870-630.									
A.7.b.	***MS4 Program Updates Requested by the Department of Environmental Quality:*** *In a manner and following procedures in accordance with the Virginia Administrative Processes Act, the VSMP regulations and other applicable State laws, statutes and regulations, the Department may request changes to the MS4 Program Plan to assure compliance with the statutory requirements of the Virginia Stormwater Management Act and associated regulations and to:* *1) Address impacts on receiving water quality caused by discharges from the MS4;* *2) Include more stringent requirements necessary to comply with new State or Federal statutory or regulatory requirements; or* *3) Include such other conditions necessary to comply with State or Federal statutory or regulatory requirements.* *Proposed changes requested by the Department shall be made in writing and set forth the basis for and objective of the modification as well as the proposed time schedule for the permittee to develop and implement the modification. The permittee may propose alternative program modifications and/or time schedules to meet the objective of the requested modification, but any such modifications are at the discretion of the Department.*									
	B. STORMWATER MANAGEMENT *The following subparts describe the requirements for the permittee to implement in its MS4 Program during this state permit term:*									
	B.1. Planning									

MS4 Action ID	Permit Requirement	Responsible Party	2021 Program Plan Elements (July 1, 2020 through June 30, 2021)	Due Date / Annual Timeline — Permit Year 1	2	3	4	5	Specific Reporting Requirement	2021 Annual Report (July 1, 2020 through June 30, 2021)
B.1-1.	*No later than 12-months after the effective date of this state permit, the permittee shall submit to the Department a summary of potential stormwater management projects which may be selected from the permittee's watershed management plans to be completed during the term of the permit. Projects addressing stormwater quantity may be included if there is a water quality benefit to the project. At a minimum, the permittee shall address the following for each project in the summary: type of project or BMP, number of acres which the BMP treats, impervious and pervious acreage treated by the potential project, condition of the downstream channel, amount of total pollutant reduction, feasibility for implementation, and estimated cost of implementation. The summary shall include a prioritized list of the identified projects for consideration of implementation.*	SWPD	The summary of potential stormwater management projects which may be selected from the permittee's watershed management plans to be completed during the term of the permit is provided in Appendix P2.	**March 31, 2016 ★**					Although not a specific reporting requirement in the permit, a summary of potential stormwater management projects was submitted to the Department no later than 12 months after the effective date of this state permit.	.
B.1-2.	*The permittee shall continue to seek public comment in development of the plans. A copy of the completed plans shall be placed on the permittee's website no later than 30 days after it is submitted to the Department.*	SWPD	All of the watershed management plans have been completed and links to the completed plans are provided on the county's website: https://www.fairfaxcounty.gov/publicworks/stormwater/watersheds	**March 31, 2016 ★**	►	►	►	►	*The permittee shall provide the Department a web link to the plans no later than 12 months after the effective date of this state permit and with each annual report.*	The following web link to the county's watershed management plans was submitted to DEQ on March 30, 2016: https://www.fairfaxcounty.gov/publicworks/stormwater/watersheds
	B.2. MS4 Program Implementation									
	B.2.a. Construction Site Runoff and Post Construction Runoff from Areas of New Development and Development on Prior Developed Lands									
B.2.a.1.	*The permittee shall implement a local erosion and sediment control program consistent with the Virginia Erosion and Sediment Control Law § 62.1-44.15:51 of the Code of Virginia and Virginia Erosion and Sediment Control Regulations 9 VAC 25-840 et seq. and a stormwater management program consistent with the Virginia Stormwater Management Act § 62.1-44.15:24 of the Code of Virginia and Virginia Stormwater Management Program Regulations 9 VAC 25-870 et seq.*	LDS	• The county continues to implement and enforce Fairfax County Code Chapter 104, Erosion and Sediment Control, and Chapter 124, Stormwater Management Ordinance. The county's erosion and sediment control program and stormwater management program have been approved by DEQ as consistent with the Virginia Erosion and Sediment Control Law, the Virginia Stormwater Management Act, and their attendant regulations. • The county uses 2,500 square feet, which is the threshold for land disturbing activities to be regulated under the county's erosion and sediment control program, as the threshold for reporting the number of regulated land disturbing activities and the total number of acres disturbed.	►	►	►	►	►	• *Each annual report shall contain the number of regulated land disturbing activities approved and the total number of acres disturbed.* • *Each annual report shall contain the number of land disturbing activity inspections conducted and the number and type of each enforcement action taken.*	Number of regulated land disturbing activities approved: 846 Total number of acres disturbed: 764 Number of VESCP inspections conducted: 21,655 Number of VSMP inspections conducted: 394 Number of VESCP Notices of Violation Issued: 180 Number of VSMP Notices of Violation Issued: 8
B.2.a.2.	*The permittee shall identify in the MS4 Program Plan all legal authorities for erosion and sediment control and stormwater management that are more stringent than those required under 9 VAC 25-840 et seq. and/or 9 VAC 25-870 et seq. that have been adopted in accordance with § 62.1-44.15:65 and/or § 62.1-44.15:33 of the Code of Virginia.*	LDS	The county has identified current county requirements that are more stringent than state law/regulations in an Erosion and Sediment Control Ordinance Stringency Table and a Stormwater Management Ordinance Stringency Table (see Appendix P3 and P4).	►	►	►	►	►	*Each annual report shall include a summary of actions taken by the permittee to implement Part I.B.2.a)1) and 2) of this state permit.*	Fairfax County has implemented a local Virginia E&S Control Program (VESCP) and a local Virginia Stormwater Management Program (VSMP) consistent with the applicable state regulations. The VESCP and VSMP programs are fully approved by DEQ and are implemented by the Department of Land Development Services (LDS).

MS4 Action ID	Permit Requirement	Responsible Party	2021 Program Plan Elements (July 1, 2020 through June 30, 2021)	Due Date / Annual Timeline (Permit Year 1)	Due Date / Annual Timeline (Permit Year 2)	Due Date / Annual Timeline (Permit Year 3)	Due Date / Annual Timeline (Permit Year 4)	Due Date / Annual Timeline (Permit Year 5)	Specific Reporting Requirement	2021 Annual Report (July 1, 2020 through June 30, 2021)
B.2.a-a.	See MS4 Action ID B.2.h.2.a.1.	MSMD	See MS4 Action ID B.2.h.2.a.1.		October 1, 2016 ★				*The annual report due October 1, 2016 shall include the permittee's strategy to address maintenance of stormwater management controls that are designed to treat stormwater runoff solely from the individual residential lot on which they are located.*	.
B.2.a-b.	*Part I.D.1)(i) of the permit requires inclusion in the Chesapeake Bay TMDL Action Plan of a list of future projects that qualify as grandfathered in accordance with 9 VAC 25-870-48.*	LDS	The county's list of known land disturbing projects that qualify under the 'Grandfathering' provision of the VSMP regulations found at 9VAC25-870-48 were submitted with the 2016 Annual Report.		October 1, 2016 ★				*The annual report due October 1, 2016 shall include a list of all known land disturbing projects that qualify under the 'Grandfathering' provision of the VSMP regulations found at 9 VAC 25-870-48.*	
	B.2.b. Retrofitting on Prior Developed Lands									
B.2.b.	*From the list of stormwater management projects included in the analysis required in Part I.B.1, the permittee shall complete at least thirty (30) projects no later than the expiration date of this state permit. Projects implemented to meet the requirements of Part I.D of this state permit (TMDL Action Plan and Implementation for the Chesapeake Bay Special Condition or TMDL Action Plans other than the Chesapeake Bay TMDL) may be used to meet the requirements of this special condition.* *For retrofit projects that do not serve to meet the requirements of Part I.D, the permittee shall submit a summary of projects implemented during the reporting period with each annual report including type of land use being retrofitted, retrofit performed, completion date or anticipated completion date, total acreage retrofitted, total impervious and pervious acreage, and location by latitude and longitude (in decimal degrees).*	SWPD	• The county will implement at least 30 projects from the list of projects required in Part I.B.1 no later than the expiration date of this permit. • Stormwater retrofit projects are implemented to restore streams and provide stormwater management through the construction of a range of practices from onsite green infrastructure to regional detention ponds. Retrofits to existing stormwater management facilities are also implemented to improve water quality. These can include the use of shallow wetland marshes to enhance nutrient uptake and provide an increase in water absorption and transpiration. A secondary benefit of wetland marshes and naturally vegetated pond floors is the creation of habitat for wildlife.	►	►	►	►	March 31, 2020 ★	*Each annual report shall include a status update for those projects for which implementation began during the reporting period.*	• Fairfax County reported completion of 30 projects from the list of projects submitted in compliance with Part I.B.1 of the permit during FY18. • All projects implemented serve to meet the requirements of Part I.D. of the permit.
	B.2.c. Roadways									
B.2.c.	*Streets, roads, and parking lots maintained by the permittee shall continue to be operated and maintained in a manner to minimize discharge of pollutants, including those pollutants related to deicing or sanding activities.*	MSMD	The county meets this requirement through implementation of the actions described below.							

MS4 Action ID	Permit Requirement	Responsible Party	2021 Program Plan Elements (July 1, 2020 through June 30, 2021)	Due Date / Annual Timeline (Permit Year 1	2	3	4	5)	Specific Reporting Requirement	2021 Annual Report (July 1, 2020 through June 30, 2021)
B.2.c.1.	*No later than 12-months after the effective date of this state permit, the permittee shall develop and maintain an accurate list of permittee maintained roads, streets, and parking lots that includes the street name, the miles of roadway not treated by BMPs, and miles of roadway treated with BMPs.*	MSMD	• The majority of public roads in the county (interstate, primary, secondary, and residential) are maintained and operated by the Virginia Department of Transportation (VDOT), which is covered by a separate Phase II MS4 permit. Fairfax County is responsible for maintaining several miles of discontinuous road segments, many of which are unpaved. The county's street maintenance program is an interim program designed to provide essential maintenance, pending acceptance of the road segment into Virginia's Secondary Road System. • The county currently operates and maintains parking lots associated with county facilities (such as government centers, libraries, fire stations, police stations, health centers, bus transit facilities, park and ride lots, commuter rail stations, public housing facilities, and staffed park locations). • Fairfax County maintains a list of permittee maintained roads, streets and parking lots that complies with the permit requirements.	**March 31, 2016 ★**	►	►	►	►		
B.2.c.2.	*No later than 36-months after the effective date of this state permit, the permittee shall develop and implement written protocols for permittee maintained road, street, and parking lot maintenance, equipment maintenance and material storage designed to minimize pollutant discharge.*	MSMD	The county will complete the development of appropriate SOPs by March 31, 2018.			**March 31, 2018 ★**	►	►	*The permittee shall include a copy of the written protocols identified in Part I.B.2.c)(2) with the annual report due October 1, 2018.*	During FY18, the County developed Outdoor Material Storage; Parking Lot and Street Sweeping; Roadway and Parking Lot Construction and Maintenance; and Vehicle and Equipment Repair and Maintenance Procedures as required by the permit. The procedures can be found in Appendices P5-P8.
B.2.c.3.	*Materials utilized for deicing and sanding activities shall remain covered from precipitation until application.*	MSMD	Deicing materials are stored in bulk in large, covered bins at all facilities operated by MSMD , the FCPA mobile crew storage facility, FCPS central bulk storage facility and the I-95 landfill. For all county storage sites, sand and deicing materials remain covered unless being loaded. After loading, any excess material is swept or shoveled back into the storage pile or container and covered.	►	►	►	►	►		
B.2.c.4.	*The permittee shall not apply any deicing agent containing urea or other forms of nitrogen or phosphorus to parking lots, roadways, and sidewalks or other paved surfaces.*	MSMD	• Fairfax County currently uses sand as an abrasive and calcium chloride or rock salt for deicing roadways. The county has changed from calcium chloride to magnesium chloride for deicing walkways; however, this change is not feasible for roadways where public safety is the first priority. • Fairfax County does not apply deicing agents containing urea or other forms of nitrogen or phosphorus to parking lots, roadways, and sidewalks or other paved surfaces.	►	►	►	►	►		
	B.2.d. Pesticide, Herbicide, and Fertilizer Application									
B.2.d.	*The permittee shall continue to control the discharge of pollutants related to the storage and application of pesticides, herbicides, and fertilizers applied to permittee rights of way, parks, and other permittee property, as follows:*	SWPD	The county meets this requirement through implementation of the actions described below.							

MS4 Action ID	Permit Requirement	Responsible Party	2021 Program Plan Elements (July 1, 2020 through June 30, 2021)	Due Date / Annual Timeline — Permit Year 1	2	3	4	5	Specific Reporting Requirement	2021 Annual Report (July 1, 2020 through June 30, 2021)
B.2.d.1.	*The permittee shall develop and implement turf and landscape nutrient management plans that have been developed by a certified nutrient management planner in accordance with § 10.1-104.2 of the Code of Virginia on all lands owned or operated by the permittee where nutrients are applied to a contiguous area greater than one acre in accordance with the following schedule:*									
B.2.d.1.a.	*No later than 12-months after the effective date of this state permit the permittee shall identify all permittee lands where nutrients are applied to a contiguous area of more than one acre. A latitude and longitude shall be provided for each such piece of permittee land.*	SWPD	County staff has identified all county lands where nutrients are applied to a contiguous area of more than one acre. A latitude and longitude have been provided for each area.	**March 31, 2016 ★**	►	►	►	►	*The report due October 1, 2016 shall contain a list of all permittee lands and applicable acreage on which nutrients are applied to more than one contiguous acre.*	
B.2.d.1.b.	*The permittee shall develop and implement turf and landscape nutrient management plans on all permittee lands where nutrients are applied to a contiguous area of more than one acre. The following measurable goals are established for the development and implementation of turf and landscape nutrient management plans.*	SWPD	• County staff has started the development and implementation of turf and landscape nutrient management plans for county lands where nutrients are applied to a contiguous area of more than one acre – see MS4 Action ID B.2.d.1.a. • The plans will be developed to meet the schedule outlined in MS4 Action IDs B.2.d.1.b.1-3.	►	►	►	►	**March 31, 2020 ★**	*Each annual report submitted after October 1, 2016 shall report on compliance with the turf and landscape nutrient management plan implementation schedule and include a list of the permittee's properties for which turf and landscape nutrient management plans have been implemented during the reporting year and the cumulative total of acreage under turf and landscape nutrient management plans.*	• Fairfax County has developed nutrient management plans for 100% of the lands where nutrients are applied to a contiguous area of more than one acre. • See Appendix R2 for the full list of county land requiring nutrient management plans and the status of nutrient management plan implementation.
B.2.d.1.b.1.	*No later than 24-months after the effective date of this state permit, not less than 15% of all identified acres will be covered by turf and landscape nutrient management plans.*	SWPD	See MS4 Action ID B.2.d.1.b.	►	**March 31, 2017 ★**				See MS4 Action ID B.2.d.1.b.	
B.2.d.1.b.2.	*No later than 36-months after the effective date of this state permit, not less than 40% of all identified acres will be covered by turf and landscape nutrient management plans.*	SWPD	See MS4 Action ID B.2.d.1.b.	►	►	**March 31, 2018 ★**			See MS4 Action ID B.2.d.1.b.	

MS4 Action ID	Permit Requirement	Responsible Party	2021 Program Plan Elements (July 1, 2020 through June 30, 2021)	Due Date / Annual Timeline (Permit Year) 1	2	3	4	5	Specific Reporting Requirement	2021 Annual Report (July 1, 2020 through June 30, 2021)
B.2.d.1.b.3.	*No later than 48-months after the effective date of this state permit, not less than 75% of all identified acres will be covered by turf and landscape nutrient management plans.*	SWPD	See MS4 Action ID B.2.d.1.b.	►	►	►	**March 31, 2019 ★**		See MS4 Action ID B.2.d.1.b.	
B.2.d.1.c.	*The permittee shall annually track the following:*	SWPD	• The county will track the information described in MS4 Action IDs B.2.d.1.c.1-3. • This information will be used for Specific Reporting Requirements for MS4 Action IDs B.2.d.1.a. and B.2.d.1.b.	►	►	►	►	►	See MS4 Action IDs B.2.d.1.a. and B.2.d.1.b.	
B.2.d.1.c.1.	*The total acreage of permittee lands upon which nutrients are applied and controlled using general county guidelines or standard operating procedures;*	SWPD	County staff will track the total acreage where nutrients are applied on identified county lands with a contiguous area greater than one acre.	►	►	►	►	►	See MS4 Action IDs B.2.d.1.a. and B.2.d.1.b.	
B.2.d.1.c.2.	*The acreage of permittee lands where turf and landscape nutrient management plans are required; and*	SWPD	County staff will track the acreage where turf and landscape nutrient management plans are required.	►	►	►	►	►	See MS4 Action IDs B.2.d.1.a. and B.2.d.1.b.	
B.2.d.1.c.3.	*The acreage of permittee lands covered by turf and landscape nutrient management plans that have been implemented.*	SWPD	County staff will track the acreage of county lands covered by turf and landscape nutrient management plans.	►	►	►	►	►	See MS4 Action IDs B.2.d.1.a. and B.2.d.1.b.	
B.2.d.2.	*The permittee shall continue to employ good housekeeping/pollution prevention measures in the application, storage, transport and disposal of pesticides, herbicides and fertilizers.*	SWPD	• All pesticide and herbicide applications are performed by certified technicians. • The county maintains general guidelines and procedures to be followed in the application, storage, transport and disposal of pesticides, herbicides and fertilizers. • County personnel and private contractors follow the Virginia Department of Conservation and Recreation's nutrient management training and certification and the Virginia Department of Agriculture's guidelines for certification and training of pesticide applicators.	►	►	►	►	►		
B.2.d.3.	*The permittee may regulate the use, application, or storage of fertilizers pursuant to §3.2-3602 of the Code of Virginia.*	SWPD	No additional local fertilizer requirements are in place at this time beyond state requirements.	►	►	►	►	►		
B.2.d.4.	*The permittee shall track the acreage of permittee lands managed under Integrated Pest Management Plans.*	SWPD	Fairfax County tracks the acreage of county lands managed under Integrated Pest Management Plans.	►	►	►	►	►	*Each annual report shall include the number of acres managed under Integrated Pest Management Plans.*	Fairfax County has 291 acres managed under Integrated Pest Management Plans. - Green Springs Garden manages 31 acres of IPMs - Laurel Hill manages 260 acres of IPMs
	B.2.e. Illicit Discharges and Improper Disposal									
B.2.e.	*Discharges to the MS4 not authorized by this state permit shall be effectively prohibited.*	FRD; DPWES; HD	The county will continue to implement and enforce Fairfax County Fire Prevention Ordinance (Chapter 62), Stormwater Management Ordinance (Chapter 124), Food and Food-Service Establishments Ordinance (Chapter 43.1), Individual Sewage Disposal Facilities Ordinance (Chapter 68.1), Water Recreation Facilities Ordinance (Chapter 69.1), Sanitary Sewers and Sewage Disposal Ordinance (Chapter 67.1), and Solid Waste Management Ordinance (Chapter 109). The county will update these authorities as needed and to the extent allowed by state enabling authority.	►	►	►	►	►		

MS4 Action ID	Permit Requirement	Responsible Party	2021 Program Plan Elements (July 1, 2020 through June 30, 2021)	Due Date / Annual Timeline — Permit Year 1	2	3	4	5	Specific Reporting Requirement	2021 Annual Report (July 1, 2020 through June 30, 2021)
B.2.e.1.	*In accordance with Part I.A.1.b), certain non-stormwater discharges to the MS4 need not be addressed as illicit discharges or improper disposal. The MS4 Program Plan shall identify any non-stormwater discharges listed under Part I.A.1.b), where the permittee has imposed any conditions on the discharges to the MS4. The permittee shall prohibit, on a case-by-case basis, any individual non-stormwater discharge (or class of non-stormwater discharges) otherwise allowed under this paragraph that is determined to be contributing significant amounts of pollutants to the MS4.*	SWPD	• The county has not imposed any conditions on non-stormwater discharges to the MS4 that are authorized under Part I.A.1.b) of the permit. • The county will prohibit on a case-by-case basis or by class any non-stormwater discharge otherwise allowed under the permit that the county determines to be contributing significant amounts of pollutants to the MS4 based on factual findings from an analysis of relevant data and that the county determines are necessary to protect water quality.	►	►	►	►	►		
B.2.e.2.	*The permittee shall continue implementing a sanitary sewer inspection program to minimize the exfiltration from the sanitary system to the MS4.* *The permittee shall inspect a minimum of 750,000 linear feet of sanitary sewer during this permit cycle.*	WCD	• The county will continue to implement the Sanitary Sewer Infiltration Abatement Program. • A minimum of 750,000 linear feet of sanitary sewer will be inspected during this permit cycle.	►	►	►	►	►	*Each annual report shall include the amount of linear feet of sanitary sewer inspected during the reporting year.*	Fairfax County inspected 923,292 linear feet of existing sanitary sewers during the reporting year.
B.2.e.3.	*The permittee shall continue to implement a program to reduce the discharge of floatables (e.g. litter and other human-generated solid refuse) in accordance with Part I.C.3.*	SWPD; MSMD	The county will continue to implement a program to reduce the discharge of floatables consisting of the following two elements: • The county removes floatables and other litter from county-operated stormwater management facilities. • The county has a memorandum of understanding with the Clean Fairfax Council to implement a litter control and recycling education program (see MS4 Action ID B.2.j.1.f.) and to monitor the discharge of floatables from the MS4 (see MS4 Action ID C.3.a.)	►	►	►	►	►		
B.2.e.4.	*The permittee shall prohibit the dumping or disposal of used motor vehicle fluids, household hazardous wastes, sanitary sewage, grass clippings, leaf litter, and animal wastes into the MS4. The permittee shall ensure the implementation of programs to collect used motor vehicle fluids (such as oil and antifreeze) for recycling, reuse, or proper disposal and to collect household hazardous waste materials (including paint, solvents, pesticides, herbicides, and other hazardous materials) for recycling, reuse, or proper disposal. Such programs shall be readily available to all private residents and shall be publicized and promoted on a regular basis not less than twice per year.*	DSWCR	• The county will continue to implement and enforce the county Fire Prevention Ordinance (Chapter 62), Stormwater Management Ordinance (Chapter 124), Sanitary Sewers and Sewage Disposal Ordinance (Chapter 67.1), and Solid Waste Management Ordinance (Chapter 109). The county will review these authorities and update as needed and to the extent allowed by state enabling authority. • The county will continue to implement a program that collects used motor vehicle fluids and household hazardous waste (HHW) materials from private residents for recycling, reuse, or proper disposal. The program will be publicized and promoted on the county's website and through other means (press releases, newspaper advertising, etc.) at least twice per year. • See MS4 Action ID B.2.j.a.d for information on promotion of the county's Household Hazardous Waste Program.	►	►	►	►	►		

MS4 Action ID	Permit Requirement	Responsible Party	2021 Program Plan Elements (July 1, 2020 through June 30, 2021)	Due Date / Annual Timeline — Permit Year 1	2	3	4	5	Specific Reporting Requirement	2021 Annual Report (July 1, 2020 through June 30, 2021)
B.2.e.5.	*The permittee shall continue to implement a program to locate and eliminate illicit discharges and improper disposal into the MS4. This program shall include dry weather screening activities to locate portions of the MS4 with suspected illicit discharges and improper disposal, as described in Part I.B.2.l)(1) of this state permit.*	SWPD	• The county will continue to implement its dry weather screening program as described in MS4 Action ID B.2.l.1.a. • The county will continue to respond to reports of suspected illicit discharges and improper disposal (IDID). Initial IDID reports document what is known about the suspected IDID and help identify the party responsible for addressing the discharge. If a significant pollutant load (including but not limited to a discharge of sewage, industrial waste, other wastes or any noxious or deleterious substance or a hazardous substance) from a property enters state waters, DEQ shall be notified immediately upon discovery of the discharge (or no later than 24 hours), and follow up in writing (sent by mail or email). • Investigations of suspected IDIDs begin with a visual inspection of the selected point of connection to the MS4 for evidence of an illicit discharge and recording of observations. If flow is present, water chemistry tests can be performed in the field or samples may be collected and preserved on ice while the source is tracked down based on visual or olfactory cues. The source of the discharge is tracked down by testing farther up the storm drain network. Discharges are sampled from upstream manholes in the storm drain network to narrow down the source of the discharge to a specific pipe segment between two manholes or the input source. After the source of an illicit discharge has been identified, the appropriate agency is contacted to address the discharge.	►	►	►	►	►		
B.2.e.6.	*The permittee shall require the elimination of illicit discharges and improper disposal practices within 30-days of discovery. Where elimination of an illicit discharge within 30-days is not possible, the permittee shall require an expeditious schedule for removal of the discharge. In the interim, the permittee shall require the operator of the illicit discharge to take all reasonable and prudent measures to minimize the discharge of pollutants to the MS4.*	SWPD	Once the source of the IDID has been located and the responsible party identified, the county works with the responsible party to ensure that the discharge is eliminated within 30 days. Where elimination is not possible within 30 days, the party responsible for the illicit discharge shall be required to generate an expeditious schedule and to take all reasonable and prudent measures to minimize the discharge of pollutants to the MS4.	►	►	►	►	►	*Each annual report shall include a list of illicit discharges identified, the source, a description of follow-up activities and whether the illicit discharge has been eliminated.*	• Fairfax County investigated and closed 87 reports of illicit discharge or improper disposal during the reporting period. Two investigations that were ongoing when the previous reporting year ended have been closed. • See Appendix R3 for the list of confirmed illicit discharges and improper disposals during the reporting year including the source, follow-up activities, and status.

MS4 Action ID	Permit Requirement	Responsible Party	2021 Program Plan Elements (July 1, 2020 through June 30, 2021)	Due Date / Annual Timeline (Permit Year 1 2 3 4 5)	Specific Reporting Requirement	2021 Annual Report (July 1, 2020 through June 30, 2021)
	B.2.f. Spill Prevention and Response					
B.2.f.	*The permittee shall continue to implement a program that coordinates with the Fire Department and other permittee operated departments to prevent, contain, and respond to spills that may discharge into the MS4. The spill response program may include a combination of spill response actions by the permittee (and/or another public or private entity), and legal requirements for private entities within the permittee's jurisdiction.*	FRD	• The county meets this requirement through implementation of applicable Fairfax County Fire Prevention Division Policies, Operations, and Procedures and the Fire Investigations Section (FIS) Operation & Procedure Manual, Section 11 – Environmental Crimes. In that section it discusses who to contact, documentation, Illicit discharge, the VA fire prevention code on responsibility for cleanup, and VDOT. In Appendix D is the Hazmat Notification Matrix., MS4 Permit Requirements). These materials document how spill prevention and response is coordinated among county agencies. • The county's overall spill prevention and response program is described in two sections of the Fairfax County Fire Prevention Division Policies, Operations, and Procedures. These include: (1) Hazardous Materials Investigation Program Description; and, (2) Hazardous Materials Services Section Hazardous Materials Release, Oversight, and Monitoring Program Description. The FIS Training Manual addresses specific MS4 permit requirements, including coordination of spill prevention, containment, and response as well as training and reporting requirements. • The FRD Hazardous Materials Response Team (HMRT) responds to reported incidents of hazardous material releases, spills, and discharges. • Spill prevention at county facilities is addressed in MS4 Action ID B.2.i.2.c.	October 1, 2016 ★ ► ► ► ►	*Beginning with the annual report due October 1, 2016, each annual report shall include a list of spills, the source (identified to the best of the permittee's ability), and a description of follow-up activities taken.*	• The Fairfax County Fire and Rescue Department responded to 13 spills to the county's MS4 during the reporting period. • See Appendix R4 for the list of spill responses during the reporting year including the source and follow-up activities.
	B.2.g. Industrial & High Risk Runoff					
B.2.g.	*The permittee shall implement a program to identify and control pollutants in stormwater discharges to the MS4 from industrial and high risk runoff facilities (e.g., municipal landfills; other treatment, storage, or disposal facilities for municipal waste; hazardous waste treatment, storage, disposal and recovery facilities; facilities that are subject to EPCRA Title III, Section 313) and any other industrial or commercial discharges the permittee determines are contributing a significant pollutant loading to the MS4.*	SWPD	The county meets this requirement through implementation of the actions described below.			

MS4 Action ID	Permit Requirement	Responsible Party	2021 Program Plan Elements (July 1, 2020 through June 30, 2021)	Due Date / Annual Timeline — Permit Year 1	2	3	4	5	Specific Reporting Requirement	2021 Annual Report (July 1, 2020 through June 30, 2021)
B.2.g.1.	*The permittee shall maintain, and update as necessary, a list of all known industrial and high-risk dischargers to the MS4. This list shall include VPDES industrial stormwater permits.*	SWPD	The county maintains a list of known industrial and high risk dischargers to the county MS4 and updates the list as needed. The list encompasses any industrial and/or commercial stormwater dischargers not regulated under the Virginia State Water Control Law that the county determines may be contributing a significant pollutant loading to the county MS4, including major automotive facilities. Major updates of the list will be performed at least once per five-year permit cycle. The county obtains information about potential industrial and high risk dischargers from private commercial sources; state VPDES permit lists; lists maintained by EPA of EPCRA Title III, Section 313 facilities; and referrals from other county programs such as Illicit Discharge and Improper Disposal (IDID).	►	►	►	►	►	*The annual report due October 1, 2016 shall include a list of all known industrial and high risk dischargers including any non-VPDES regulated industrial and commercial stormwater dischargers determined by the permittee as contributing a significant pollutant load and that discharge to the MS4 system, a schedule of inspections and procedures for inspecting outfalls.*	
B.2.g.2.	*No later than 12-months after the effective date of this state permit, the permittee shall develop and implement a prioritized schedule and procedure to inspect outfalls of facilities with VPDES industrial stormwater permits at the point of connection to the MS4. Prioritization may be based on historical discharges, local water quality impairments, industrial category or other methods selected by the permittee. The permittee shall inspect all VPDES industrial stormwater permitted outfalls connected to its MS4 a minimum of once every five years.*	SWPD	• The county meets this requirement through implementation of "Standard Operating Procedures for Industrial and High Risk Runoff (IHRR) Program MS4 Point of Connection and Facility Inspections" (see Appendix P9). • The document in Appendix P9 establishes the procedures by which county staff establish priorities for IHRR inspections.	**March 31, 2016 ★**	►	►	►	►	*Beginning with the annual report due October 1, 2016, each annual report shall include a report on implementation of the inspection schedule and include a list of the facilities and/or facility outfalls inspected during the reporting period.*	• Fairfax County inspected the points of connection to the MS4 from 63 facilities on the IHRR list during the reporting period. • See Appendix R5 for the list of IHRR facilities inspected during the reporting period.
B.2.g.3.	*The permittee shall review copies of discharge monitoring reports (DMRs) submitted to the permittee by VPDES industrial stormwater permitted facilities as part of the permittee's investigations of significant pollutant loadings. The permittee may conduct additional monitoring, or may require the facility to conduct additional monitoring, of any stormwater discharges it believes may be a source of significant pollutant loadings.*	SWPD	The county meets this requirement through implementation of guidelines by which county staff request, review and track DMRs and notify DEQ of DMRs that were not submitted.	►	►	►	►	►		
B.2.g.4.	*The permittee shall coordinate with the Department to report any non-VPDES permitted industrial facility from which the permittee has evidence that a significant pollutant load is entering the MS4 system. Inspections of facilities for which the permittee has evidence of significant pollutant loading may be carried out in conjunction with other permittee programs.*	SWPD	• The county meets this requirement through implementation of "Standard Operating Procedures for Industrial and High Risk Runoff (IHRR) Program MS4 Point of Connection and Facility Inspections" (see Appendix P9). • The document in Appendix P9 establishes the procedures by which county staff identify non-VPDES permitted industrial facilities with evidence that a significant pollutant load is entering the MS4 system and procedures to refer these facilities to DEQ.	►	►	►	►	►		

MS4 Action ID	Permit Requirement	Responsible Party	2021 Program Plan Elements (July 1, 2020 through June 30, 2021)	Due Date / Annual Timeline — Permit Year 1	2	3	4	5	Specific Reporting Requirement	2021 Annual Report (July 1, 2020 through June 30, 2021)
B.2.g.5.	*The permittee shall refer the following facilities to the Department of Environmental Quality, Northern Regional Office, for Department compliance review under the Virginia State Water Control Law:* *(a) Facilities and operations having non-stormwater discharges that do not have coverage under an existing VPDES permit.* *(b) Facilities and operations identified pursuant to 40 CFR Part 122.26(b)(14) with manufacturing, processing, or raw materials storage outside that do not have coverage under an existing VPDES industrial stormwater permit.* *(c) Any VPDES industrial stormwater permit facility where there is evidence of significant pollutant loadings to the MS4.* *(d) Facilities that do not submit signed copies of DMRs to the permittee as required under a VPDES industrial stormwater permit.*	SWPD	• The county meets this requirement through implementation of "Standard Operating Procedures for Industrial and High Risk Runoff (IHRR) Program MS4 Point of Connection and Facility Inspections" (see Appendix P9). • The document in Appendix P9 establishes the procedures by which county staff identify facilities meeting the requirements for referral to DEQ under Part I.B.2.g)5) of the MS4 permit and procedures to refer these facilities to DEQ.	►	►	►	►	►	*Each annual report shall include a list of referrals to the Department.*	Fairfax County referred zero (0) facilities to DEQ during the reporting period.
B.2.g.6.	*The permittee shall maintain a list of any industrial and/or commercial stormwater dischargers not regulated under the Virginia State Water Control Law that it determines may be contributing a significant pollutant loading to the MS4. This list may be individual discharges or categories of discharges.* *(a) Outfalls from these facilities shall be included in the prioritized inspection schedule.* *(b) The list shall include, but shall not be limited to, major automotive facilities such as repair shops, body shops, auto detailers, tire repair shops and service stations.* *(c) The permittee shall require control measures as necessary and/or appropriate for stormwater discharges from these dischargers.*	SWPD	• The county will include industrial and commercial stormwater dischargers that the county determines are contributing a significant pollutant loading to the MS4 with the list described in MS4 Action ID B.2.g.1. • These outfalls will be included in the prioritized inspection schedule in MS4 Action ID B.2.g.2. • Control measures shall be required as necessary and/or appropriate for stormwater discharges from these dischargers in accordance with the enforcement authority identified in MS4 Action ID B.2.e.	►	►	►	►	►		
	B.2.h. Stormwater Infrastructure Management									
B.2.h.	*The permittee shall continue to maintain and implement programs to maintain the permittee's stormwater infrastructure and to update the accuracy and inventory of the storm sewer system.*									
B.2.h.1.	*For stormwater management (SWM) facilities and infrastructure maintained by the permittee including residential properties where SWM facilities, BMP and Storm Drainage Systems qualify for permittee maintenance (excluding apartments and mobile home parks), the following conditions apply:*	MSMD	The county meets this requirement through implementation of the actions described below.							

MS4 Action ID	Permit Requirement	Responsible Party	2021 Program Plan Elements (July 1, 2020 through June 30, 2021)	Due Date / Annual Timeline (Permit Year 1)	Annual Timeline (Permit Year 2)	Annual Timeline (Permit Year 3)	Annual Timeline (Permit Year 4)	Annual Timeline (Permit Year 5)	Specific Reporting Requirement	2021 Annual Report (July 1, 2020 through June 30, 2021)
B.2.h.1.a.	*The permittee shall provide for adequate long-term operation and maintenance of SWM facilities owned or operated by the permittee in accordance with written inspection and maintenance procedures included in the MS4 Program Plan.*	MSMD	• The county provides long-term operation and maintenance of county facilities in accordance with the "Post-Construction Stormwater Inspection and Maintenance Policies and Procedures" (see Appendix P10). • MSMD inspects and maintains SWM facilities on county property or within county easements. • The procedures are updated as needed.	**March 31, 2016 ★**	►	►	►	►	*The annual report due October 1, 2016 shall include the written inspection and maintenance procedures.*	
B.2.h.1.b.	*The permittee shall, at a minimum, inspect annually all SWM facilities owned or operated by the permittee. The permittee may choose to implement an alternative schedule to inspect these SWM facilities based on a risk assessment that includes facility type and expected maintenance needs provided that the alternative schedule is included in the MS4 Program Plan in accordance with plan modifications as listed in Part I.A.7.a) of this state permit.*	MSMD	• The inspection frequency of county-maintained SWM facilities within the inventory is dependent on the type of facility. • The county inspects county facilities that have routine maintenance programs every other year. Regional ponds and facilities that do not have routine maintenance programs are inspected annually. The alternative inspection schedule and the risk assessment upon which it is based are included in the "Post-Construction Stormwater Inspection and Maintenance Policies and Procedures" (see Appendix P10). • During inspections, MSMD and their contractors identify and document any necessary non-routine maintenance work. Each inspection form is tailored to the type of facility being inspected and has a standardized prioritization process.	►	►	►	►	►	*Each annual report shall include a list of activities including inspections, maintenance, and repair of stormwater infrastructure operated by the permittee as required in Part I.B.2.h)1), including the type and number of stormwater structures inspected and maintained; the total number of stormwater structures owned or operated by the permittee.*	

Type of stormwater structure (defined for the purposes of this report as the type of stormwater management facility)	Number Inspected	Number Maintained	Number Repaired	Total Number Owned or Operated by County
AS (Soil Compost Amendment)	17	-	-	17
BR (Bioretention)	139	143	46	143
CS (Cistern System)	2	-	1	2
DP (Dry Pond - peak shaver/extended detention/enhanced extended detention)	702	1,350	71	1,433
FC-PL566 (PL566 Dams)	6	6	6	6
FTW (Floating Treatment Wetland)	4	4	-	4
GR (Vegetated Roof)	15	15	2	16
MB (Manufactured BMP)	30	-	3	33
OS (Open Space/Meadow)	6	-	2	6
PP (Permeable Pavement)	104	97	-	117
RF (Reforestation)	56	-	-	58
RT (Rooftop Detention)	1	-	-	1
SF (Sand Filter)	10	-	1	10
ST (Synthetic Turf)	1	-	-	1
TF (Tree Box Filter/Filterra)	235	240	20	240
TR (Infiltration Practice/Trench)	96	-	2	100
UG (Underground Detention)	110	-	6	112
VS (Vegetated Swale)	72	72	3	72
WL (Constructed Wetland)	2	-	-	2
WP (Wet Pond)	23	16	2	30
WS (Wet Swale)	7	-	-	7
TOTAL	**1,638**	**1,943**	**165**	**2,410**

MS4 Action ID	Permit Requirement	Responsible Party	2021 Program Plan Elements (July 1, 2020 through June 30, 2021)	Due Date / Annual Timeline — Permit Year 1	2	3	4	5	Specific Reporting Requirement	2021 Annual Report (July 1, 2020 through June 30, 2021)
B.2.h.1.c.	*The permittee shall conduct maintenance on SWM facilities owned or operated by the permittee as necessary.*	MSMD	• MSMD performs routine maintenance on ponds, tree box filters, bioretention facilities, vegetated swales, green roofs and permeable pavement within the public inventory. Depending on the type and age of the facility, maintenance is performed from once up to five times per year. • County SWM facilities are maintained in accordance with the "Post-Construction Stormwater Inspection and Maintenance Policies and Procedures" (see Appendix P10).	►	►	►	►	►	See MS4 Action ID B.2.h.1.b.	See MS4 Action ID B.2.h.1.b.
B.2.h.1.d.	*The permittee shall continue its stormwater system inspection program and shall inspect no less than 15% of the MS4 annually and 100% of the system during the term of the permit.*	MSMD	• The county has an ongoing program to digitally video and physically inspect the storm sewer system. As part of this process, MSMD is using GIS to develop a Physical Condition Assessment (PCA) layer for segments of each pipe, storm sewer structure and channel for use in prioritizing assets most in need of repair or rehabilitation. • MSMD maintains mapping of the county stormwater infrastructure. This infrastructure inventory is continuously updated based on recorded easements, new as-built plans and condition assessments performed through internal closed-circuit television surveillance and walking/field verification. • When defining the condition of the system and determining corrective actions, MSMD staff distinguishes between deficiencies that are structural in nature and those that can be addressed through operations and maintenance activities.	►	►	►	►	►	*Each annual report shall include a list of activities including inspections, maintenance, and repair of stormwater infrastructure operated by the permittee as required in Part I.B.2.h)1), including the total linear feet of storm sewer system owned and/or operated by the permittee; and the linear feet of storm sewer system inspected.*	**Activity** / **Linear Feet** / **Percent** Total storm sewer system owned and/or operated by county: 8,004,480 — 100.0 Total storm sewer system inspected: 1,817,229 — 22.7 Cumulative storm sewer system inspected since 4/1/2015. 11,008,052 — 137.5 Total storm sewer system maintained: 628,439 — 7.8 Total storm sewer system repaired: 13,958 — 0.17
B.2.h.1.e.	*The permittee shall dispose of all wastes and wastewaters collected during stormwater system cleaning in accordance with local, state, and federal laws and regulations.*	MSMD	County staff and contractors dispose of wastes and wastewaters collected from stormwater system cleaning in accordance with local, state and federal laws and regulations.	►	►	►	►	►		
B.2.h.1.f.	*The permittee shall obtain any required state or federal permit(s) necessary to complete maintenance activities.*	MSMD	The county obtains all permits necessary to complete maintenance activities.	►	►	►	►	►		
B.2.h.2.	*For SWM facilities not maintained by the permittee and that discharge into the MS4, the following conditions apply:*	MSMD	The county meets this requirement through implementation of the actions described below.							

MS4 Action ID	Permit Requirement	Responsible Party	2021 Program Plan Elements (July 1, 2020 through June 30, 2021)	Due Date / Annual Timeline — Permit Year 1	2	3	4	5	Specific Reporting Requirement	2021 Annual Report (July 1, 2020 through June 30, 2021)
B.2.h.2.a.	*The permittee shall continue to implement a program to ensure proper maintenance of each privately maintained SWM facility that discharges into the MS4 system as documented in the MS4 Program Plan.*	MSMD	• The county's program to ensure proper maintenance of privately maintained SWM facilities is provided in the "Post-Construction Stormwater Inspection and Maintenance Policies and Procedures" (see Appendix P10). • Before a privately-maintained facility can be constructed in the county, a private maintenance agreement (PMA) is required to be executed and recorded in the land records of the county. Not all privately-owned and maintained facilities in the county have PMAs, due to changing requirements occurring in the 1980s. The PMA gives the county the legal authority to inspect, and if necessary, maintain the facility and requires that the facility be maintained in good working condition.	►	►	►	►	►		
B.2.h.2.a.1.	*Beginning with the effective date of this state permit and in accordance with 9 VAC 25-870-112 B, maintenance agreements may be used but are not required for stormwater control measures that are designed to treat stormwater runoff solely from the individual residential lot on which they are located provided that the permittee has developed and implemented a strategy to address maintenance of such stormwater management controls. Should the permittee choose a strategy other than a maintenance agreement, such a strategy shall be provided in writing no later than 12 months after the effective date of this state permit and shall include periodic inspections, homeowner outreach and education, or other methods targeted at promoting the long term maintenance of such facilities.*	MSMD	• The county currently requires maintenance agreements for stormwater control measures that are designed to treat stormwater runoff solely from the individual residential lot on which they are located. Inspection and follow-up procedures are provided in the "Post-Construction Stormwater Inspection and Maintenance Policies and Procedures" (Appendix P10). • In accordance with 9VAC25-870-112 B, the county has the discretion to adopt an alternative strategy for stormwater control measures that are designed to treat stormwater runoff solely from the individual residential lot on which they are located. The county has chosen to continue to require PMAs for these facilities at this time and any changes to the county's strategy will be reported to DEQ and reflected in updates to this Program Plan.	October 1, 2016 ★	►	►	►	►	*The annual report due October 1, 2016 shall include the permittee's strategy to address maintenance of stormwater management controls that are designed to treat stormwater runoff solely from the individual residential lot on which they are located.*	

MS4 Action ID	Permit Requirement	Responsible Party	2021 Program Plan Elements (July 1, 2020 through June 30, 2021)	Due Date / Annual Timeline — Permit Year 1	2	3	4	5	Specific Reporting Requirement	2021 Annual Report (July 1, 2020 through June 30, 2021)	
B.2.h.2.a.2.	*For SWM facilities that are privately maintained and for which maintenance agreements have been established between the permittee and the owner, the permittee shall inspect all privately maintained facilities no less than once per 5 years and conduct follow-up activities to ensure the required maintenance has been completed. Inspections may be conducted by the permittee or their designee as defined in 9 VAC 25-870-114.*	MSMD	• The county's inspection and follow-up procedures are provided in "Post-Construction Stormwater Inspection and Maintenance Policies and Procedures" (Appendix P10). • Private facilities are routinely scheduled for inspection by a contractor or by in-house staff, with the goal of inspecting each privately-maintained facility at least once every five years. A detailed inspection report, including photographs, plans and a geographic information system (GIS) map is provided to the owner(s) upon completion of each inspection. The report informs the owner(s) of any maintenance deficiencies observed during the inspection and provides a timeline for addressing deficiencies. • The county has an enforcement program in place if owners fail to voluntarily comply with our requests to complete noted deficiencies. The enforcement program is based on whether the facility is functioning as designed or not.	►	►	►	►	►	• *Each annual report shall include a list of activities including inspections performed and notifications of needed maintenance and repair of stormwater facilities not operated by the permittee as required by Part I.B.2.h)2).* • *Each annual report shall provide a summary of actions taken by the permittee to address failure of privately maintained SWM facilities owners to abide by maintenance agreements.*	Number of privately maintained stormwater management facilities inspected: Notifications of needed maintenance and repair of privately maintained SWM facilities: Actions taken by the county to address failure of privately maintained SWM facilities owners to abide by maintenance agreements:	1,222 457 3
B.2.h.2.a.3.	*For SWM facilities that are privately maintained and for which maintenance agreements have not been established between the permittee and the owner, the permittee shall implement a pilot program consisting of the following:*	MSMD	The county meets this requirement through implementation of the actions described below.								
B.2.h.2.a.3.i.	*No later than 12-months after the effective date of the permit, the permittee shall develop draft procedures and policies that are designed to ensure that inspection and maintenance of privately maintained SWM facilities without maintenance agreements are being conducted. The draft procedures and policies should identify any expected limitations to the permittee's ability to implement these procedures and policies and should propose options to overcome these limitations;*	MSMD	• Fairfax County maintains and implements procedures and policies to ensure the inspection and maintenance of privately maintained SWM facilities without maintenance agreements are being conducted. • If owners are not maintaining facilities as needed and PMAs are not recorded, the county can pursue compliance with stormwater management requirements that are specified on approved plans through the enforcement of Zoning Ordinance §17-108(6) and §18-901(3). The enforcement policy outlined in the procedures describes Notices of Inspection, Notices of Maintenance Verification, Notices of Violation, an appeals process, penalties and potential program limitations.	March 31, 2016 ★							
B.2.h.2.a.3.ii.	*No later than 15-months after the effective date of the permit, the permittee shall implement these draft procedures and policies including the proposed options identified in subsection Part I.B.2.h)2)a)(3)(i) above; and*	MSMD	Fairfax County maintains and implements procedures and policies developed in MS4 Action ID B.2.h.2.a.3.i.	June 30, 2016 ★	►						

MS4 Action ID	Permit Requirement	Responsible Party	2021 Program Plan Elements (July 1, 2020 through June 30, 2021)	Due Date / Annual Timeline — Permit Year 1	2	3	4	5	Specific Reporting Requirement	2021 Annual Report (July 1, 2020 through June 30, 2021)
B.2.h.2.a.iii.	*No later than 36-months after the effective date of the permit, the permittee shall modify the draft policy and procedures required by Part I.B.2.h)2)a)(3)(i) for the inspection of privately maintained SWM facilities based on the findings of Part I.B.2.h)2)a)(3)(ii)and finalize the inspection procedures.*	MSMD	Fairfax County maintains and implements procedures and policies developed in MS4 Action ID B.2.h.2.a.3.i.			**March 31, 2018 ★**	►	►		
B.2.h.3.	*No later than 18 months after the effective date of this permit, the permittee shall map the MS4 service area and each MS4 outfall. The following information shall be tracked for each MS4 outfall:* *(a) An individual identification number, local watershed, HUC and receiving water;* *(b) The latitude and longitude in decimal degrees; and* *(c) New outfalls shall be tracked upon their inclusion into the MS4.*	MSMD	• Fairfax County has identified all outfalls owned or operated by Fairfax County that discharge to surface waters (i.e. MS4 outfalls). • Each MS4 outfall has an individual identification number, the local watershed, HUC and receiving water in which it is located are identified, and its latitude and longitude are provided in in decimal degrees. • The county has delineated the drainage area to each of its MS4 outfalls (i.e. the MS4 service area). • The county updates the mapping layers to incorporate new outfalls once as-built plans are provided by the party responsible for constructing the new outfall.		**September 30, 2016 ★**	►	►	►	*The MS4 service area map including outfalls and information included in Part I.B.2.h)3) shall be submitted no later than 18 months after the effective date of this state permit. The information shall be submitted as an electronic file in one of the following formats: shapefile, geodatabase, .xls, .xlsx, .csv, .mdx, .dbf, delimited text, XML, or other file approved by the Department.*	
B.2.h.4.	*No later than 24 months after the effective date of this state permit, the permittee shall identify the following for each local watershed, sixth order HUC and Chesapeake Bay Segment:* *(a) The number of impervious, pervious and total acres served by the MS4 as of June 30, 2009.* *(b) The number of impervious, pervious and total acres treated by stormwater controls as of June 30, 2009.*	MSMD	• Fairfax County will use the MS4 service area mapping completed in MS4 Action ID B.2.h.3 and the county's 2009 impervious cover layer to estimate the impervious, pervious and total acres served by the MS4 as of June 30, 2009 by local watershed, sixth-order HUC and Chesapeake Bay Segment. • The county will use data from its stormwater asset management system and GIS to estimate the impervious, pervious and total acres treated by stormwater controls as of June 30, 2009 by local watershed, sixth order HUC and Chesapeake Bay Segment.		**March 31, 2017 ★**				*The annual report due October 1, 2017 shall include the information included in Part I.B.2.h) 4). The information shall be submitted in a format specified by the Department.*	The number of impervious, pervious and total acres served by the MS4 as of June 30, 2009, as well as the number of impervious, pervious and total acres treated by stormwater controls as of June 30, 2009 was submitted in the 2017 report.
B.2.h.5.	*No later than 54 months after the effective of this state permit, the permittee shall update each of the following:* *(a) The number of impervious, pervious and total acres served by the MS4 for each Fairfax County local watershed, sixth order HUC and Chesapeake Bay segment.* *(b) The number of impervious, pervious and total acres treated by stormwater controls.*	MSMD	The update of the acreage estimates developed under MS4 Action ID B.2.h.4 above will capture "New Sources" in accordance with Part I.D.1. of the county's MS4 permit and as defined and described in DEQ's Chesapeake Bay TMDL Special Condition Guidance (GM 15-2005).					**September 30, 2019 ★**	*The annual report due October 1, 2019 shall include an updated list of all information requested in Part I.B.2.h)5).*	This was submitted during FY19, see Appendix P11 for a list of the number of impervious, pervious and total acres served by the MS4 for each Fairfax County local watershed, sixth order HUC and Chesapeake Bay segment, as well as the number of impervious, pervious and total acres treated by stormwater controls.
	B.2.i. County Facilities									
B.2.i.	*Facilities owned or operated by the permittee shall be operated and maintained as follows:*	MSMD	The county meets this requirement through implementation of the actions described below.							

MS4 Action ID	Permit Requirement	Responsible Party	2021 Program Plan Elements (July 1, 2020 through June 30, 2021)	Due Date / Annual Timeline — Permit Year 1	2	3	4	5	Specific Reporting Requirement	2021 Annual Report (July 1, 2020 through June 30, 2021)
B.2.i.1.	*Good Housekeeping* *(a) The discharge of permittee vehicle wash water into the MS4 at permittee facilities without authorization from a separate VPDES permit shall be prohibited.* *(b) The discharge of wastewater into the MS4 at county facilities without authorization by a separate VPDES permit shall be prohibited.* *(c) The dumping of collected yard waste and grass clippings into the MS4 shall be prohibited.* *(d) Fluids leaked from permittee vehicles shall be prevented from entering the storm sewer system. Leaked fluids shall be cleaned up and disposed of properly, as soon as possible but no later than 24-hours after discovery.*	MSMD	The county meets this requirement through implementation of the countywide "Stormwater Protection Policy" (PM No.25-01) which prohibits the discharge or disposal of specific substances into the county's storm sewer system and offers guidance on how to comply with these prohibitions. This policy applies to all county employees, facilities and vehicles and is posted on the County's intranet and included in county employee training.	►	►	►	►	►		
B.2.i.1.e.	*No later than the expiration date of this state permit, the permittee shall install and maintain markings on all stormwater inlets located on high priority municipal facilities, as defined at Part I.F, and on permittee properties with greater than 2-acres of impervious surface.*	MSMD	• County properties with greater than 2-acres of impervious surface have been identified. • Markers will be installed by volunteers or county personnel. Markers will be installed on stormwater inlets on high priority municipal facilities specified in B.2.i.2.a and county properties with greater than 2 acres of impervious surface.	►	►	►	►	**March 31, 2020 ★**		
B.2.i.2.	*High Priority Municipal Facilities*	MSMD	The county meets this requirement through implementation of the actions described below.							

MS4 Action ID	Permit Requirement	Responsible Party	2021 Program Plan Elements (July 1, 2020 through June 30, 2021)	Due Date / Annual Timeline (Permit Year 1)	Annual Timeline (Permit Years 2–5)	Specific Reporting Requirement	2021 Annual Report (July 1, 2020 through June 30, 2021)
B.2.i.2.a.	*No later than 12-months after the effective date of this state permit, the permittee shall identify all high priority municipal facilities that do not require a separate VPDES industrial stormwater permit;*	MSMD	• High priority municipal facilities are defined in Part I.F of the permit as "any facility owned and operated by the permittee or regulated under this state permit that includes composting facilities, equipment storage and maintenance facilities, materials storage yards, pesticide storage facilities, public works yards, recycling facilities, salt storage facilities, solid waste handling and transfer facilities, and vehicle storage and maintenance yards." • The list of high priority municipal facilities that do not require a separate VPDES industrial stormwater permit was determined by answering the following three questions for each developed property owned or operated by Fairfax County: 1. Does the facility meet the permit definition for a high priority municipal facility? If so, then the facility was included on the list. 2. Does the facility have coverage under a separate VPDES Industrial Stormwater Permit? If so, then the facility was removed from the list. 3. Are the activities occurring at the facility temporary or seasonal in nature? If so, then the facility was removed from the list. • The county submitted a list of 18 high priority municipal facilities in the FY 2016 Annual Report.	March 31, 2016 ★	► ► ► ►	*The annual report due October 1, 2016 shall include a list of all high priority municipal facilities.*	• Fairfax County's list of high priority municipal facilities was provided in the FY 2016 Annual Report. • The county's MS4 program was inspected by DEQ on February 8th and 9th 2017. As a result of the inspection, the county has determined that some county-owned and operated facilities may not have been included in the high priority evaluation because they did not appear in a geographic information system (GIS) query of county-owned parcels. The list that was provided in response to the post inspection records request contained 484 county facilities. Upon further investigation, we have identified an additional 245 facilities, for a total of 729 facilities requiring evaluation. The county has revised the list of county-owned and operated facilities that include composting facilities, equipment storage and maintenance facilities, materials storage yards, pesticide storage facilities, public works yards, recycling facilities, salt storage facilities, solid waste handling and transfer facilities, and vehicle storage and maintenance yards based on this more comprehensive list of county facilities.

MS4 Action ID	Permit Requirement	Responsible Party	2021 Program Plan Elements (July 1, 2020 through June 30, 2021)	Due Date / Annual Timeline (Permit Year 1)	Annual Timeline (Permit Year 2)	Annual Timeline (Permit Year 3)	Annual Timeline (Permit Year 4)	Annual Timeline (Permit Year 5)	Specific Reporting Requirement	2021 Annual Report (July 1, 2020 through June 30, 2021)
B.2.i.2.b.	*Within 12 months of state permit coverage, the operator shall identify which of the high priority municipal facilities have a high potential of discharging pollutants. High priority municipal facilities that have a high potential for discharging pollutants are those facilities identified in subsection (a) above that are not covered under a separate VPDES permit and which any of the following materials or activities occur and are expected to have exposure to stormwater resulting from rain, snow, snowmelt or runoff:* *(1) Areas where residuals from using, storing or cleaning machinery or equipment remain and are exposed to stormwater;* *(2) Materials or residuals on the ground or in stormwater inlets from spills or leaks;* *(3) Material handling equipment (except adequately maintained vehicles);* *(4) Materials or products that would be expected to be mobilized in stormwater runoff during loading/unloading or transporting activities (e.g., rock, salt, fill dirt);* *(5) Materials or products stored outdoors (except final products intended for outside use where exposure to stormwater does not result in the discharge of pollutants);* *(6) Materials or products that would be expected to be mobilized in stormwater runoff contained in open, deteriorated or leaking storage drums, barrels, tanks, and similar containers;* *(7) Waste material except waste in covered, non-leaking containers (e.g., dumpsters);* *(8) Application or disposal of process wastewater (unless otherwise permitted); or* *(9) Particulate matter or visible deposits of residuals from roof stacks, vents or both not otherwise regulated (i.e., under an air quality control permit) and evident in the stormwater runoff.*	MSMD	• Each of the high priority municipal facilities identified in MS4 Action ID B.2.i.2.a was further evaluated to identify which of these facilities have a high potential of discharging pollutants using the criteria found in Part I.B.2.i.2)b) of the MS4 permit. This evaluation determined that 21 of the 729 high priority municipal facilities also have a high potential of discharging pollutants. The county's list of 14 high priority municipal facilities with a high potential of discharging pollutants was provided in the FY 2016 Annual Report.	March 31, 2016 ★	►	►	►	►	Although not a specific reporting requirement in the permit, the list of Fairfax County high priority municipal facilities with a high potential of discharging pollutants was provided in the FY 2016 Annual Report.	• Fairfax County's list of high priority municipal facilities with a high potential of discharging pollutants was provided in the FY 2016 Annual Report. • The revised list of high priority municipal facilities has been further evaluated to determine which facilities have a high potential of discharging pollutants. High priority municipal facilities that have a high potential for discharging pollutants are those facilities that are not covered under a separate Virginia Pollutant Discharge Eliminations System (VPDES) permit and at which any of the activities listed in Part I.B.2.i.2.b(1-9) occur and are expected to have exposure to stormwater resulting from rain, snow, snowmelt or runoff. The revised list of high priority municipal facilities that have a high potential of discharging pollutants is in Appendix R6.

MS4 Action ID	Permit Requirement	Responsible Party	2021 Program Plan Elements (July 1, 2020 through June 30, 2021)	Due Date / Annual Timeline (Permit Year 1 2 3 4 5)	Specific Reporting Requirement	2021 Annual Report (July 1, 2020 through June 30, 2021)
B.2.i.2.c.	*The permittee shall develop and/or update and implement individual stormwater pollution prevention plans for each high-priority municipal facility identified under Part I.B.2.i)2)(b) no later than 36-months after the effective date of this state permit. Stormwater pollution prevention plans (SWPPP) shall include:* *(1) A site description that includes a site map identifying all outfalls, direction of flows, existing source controls, and receiving water bodies;* *(2) A discussion and checklist of potential pollutants and pollutant sources;* *(3) A discussion of all potential non-stormwater discharges;* *(4) A maintenance schedule for all existing source controls;* *(5) All policies and procedures implemented at the facility to ensure source reduction;* *(6) An inspection schedule and checklist to ensure that all source reductions are continually implemented and all source controls are appropriately maintained. The date of each inspection and associated findings and follow-up shall be logged in each SWPPP;* *(7) Appropriate training as required in Part I.B.2.k);* *(8) Procedures to conduct an annual comprehensive site compliance evaluation;* *(9) Procedures to conduct dry weather screening; and* *(10) All modifications made as the result of any release or spill.*	MSMD	The county will develop and implement SWPPPs for each high priority municipal facility identified as required in MS4 Action ID B.2.i.2.b. no later than March 31, 2018. The SWPPPs will include the information (items 1-10) listed in Part I.B.2.i)2)(c) of the county's MS4 permit.	March 31, 2018 ★ ► ►		During an annual evaluation of SWPPP implementation, the county determined that some high priority municipal facilities with stormwater pollution protection prevention plans (SWPPPs) did not conduct an annual inspection of the facility in 2020. DEQ was contacted on April 6th to notify them of this oversight and facilities were contacted to ensure that future SWPPP inspections are conducted as scheduled. The county has taken steps to ensure that annual SWPPP inspections are conducted during the calendar year by increased tracking/reminders by the SWPPP manager and adding inspections to a work order system, if available. See the Summary of Program Effectiveness (Appendix R18) for more details on these program improvements.
B.2.i.2.d.	*A copy of each SWPPP shall be kept at each high-priority municipal facility and be kept updated.*	MSMD	A copy of the high priority municipal facility SWPPP will be kept at each facility requiring one. Where the SWPPP cannot be physically kept on site, a copy of the high priority municipal facility SWPPP will be kept on file by the department that manages the site.	► ►		
	B.2.j. Public Education/Participation					
B.2.j.	*The permittee shall implement a public education program with the goal of increasing the stormwater knowledge of target audiences and changing behavior to result in pollutant reductions. The permittee may fulfill all or part of the requirements of this state permit through regional outreach programs involving two or more MS4 localities.*	SWPD	The county meets this requirement through implementation of the actions described below.			

MS4 Action ID	Permit Requirement	Responsible Party	2021 Program Plan Elements (July 1, 2020 through June 30, 2021)	Due Date / Annual Timeline (Permit Year 1	2	3	4	5)	Specific Reporting Requirement	2021 Annual Report (July 1, 2020 through June 30, 2021)
B.2.j.1.	*The permittee shall identify, schedule, implement, evaluate and modify, as necessary, public outreach activities designed to meet the following public education and outreach goals:*	SWPD	The county's public education program raises awareness about stormwater challenges throughout the county and offers opportunities for residents to become involved in efforts to restore and protect local waterways, the Occoquan Reservoir, the Potomac River and the Chesapeake Bay. A number of county organizations and partners contribute to the public education program including SWPD, DPWES Solid Waste Management Program (SWMP), FCPA and NVSWCD. County staff uses a variety of methods to provide public education on stormwater management and watershed basics including in-person presentations, print publications, television, radio and online resources. A new public education tool was implemented in May 2019; EnviroPod is a frequent podcast devoted exclusively to environmental topics that encourage public participation in the county's environmental efforts. The county evaluates its program annually and modifies it as necessary.	**Update program by March 31, 2016 ★**	►	►	►	►	*Beginning with the annual report due October 1, 2016, each annual report shall include a list of permittee public outreach and education activities and the estimated number of individuals reached through the activities. An evaluation of program effectiveness, as outlined in the MS4 Program Plan, with recommendations for future changes shall also be included.*	• During FY 2021, Fairfax County worked with Clean Water Partners to assess stormwater knowledge and behavior and preferences for receiving information. This effort will identify the effectiveness of the program, as well as influence future changes to the program. A summary of the survey results can be found in Appendix R7. • Due to COVID-19 FCPS school closures, education and outreach activities usually conducted in coordination with FCPS were unable to be conducted. However, the County successfully fulfilled its permit requirements. See Appendix R8 for a summary of outreach and education activities and estimated number of individuals reached for each of the ten messages required in Part I.B.2.j)1) of the permit. The new programs are highlighted in blue.
B.2.j.1.a.	*Promote, publicize, and facilitate public reporting of the presence of illicit discharges or improper disposal of materials into the MS4;*	SWPD	Fairfax County uses multiple media outlets (county Channel 16, print, website) to promote public reporting of potential illicit discharges, supported by an internal communication plan to ensure referrals of calls and other contacts are routed appropriately.	**March 31, 2016 ★**	►	►	►	►	See MS4 Action ID B.2.j.1.	See MS4 Action ID B.2.j.1.
B.2.j.1.b.	*Continue to promote individual and group involvement in local water quality improvement initiatives including the promotion of local restoration and clean-up projects, programs, groups, meetings and other opportunities for public involvement;*	NVSWCD	Fairfax County maintains a website for volunteer opportunities and utilizes multiple media outlets to promote individual and group involvement in local water quality improvement initiatives.	**March 31, 2016 ★**	►	►	►	►	See MS4 Action B.2.j.1..	See MS4 Action ID B.2.j.1.
B.2.j.1.c.	*Develop an outreach program for public and private golf courses located within the county that discharge to the permittee's MS4 to encourage implementation of integrated management practice (IMP) plans and techniques to reduce runoff of fertilizer and pesticides;*	FCPA	Fairfax County implements a proactive program to reach public and private golf course managers/superintendents to promote IMP and to educate on the MS4 and water quality.	**March 31, 2016 ★**	►	►	►	►	See MS4 Action ID B.2.j.1.	See MS4 Action ID B.2.j.1.
B.2.j.1.d.	*Promote, publicize, and facilitate the proper management and disposal of used oil and household hazardous wastes;*	SWMP	Fairfax County maintains proactive measures targeting residents to inform them of disposal services provided, proper disposal practices and management of material in preparation for disposal. Fairfax County supports the Clean Water Partners whose outreach programs include a focus on proper management and disposal of used oil and HHW.	**March 31, 2016 ★**	►	►	►	►	See MS4 Action ID B.2.j.1.	See MS4 Action ID B.2.j.1.

MS4 Action ID	Permit Requirement	Responsible Party	2021 Program Plan Elements (July 1, 2020 through June 30, 2021)	Due Date / Annual Timeline (Permit Year 1	2	3	4	5)	Specific Reporting Requirement	2021 Annual Report (July 1, 2020 through June 30, 2021)
B.2.j.1.e.	*Promote and publicize the proper disposal of pet waste and household yard waste;*	SWMP	The county maintains proactive outreach through various media outlets targeting pet owners and households on proper management of pet waste and yard waste. Outreach and education on these topics are also performed by support to regional efforts through Clean Water Partners, for example.	March 31, 2016 ★	►	►	►	►	See MS4 Action ID B.2.j.1.	See MS4 Action ID B.2.j.1.
B.2.j.1.f.	*Promote and publicize the use of the permittee's litter prevention program;*	CFC	Fairfax County, through an agreement with the Clean Fairfax Council (CFC), promotes and publicizes litter prevention strategies as well as promotion through various media outlets (county Channel 16, print, website and EnviroPod podcasts).	March 31, 2016 ★	►	►	►	►	See MS4 Action ID B.2.j.1.	See MS4 Action ID B.2.j.1.
B.2.j.1.g.	*Promote and publicize methods for residential car washing that minimize water quality impacts;*	SWPD	Fairfax County uses various media for promotion of car washing methods that minimize impacts on water quality, including avoidance of discharges to storm drains and use of commercial car washes.	March 31, 2016 ★	►	►	►	►	See MS4 Action ID B.2.j.1.	See MS4 Action ID B.2.j.1.
B.2.j.1.h.	*Promote and publicize the proper use, application, and disposal of pesticides, herbicides, and fertilizers by public, commercial, and private applicators and distributors;*	SWPD	Fairfax County uses various media for promotion of the proper management techniques for handling pesticides, herbicides and fertilizers to reduce impact on water quality. Partners include NVSWCD and the Clean Water Partners on proper techniques for application, storage and disposal.	March 31, 2016 ★	►	►	►	►	See MS4 Action ID B.2.j.1.	See MS4 Action ID B.2.j.1.
B.2.j.1.i.	*Encourage private property owners to implement voluntary stormwater management techniques and/or retrofits; and*	NVSWCD	• Fairfax County uses existing media (county Channel 16, print, website) to encourage private property owners to implement voluntary stormwater management techniques and/or retrofits. • The county works in partnership with NVSWCD to provide encouragement to private property owners to implement voluntary stormwater management techniques through workshops, brochures and other assistance. • In the process of assisting owners of existing stormwater facilities that may need upgrades or would benefit from improvements, the county educates owners on options and encourages implementation.	March 31, 2016 ★	►	►	►	►	• *Beginning with the annual report due October 1, 2016, each annual report shall provide a summary of voluntary retrofits completed on private property used to demonstrate pollutant reduction requirements. Note that any voluntary project for which the permittee seeks to use for pollutant reduction requirements must be tracked and reported.* • *Beginning with the annual report due October 1, 2016, each annual report shall provide a summary of voluntary stormwater management techniques encouraged on private property.*	Fairfax County has chosen not to use voluntary retrofits completed on private property to demonstrate pollutant reduction requirements at this time and as a result has not provided a summary of specific voluntary retrofits. Should the county choose to seek credit for voluntary retrofits completed on private property towards its pollutant reduction requirements in the future, such projects will be reported to DEQ and reflected in the appropriate update to the county's MS4 Program Plan.

Voluntary Stormwater Management Techniques Encouraged on Private Property	Number of New Private Properties Participating in FY 2021
Rain Garden	5 homeowners, 1 HOA
Rain Barrels	120 distributed
Conservation Landscaping	11 homeowners, 4 HOA/Place of Worship
Bioretention	1 homeowner
Porous Pavers	1 homeowner
Infiltration Trench	1 homeowner
Urban Nutrient Management Plans	1 homeowner

MS4 Action ID	Permit Requirement	Responsible Party	2021 Program Plan Elements (July 1, 2020 through June 30, 2021)	Due Date / Annual Timeline (Permit Year)					Specific Reporting Requirement	2021 Annual Report (July 1, 2020 through June 30, 2021)
				1	2	3	4	5		
B.2.j.1.j.	*Target strategies towards local groups of commercial, industrial, and institutional entities likely to have significant stormwater impacts.*	SWPD	Fairfax County maintains an outreach program to targeted audiences on pollution prevention through distribution of materials during inspections, on line and at public events.	March 31, 2016 ★	►	►	►	►	See MS4 Action ID B.2.j.1.	See MS4 Action ID B.2.j.1.
B.2.j.2.	*The permittee shall post a copy of this state permit on its web page no later than 30-days after the effective date of this state permit and continue to retain a copy of the permit online for the duration of this state permit.*	SWPD	• The county's MS4 permit (VA0088587), effective April 1, 2015, was posted to the county website on April 7, 2015. • The permit is available at https://www.fairfaxcounty.gov/publicworks/sites/publicworks/files/assets/documents/pdf/reports/ms4/va0088587-fairfax-permit.pdf	April 30, 2015 ★	►	►	►	►		
B.2.j.3.	*The permittee shall post copies of each annual report on its website no later than 30 days after the report submittal to the Department and continue to retain copies of the annual reports online for the duration of this state permit.*	SWPD	• Annual reports are posted to the county website within 30 days of submittal to DEQ. • Annual reports are available at https://www.fairfaxcounty.gov/publicworks/stormwater/ms4-program-plan-and-annual-reports	►	►	►	►	►		
B.2.j.4.	*The permittee shall post the most current MS4 Program Plan on its website no later than 30 days after the effective date of this permit and maintain a current copy on the website. If the MS4 Program Plan is modified or revised, the updated plan shall be posted within 30 days of the revision(s). Copies of the most current MS4 Program Plan shall be made available for public review upon request of interested parties in compliance with all applicable open records requirements.*	SWPD	• The county's most current MS4 Program Plan was posted to the county website on April 7, 2015. • Updates to the MS4 Program Plan will be posted to the county's website within 30 days of submittal to DEQ. • The MS4 Program Plan is available at: https://www.fairfaxcounty.gov/publicworks/stormwater/ms4-program-plan-and-annual-reports	►	►	►	►	►		
	B.2.k. Training									
B.2.k.	*The permittee shall conduct stormwater training for permittee employees. The training requirement may be fulfilled all or in part through regional training programs involving two or more MS4 localities; provided, however, that the permittee shall remain individually liable for its failure to comply with the training requirements in this state permit. The permittee shall determine the appropriate employees to receive the following types of training based on the specific topic for which training is to be provided:*	SWPD	The county meets this requirement through implementation of the actions described below.							

<table>
<tr><th rowspan="3">MS4 Action ID</th><th rowspan="3">Permit Requirement</th><th rowspan="3">Responsible Party</th><th rowspan="3">2021 Program Plan Elements (July 1, 2020 through June 30, 2021)</th><th colspan="5">Due Date / Annual Timeline</th><th rowspan="3">Specific Reporting Requirement</th><th rowspan="3">2021 Annual Report (July 1, 2020 through June 30, 2021)</th></tr>
<tr><th colspan="5">Permit Year</th></tr>
<tr><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th></tr>
<tr><td>B.2.k.1.</td><td>The permittee shall provide biennial training to appropriate field personnel in the recognition and reporting of illicit discharges.</td><td>SWPD</td><td>The following biennial training is provided to appropriate field personnel:
• Recognition and Reporting of Illicit Discharges</td><td>►</td><td>March 31, 2017 ★</td><td>►</td><td>March 31, 2019 ★</td><td>►</td><td>Beginning with the annual report due October 1, 2016, each annual report shall include a list of training events, the date and the estimated number of individuals attending each event.</td><td>Fairfax County implements training for recognition and reporting of illicit discharges through EmployeeU, the county’s learning management system.
Training Provided | Date | Number of Individuals Trained
Fairfax County MS4 Illicit Discharge Recognition and Reporting for County Personnel | Training is provided online through EmployeeU, and trainings are completed throughout the fiscal year. | 102</td></tr>
<tr><td>B.2.k.2.</td><td>The permittee shall provide biennial training to appropriate employees in good housekeeping and pollution prevention practices that are to be employed during road, street, and parking lot maintenance.</td><td>SWPD</td><td>The following biennial training is provided to appropriate employees:
• General Good Housekeeping and Pollution Prevention Training for County Personnel</td><td>►</td><td>March 31, 2017 ★</td><td>►</td><td>March 31, 2019 ★</td><td>►</td><td>Beginning with the annual report due October 1, 2016, each annual report shall include a list of training events, the date and the estimated number of individuals attending each event.</td><td>Fairfax County implements a combined good housekeeping training through EmployeeU, the county’s learning management system. The training covers practices that are applicable during road, street, and parking lot maintenance, at maintenance and public works facilities, and at county recreation facilities.
Training Provided | Date | Number of Individuals Trained
Fairfax County MS4 General Good Housekeeping and Pollution Prevention Training for County Personnel | Training is provided online through EmployeeU, and trainings are completed throughout the fiscal year. | 322</td></tr>
<tr><td>B.2.k.3.</td><td>The permittee shall provide biennial training to appropriate employees in good housekeeping and pollution prevention practices that are to be employed in and around permittee maintenance and public works facilities.</td><td>SWPD</td><td>The following biennial training is provided to appropriate employees:
• General Good Housekeeping and Pollution Prevention Training for County Personnel</td><td>►</td><td>March 31, 2017 ★</td><td>►</td><td>March 31, 2019 ★</td><td>►</td><td>See MS4 Action ID B.2.k.2</td><td>See MS4 Action ID B.2.k.2</td></tr>
<tr><td>B.2.k.4.</td><td>The permittee shall ensure that employees, and require that contractors, who apply pesticides and herbicides are properly trained or certified per the Virginia Pesticide Control Act (§3.2-3900 et seq. of the Code of Virginia). The requirements of the Virginia Pesticide Control Act are established by the Virginia Pesticide Control Board.</td><td>SWPD</td><td>The county complies with this permit requirement by ensuring that employees and requiring that contractors who apply pesticides and herbicides are properly trained or certified per the Virginia Pesticide Control Act.</td><td>►</td><td>►</td><td>►</td><td>►</td><td>►</td><td></td><td></td></tr>
<tr><td>B.2.k.5.</td><td>The permittee shall have a program to ensure that county plan reviewers, inspectors, program administrators and construction site operators (e.g. responsible land disturber) are trained and obtain the appropriate certifications to the extent required under the Virginia Erosion and Sediment Control Law and attendant regulations.</td><td>LDS</td><td>Plan reviewers, inspectors, program administrators and construction site operators have received the appropriate training and certifications required under the Virginia Erosion and Sediment Control Law and attendant regulations. Records are kept by each department.</td><td>►</td><td>►</td><td>►</td><td>►</td><td>►</td><td></td><td></td></tr>
<tr><td>B.2.k.6.</td><td>The permittee shall have a program to ensure that the applicable County employees obtain the appropriate certifications as required under the Virginia Stormwater Management Act and its attendant regulations to implement the modified stormwater management design criteria.</td><td>LDS</td><td>Appropriate employees have been certified as program administrators, inspectors, plan reviewers or combined administrators as required under the Virginia Stormwater Management Act and its attendant regulations. Records are kept by each department.</td><td>►</td><td>►</td><td>►</td><td>►</td><td>►</td><td></td><td></td></tr>
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MS4 Action ID	Permit Requirement	Responsible Party	2021 Program Plan Elements (July 1, 2020 through June 30, 2021)	Due Date / Annual Timeline (Permit Year 1)	(Permit Year 2)	(Permit Year 3)	(Permit Year 4)	(Permit Year 5)	Specific Reporting Requirement	2021 Annual Report (July 1, 2020 through June 30, 2021)
B.2.k.7.	*The permittee shall provide biennial training to applicable employees in good housekeeping and pollution prevention practices that are to be employed in and around county recreation facilities.*	FCPA	Applicable FCPA employees who conduct maintenance, repair, and custodial work at county recreational facilities receive biennial training which covers the following information: • Recognition and Reporting of Illicit Discharges; • General Good Housekeeping and Pollution Prevention Training for county Personnel	►	March 31, 2017 ★	►	March 31, 2019 ★	►	See MS4 Action ID B.2.k.2	See MS4 Action ID B.2.k.2
B.2.k.8.	*The appropriate emergency response employees shall have training in spill response. A summary of the training and/or certification program provided to emergency response employees shall be included in the first annual report.*	FRD	• The FRD FHMIS Hazardous Materials Technical Support Branch will provide bi-annual MS4 training to Fire Prevention Division Inspectors and the Hazardous Materials Response Team. This training will include addressing spill prevention recommendations. This training shall be documented as part of the 1031 Fire Inspector training for the fire inspectors. • There is also an MS4 training component for the Annual Hazmat First Responder Refresher Training requirements for all Fire Department Operational Personnel.	March 31, 2016 ★	►	►	►	►	*The annual report due October 1, 2016 shall include documentation of employee emergency spill response training and/or certification.*	Fairfax County implements emergency spill response training for firefighters through the online Target Solutions system. **Training Provided**: Hazardous Materials First Responder Operations (FRO) **Date**: Training is provided online through Target Solutions, and trainings are completed throughout the fiscal year. **Number of Individuals Trained**: 891
B.2.k.9.	*Documentation shall be kept of all training events including the training date, number of employees attending the training, and the objective of the training event for a period of three years after each training event. Additionally, all events shall be listed in the annual report for the year in which the training event occurred.*	SWPD	Training documentation is kept on file by the appropriate office. A list of training events will be provided in the MS4 Annual Reports.	March 31, 2016 ★	►	►	►	►	See MS4 Action IDs B.2.k.1, B.2.k.2 and B.2.k.8	See MS4 Action IDs B.2.k.1, B.2.k.2 and B.2.k.8
	B.2.l. Water Quality Screening Programs									
B.2.l.	*The following screening programs shall be implemented in addition to the monitoring required by Part I.C:*									
B.2.l.1.	*Dry Weather Screening Program: The permittee shall continue ongoing efforts to detect the presence of illicit connections and unauthorized discharges to the permittee's MS4.*	SWPD	The county meets this requirement through implementation of the actions described below.							

MS4 Action ID	Permit Requirement	Responsible Party	2021 Program Plan Elements (July 1, 2020 through June 30, 2021)	Due Date / Annual Timeline (Permit Year 1)	(Permit Year 2)	(Permit Year 3)	(Permit Year 4)	(Permit Year 5)	Specific Reporting Requirement	2021 Annual Report (July 1, 2020 through June 30, 2021)
B.2.I.1.a.	*The permittee shall continue to implement a program of dry weather screening in areas of concern as identified by the permittee including but not limited to: commercial car washes, car dealerships, pet kennels, restaurants, areas with a history of complaints, and areas upstream of sensitive ecosystems. The permittee shall screen at a minimum, 100 of the county's MS4 outfalls each year.*	SWPD	• The county's Dry Weather Screening Program has three distinct field components: sample water flowing at outfalls, retesting of any outfalls that test positive for one or more analytes and tracking down of illicit discharges/ connections as necessary. • Field screening begins after vegetation has started to die back and the outfalls are both visible and accessible. This also coincides with the time of year with the lowest average precipitation making it less likely that sampling will be prevented by a rain event. Sampling shall not take place if it has rained 0.1 inches or more in the past 48 hours. If any analyte exceeds program criteria the outfall must be retested for any of the analytes that were in exceedance within 48 hours. • If a high concentration of an analyte is confirmed through retesting, the source of the discharge is tracked down by testing farther up the storm drain network. Discharges are sampled from upstream manholes in the storm drain network to narrow down the source of the discharge to a specific pipe segment between two manholes or the input source. • After the source of an illicit discharge has been identified, the appropriate agency is contacted to address the discharge.	►	►	►	►	►	*Each annual report shall include a list of locations upon which dry weather screening was conducted, the results and any follow-up actions including maintenance and/or repair of infrastructure or outfalls performed as a result of the dry weather screening.*	During FY21, the county monitored 103 outfalls. See Appendix R9 for the Dry Weather Screening Program Report.

MS4 Action ID	Permit Requirement	Responsible Party	2021 Program Plan Elements (July 1, 2020 through June 30, 2021)	Due Date / Annual Timeline — Permit Year 1	2	3	4	5	Specific Reporting Requirement	2021 Annual Report (July 1, 2020 through June 30, 2021)
B.2.l.1.b.	*Criteria for selection of outfalls to be screened as required by Part I.B.2.l)1)(a) above shall include but is not limited to the following:* *(1) List of sites requiring further investigation, as previously identified;* *(2) Age and density of development with the likelihood of illicit connections such as older residential, commercial and industrial areas;* *(3) Outfalls representing the general land uses of Fairfax County;* *(4) Poorly maintained gas stations, service stations, and shopping centers;* *(5) Presence of environmentally sensitive features downstream; and* *(6) History of complaints received on illicit discharges.*	SWPD	MS4 outfalls to be inspected are selected for sampling in part based on the presence of potential dry weather pollutant sources in their drainage area such as commercial car washes, car dealerships, pet kennels, restaurants, areas with a history of complaints, and areas upstream of sensitive ecosystems. Criteria for selection of outfalls to be screened include but are not limited to the following: 1. Outfalls identified in previous years dry weather screening and requiring further investigation; 2. Outfalls in older and more densely developed areas of the county where the likelihood of finding illicit connections is higher; 3. Outfalls with drainage areas that represent the general land uses of Fairfax County, primarily residential, with some commercial and industrial areas; 4. Outfalls with drainage areas that include gas stations, service stations, and shopping centers identified by the Industrial and High Risk Runoff (IHRR) program as being potential pollutant sources; 5. Outfalls upstream of environmentally sensitive features such as Huntley Meadows Park, stream valley parks, the Occoquan Reservoir, and resource protection areas (RPAs); and 6. Outfalls in areas with a history of complaints received on illicit discharges (referred from Illicit Discharge and Improper Disposal [IDID] program).	►	►	►	►	►		

MS4 Action ID	Permit Requirement	Responsible Party	2021 Program Plan Elements (July 1, 2020 through June 30, 2021)	Due Date / Annual Timeline (Permit Year 1)	(Permit Year 2)	(Permit Year 3)	(Permit Year 4)	(Permit Year 5)	Specific Reporting Requirement	2021 Annual Report (July 1, 2020 through June 30, 2021)
B.2.I.2.	*Wet Weather Screening Program: In addition to the monitoring required in Part I.C., the permittee shall continue to investigate, and address areas within their jurisdiction that are suspected to be contributing excessive levels of pollutants to the MS4. No later than 12 months after the effective date of this permit, the permittee shall develop written procedures for a wet weather screening program which shall include standard operating procedure to be used for initial screening and follow-up purposes. The written procedures shall be incorporated as part of the MS4 Program Plan.*	SWPD	The written wet weather screening procedures are provided in Appendix P12.	**March 31, 2016 ★**	►	**October 1, 2017 ★**	►	►	• *No later than 12 months after the effective date of the state permit, the permittee shall submit to the Department the written procedures for wet weather screening.* • *Beginning with the annual report due October 1, 2017, each annual report shall include a list of locations upon which wet weather screening was conducted, the results, weather conditions at the time sample was collected to include date and approximate time of most recent storm event preceding sample collection, long term trends analyses, and any follow-up actions including maintenance and/or repair of infrastructure or outfalls performed as a result of the wet weather screening.*	• Starting in October 2020, Fairfax County began piloting an updated, improved wet weather screening SOP at two new sites, which modifies our selection protocol, adds new constituents, and begins using more actionable criteria for our inspectors. The County will monitor these new sites for five years to better quantify seasonal and interannual magnitudes and variability of pollutants entering the MS4. • See Appendix R10 for the Wet Weather Screening Program Report.
	B.2.m. Infrastructure Coordination									
B.2.m.	*The permittee shall coordinate with the Virginia Department of Transportation (VDOT) regarding issues of MS4 physical-interconnectivity as described below:*	SWPD	The county meets this requirement through implementation of the actions described below.							
B.2.m.1.	*Annual Coordination Meeting – The permittee shall meet annually with VDOT for purposes of overall coordination on priority issues for the permittee's MS4 program plan (including operations and maintenance elements) and TMDL action planning relevant to the interconnectivity of the MS4s.*	SWPD	Fairfax County will meet annually with VDOT as required.	►	►	►	►	►	See MS4 Action ID B.2.m.8	See MS4 Action ID B.2.m.8
B.2.m.2.	*Mapping – The permittee shall inform VDOT of the status of its mapping program, identifying any uncertainty regarding ownership or actual location of MS4 components associated with the physically-interconnected MS4s, and working to resolve such uncertainty. The permittee shall coordinate with VDOT to identify any areas within the permittee's municipal boundaries that drain to the VDOT MS4.*	SWPD	• At the annual meeting (MS4 Action ID B.2.m.1), VDOT will be informed of the status of the county's mapping program. • The county will work with VDOT to resolve ownership and location uncertainties.	►	►	►	►	►	See MS4 Action ID B.2.m.8	See MS4 Action ID B.2.m.8

MS4 Action ID	Permit Requirement	Responsible Party	2021 Program Plan Elements (July 1, 2020 through June 30, 2021)	Due Date / Annual Timeline — Permit Year 1	2	3	4	5	Specific Reporting Requirement	2021 Annual Report (July 1, 2020 through June 30, 2021)
B.2.m.3.	*Chesapeake Bay TMDL Action Plans – The permittee shall inform VDOT of the means, methods, and schedule by which the permittee will implement the reductions required by the Chesapeake Bay TMDL Special Condition (Part I.D.1) when those means and methods may impact the physically-interconnected MS4s. The parties are encouraged to cooperate with one another where the siting or design of best management practices (BMPs) may be accelerated or otherwise improved by mutual cooperation.* *The permittee shall coordinate with VDOT to identify any areas within the permittee's municipal boundaries that drain to the VDOT MS4 and are unaccounted for in the Chesapeake Bay TMDL Action Plan developed by VDOT or the permittee. The unaccounted areas shall be quantified (acres) in the Chesapeake Bay TMDL Action Plan submitted by the permittee.*	SWPD	• Upon completion, the county will provide a copy of the county's Chesapeake Bay TMDL Action Plan to VDOT. • Fairfax County will work with VDOT to identify areas that drain to the VDOT MS4 and are unaccounted for in the county's Chesapeake Bay TMDL Action Plan. • The county will provide the estimated acreage of these unaccounted areas in the county's Chesapeake Bay TMDL Action Plan.	►	►	►	►	►	See MS4 Action ID B.2.m.8	See MS4 Action ID B.2.m.8
B.2.m.4.	*Other TMDL Action Plans – The permittee shall inform VDOT of TMDL Action Plans and major milestones implemented for other (i.e., non-Chesapeake Bay) TMDLs when those plans may impact the physically-interconnected MS4s. The parties are encouraged to cooperate with one another where the siting or design of BMPs may be accelerated or improved by mutual cooperation.*	SWPD	Fairfax County will provide copies of the county's non-Chesapeake Bay TMDL Action Plans to VDOT.	►	►	►	►	►	See MS4 Action ID B.2.m.8	See MS4 Action ID B.2.m.8
B.2.m.5.	*Credit for TMDL Implementation – Permit specific BMP retrofit requirements shall not be double-counted in the calculation of load reductions. If the permittee undertakes the project, the permittee shall be entitled to full credit for the project, but may share credit with VDOT on mutually agreeable terms, which shall be in writing.*	SWPD	The county will not count VDOT projects as credit for TMDL implementation unless mutually agreeable terms have been established in writing. Any agreements will be detailed in the county's Chesapeake Bay TMDL Action Plan.	►	►	►	►	►	See MS4 Action ID B.2.m.8	See MS4 Action ID B.2.m.8
B.2.m.6.	*Illicit Discharge Detection & Elimination – The permittee shall continue to be responsible for implementing a program for illicit discharge detection and elimination, including dry weather field screening, for the permittee's portion of the physically-interconnected MS4. As part of the annual coordination meeting, described in item (1) above, the permittee shall coordinate with VDOT on the identification of high risk industrial facilities. The permittee shall establish procedures for notifying VDOT when an illicit discharge is identified in the VDOT MS4.*	SWPD	• VDOT will be notified of any identified illicit discharges from their MS4 per the Dry Weather Screening Protocol. • At the annual meeting (see MS4 Action ID B.2.m.1), the county will coordinate with VDOT on the identification of high risk industrial facilities.	►	►	►	►	►	See MS4 Action ID B.2.m.8	See MS4 Action ID B.2.m.8

MS4 Action ID	Permit Requirement	Responsible Party	2021 Program Plan Elements (July 1, 2020 through June 30, 2021)	Due Date / Annual Timeline — Permit Year 1	2	3	4	5	Specific Reporting Requirement	2021 Annual Report (July 1, 2020 through June 30, 2021)
B.2.m.7.	*Water Quality Monitoring – The permittee shall conduct water quality monitoring as required by Part I.B.2.l) and Part I.C of this state permit. The permittee shall make available to VDOT all monitoring data collected from areas where the physically-interconnected MS4 discharges to the VDOT MS4 or received flow from the VDOT MS4. The permittee and VDOT are encouraged to cooperate with one another to establish a joint monitoring network.*	SWPD	The county will provide monitoring data collected from areas impacted by VDOT discharges through web links and Annual Report results.	►	►	►	►	►	See MS4 Action ID B.2.m.8	See MS4 Action ID B.2.m.8
B.2.m.8.	*Annual Reports – As part of its Annual Report, the permittee shall document any coordination efforts with VDOT that occurred during the reporting year pursuant to requirements (1) through (7) above.*	SWPD	The county will document the required coordination efforts with VDOT in Annual Reports.	►	►	►	►	►	*As part of its Annual Report, the permittee shall document any coordination efforts with VDOT that occurred during the reporting year pursuant to requirements of Part I.B.2)m)(1) through (7).*	See Appendix R11 for summaries of the meeting held by the county with VDOT on December 17, 2020.
	C. MONITORING REQUIREMENTS									
	C.1. Biological Stream Monitoring									
C.1.	*The permittee shall continue to implement a biological stream monitoring program to evaluate the condition of select stream sites within Fairfax County as follows:*	SWPD	The county meets this requirement through implementation of the actions described below.							
C.1.a.	*Five (5) stream sites within Fairfax County shall be selected for monitoring during the term of this permit.*	SWPD	The selected sites and procedures are provided in Appendix P13.		**October 1, 2016 ★**				*The annual report due October 1, 2016 shall include the list of sites to be monitored during the term of the state permit and monitoring protocols.*	
C.1.b.	*Monitoring shall be conducted twice per year with one sample collected between July 1st and December 31st and one sample collected between January 1st and June 30th each year at each selected stream site.*	SWPD	Monitoring will take place twice per year at each of the five sites beginning in FY 2017. One monitoring event will take place between July 1 and December 31 and one monitoring event will take place between January 1 and June 30.		**July, 1 2016 ★**	►	►	►	*Beginning with the annual report due October 1, 2017, each annual report shall include a summary of the monitoring results and analyses and an interpretation of that data with respect to long-term patterns/trends.*	See Appendix R12 for a summary of the biological stream monitoring results.
C.1.c.	*The permittee shall use a biological stream monitoring approach based on the "USEPA's Rapid Bioassessment Protocols for Use in Streams and Wadeable Rivers" or other method approved by the Department, and shall include an assessment of the benthic macroinvertebrate community and habitat assessment.*	SWPD	The biological monitoring approach will be based on the "USEPA's Rapid Bioassessment Protocols for Use in Streams and Wadeable Rivers".							

MS4 Action ID	Permit Requirement	Responsible Party	2021 Program Plan Elements (July 1, 2020 through June 30, 2021)	Due Date / Annual Timeline (Permit Year 1)	Due Date / Annual Timeline (Permit Year 2)	Due Date / Annual Timeline (Permit Year 3)	Due Date / Annual Timeline (Permit Year 4)	Due Date / Annual Timeline (Permit Year 5)	Specific Reporting Requirement	2021 Annual Report (July 1, 2020 through June 30, 2021)
	C.2. In-Stream Monitoring									
C.2.	*The permittee shall continue to implement an in-stream monitoring program to evaluate the condition of select streams within Fairfax County as follows:*	SWPD	The county meets this requirement through implementation of the actions described below.							
C.2.a.	*Five (5) stream sites within Fairfax County shall be selected for monitoring during the term of this permit.*	SWPD	The selected sites and procedures are provided in Appendix P14.		**October 1, 2016 ★**	►	►	►	*The annual report due October 1, 2016 shall include the list of sites to be monitored during the term of the state permit and monitoring protocols.*	
C.2.b.	*Monitoring shall be conducted once per two months between January 1st and December 31st at each monitoring location.*	SWPD	• Fairfax County will continue its in-stream monitoring to evaluate the condition of select stream sites within the county. • Monitoring will take place once per two months between January 1 and December 31 beginning in FY 2017.		**July, 1 2016 ★**	►	►	►	*Beginning with the annual report due October 1, 2017, each annual report shall include a summary of the monitoring results and analyses and an interpretation of that data with respect to long-term patterns/trends.*	See Appendix R13 for a summary of the in-stream monitoring results.
C.2.c.	*Monitoring shall be performed for the following parameters:* *1) pH* *2) Dissolved Oxygen* *3) Temperature* *4) Total Suspended Solids* *5) Ammonia as Nitrogen* *6) Nitrate plus Nitrite Nitrogen* *7) Total Kjeldahl Nitrogen* *8) Total Nitrogen (calculated)* *9) Dissolved Phosphorus* *10) Total Phosphorus* *11) Escherichia coli*	SWPD	The monitoring program measures the parameters specified in the permit – see Appendix P14.							
C.2.d.	*Monitoring for the parameters listed in Part I.C.2.c) shall be in accordance with Part II.A of this state permit.*	SWPD	Monitoring is conducted in accordance with Part II.A of the permit – see Appendix P14.							
C.2.e.	*The permittee may replace a sampling location with a new proposed location after 15 samples are collected and analyzed. Written notification of the monitoring plan revisions shall be given to the Department in writing and shall include a statistical analysis of the monitoring results, conclusions regarding the data, the proposed new monitoring location, and the reasoning for site location choice.*	SWPD	Fairfax County will follow the procedures specified in the permit if it proposes to replace a sampling location.							

MS4 Action ID	Permit Requirement	Responsible Party	2021 Program Plan Elements (July 1, 2020 through June 30, 2021)	Due Date / Annual Timeline (Permit Year 1)	Due Date / Annual Timeline (Permit Year 2)	Due Date / Annual Timeline (Permit Year 3)	Due Date / Annual Timeline (Permit Year 4)	Due Date / Annual Timeline (Permit Year 5)	Specific Reporting Requirement	2021 Annual Report (July 1, 2020 through June 30, 2021)
	C.3. Floatables Monitoring									
C.3.	*No later than 24 months after the effective date of the permit, the permittee shall develop and implement a floatables monitoring program. The intent of the monitoring program is to determine the loading of floatables from the MS4 to streams within Fairfax County. The permittee will implement the floatables monitoring program as follows:*	SWPD	Fairfax County developed and implemented a floatables monitoring program by March 31, 2017.		**March 31, 2017 ★**	►	►	►		
C.3.a.	*Monitoring shall be conducted at five (5) monitoring sites located at MS4 outfalls and/or streams receiving discharges from the MS4.*	SWPD	Monitoring sites were selected to allow determination of the loading of floatables from the MS4 to streams within Fairfax County.		**October 1, 2016 ★**	►	►	►	*The annual report due October 1, 2016 shall include an update on the development of the floatables monitoring program.*	
C.3.b.	*Monitoring shall be conducted once per quarter after program implementation.*	SWPD	Floatables monitoring is to be conducted once per quarter in accordance with the protocols provided in Appendix P15.			**October 1, 2017 ★**	►	►	*The annual report due October 1, 2017 shall include the monitoring protocols for the floatables monitoring program.*	See Appendix P15 for the monitoring protocols for the floatables monitoring program.
C.3.c.	*The monitoring program shall include the count of floatables visually observed and length or area of sites assessed.*	SWPD	Floatables monitoring includes the count of floatables visually observed and the length or area of sites assessed.				**October 1, 2018 ★**	►	*Beginning with the annual report due October 1, 2018, each following annual report shall include a list of sites monitored, a summary of the monitoring protocols used, and a summary of the monitoring results and analyses.*	See Appendix R14 for a summary of the floatables monitoring results and the list of sites.

MS4 Action ID	Permit Requirement	Responsible Party	2021 Program Plan Elements (July 1, 2020 through June 30, 2021)	Due Date / Annual Timeline — Permit Year 1	2	3	4	5	Specific Reporting Requirement	2021 Annual Report (July 1, 2020 through June 30, 2021)
	C.4. Structural and Source Controls Compliance Monitoring and Tracking									
C.4.a-a.	*The permittee shall maintain an updated electronic database of all known permittee and privately maintained stormwater management (SWM) facilities. The database shall include the following:* *1) The SWM facility type, address, and latitude and longitude (in decimal degrees);* *2) The total pervious and impervious acres treated;* *3) The date brought online (MMYYYY). If the date is unknown, the permittee shall use June 2005 as the date brought online for all previously existing SWM facilities;* *4) The hydrologic unit code (HUC 6) in which the SWM facility is located;* *5) The name of any impaired water segments within each HUC listed on the most recent 305(b)/303(d) Water Quality Assessment Integrated Report to which the SWM facility discharges;* *6) Whether the SWM facility is permittee or privately maintained;* *7) Whether the SWM facility discharges into the permittee's MS4;* *8) Whether a maintenance agreement exists if the SWM is privately maintained; and* *9) The date of last inspection by permittee authorities.* *All known SWM facilities brought online during each reporting year shall be submitted with the appropriate annual report as an electronic file in one of the following formats: shapefile, geodatabase, .xls, .xlsx, .csv, .mdx, .dbf, delimited text, XML, or other file approved by the Department.*	MSMD	• The county uses a combination of ArcGIS and a proprietary asset management system to maintain its stormwater facility inventory. The county asset management system (Infor-EAM) and GIS has been updated to include all of the required tracking metrics listed in the permit requirement (1-9). • The county will provide a list of SWM facilities brought online each reporting year (July 1 – June 30). Facilities that provide solely peak flow control will not be included in the report in accordance with Part I.C.4.b) of the permit.	►	►	►	►	►	• *Each annual report shall include a summary of the program to ensure maintenance of private stormwater management facilities.* • *Each annual report shall include a summary of the program to ensure maintenance of stormwater management facilities maintained by the permittee.* • *Beginning with the annual report due October 1, 2016, each annual report shall include a copy of the updated database in electronic format.*	• See MS4 Action ID B.2.h.2.a.2. for a summary of the program to ensure maintenance of private stormwater management facilities. • See MS4 Action ID B.2.h.1.b. for a summary of the program to ensure maintenance of stormwater management facilities maintained by the county. • See Appendix R15 for a copy of the updated database that contains the list of SWM facilities brought online during FY 2021. Facilities that provide solely peak flow control will not be included in the report in accordance with Part I.C.4.b) of the MS4 permit.

MS4 Action ID	Permit Requirement	Responsible Party	2021 Program Plan Elements (July 1, 2020 through June 30, 2021)	Due Date / Annual Timeline (Permit Year 1	2	3	4	5)	Specific Reporting Requirement	2021 Annual Report (July 1, 2020 through June 30, 2021)
C.4.a-b.	*No later than 36-months of the effective date of this state permit, the list shall be updated to include the required information for SWM facilities known to exist prior to the effective date of this state permit. The updated information shall be submitted with the fourth annual report.*	MSMD	The county will update the list to include facilities known to exist prior to April 1, 2015 by March 31, 2018.			**March 31, 2018 ★**			*The annual report due October 1, 2019 shall include an updated list of stormwater management facilities existing prior to the effective date of this permit.*	• Section C.4 of the permit (Structural and Source Controls Compliance Monitoring and Tracking) specifies data elements and other requirements for tracking stormwater management facilities in an electronic database. In addition to maintaining an electronic database, the County is required to include an updated list of stormwater management facilities existing prior to the effective date of this permit. Fairfax County maintains a database inventory of stormwater management facilities on a regular basis, adding new facilities brought online and updating facility inspection data. County staff coordinate annually with DEQ's NPS Modeling & Data Coordinator (William Keeling) to submit the most up-to-date information on the county's inventory (historic through annual reporting year) of stormwater management facilities to DEQ's online BMP Warehouse (https://apps.deq.virginia.gov/BMP/). Please note that the BMP warehouse did not exist when the county's MS4 permit was written but the County has complied with DEQ requests to submit the requested information electronically via the warehouse. • On August 28, 2018, DEQ's NPS Modeling & Data Coordinator confirmed via email that the County submitted the updated inventory of Stormwater Management Facilities (5,020 facilities), including those existing prior to April 1, 2015 (permit effective date).
C.4.b.	*Facilities that solely provide peak flow control as required by the Fairfax County Code are excluded from the requirements of this section. Inspection and maintenance requirements for these facilities shall be in accordance with all applicable state and local ordinances, regulations, and statutes.*	MSMD	The county conducts inspections and maintenance of peak flow control facilities in accordance with the written protocols described in MS4 Action ID B.2.h.1.a. of this Program Plan.							
	D. TMDL ACTION PLAN AND IMPLEMENTATION									
	D.1. Chesapeake Bay Special Condition									
D.1.b.1.	*No later than 24-months after the effective date of this state permit, the permittee shall develop and submit to the Department for its review and acceptance an approvable phased Chesapeake Bay TMDL Action Plan*	SWPD	• The Chesapeake Bay TMDL Action Plan was submitted to DEQ on March 31, 2017. • The Chesapeake Bay TMDL Action Plan became effective and enforceable on August 15, 2017, when DEQ approved the plan.		**March 31, 2017 ★**	►	►	►	*In accordance with Part I D.1.b)1), the permittee shall submit the Chesapeake Bay TMDL Action Plan no later than 24 months after the permit effective date.*	Fairfax County's Draft Chesapeake Bay TMDL Action Plan was made available for public comment in December 2016, the final plan was submitted to DEQ on March 31, 2017, and DEQ approved the plan on August 15, 2017. It is available on the county website at: https://www.fairfaxcounty.gov/publicworks/sites/publicworks/files/assets/documents/pdf/reports/ms4/chesapeake-bay-tmdl.pdf
D.1.d.2.	*Beginning with the annual report due October 1, 2017, each annual report shall include a list of control measures implemented during the reporting period and the cumulative progress toward meeting the compliance targets for total nitrogen, phosphorus, and total suspended soils.*	SWPD	Beginning with the annual report due October 1, 2017, each annual report will include a list of control measures implemented during the reporting period and the cumulative progress toward meeting the compliance targets for total nitrogen, phosphorus, and total suspended solids.			**October 1, 2017 ★**	►	►	*Beginning with the annual report due October 1, 2017, each annual report shall include a list of control measures implemented during the reporting period and the cumulative progress toward meeting the compliance targets for total nitrogen, phosphorus, and total suspended solids.*	As of June 30, 2021, the county has achieved the following reductions: **TN (lbs/year)** / **TP (lbs/year)** / **TSS (lbs/year)** 76,698.10 / 15,359.44 / 5,282,541.22 See Appendix R16 for a summary of control measures implemented during the reporting period and the cumulative progress toward meeting the compliance targets for total nitrogen, phosphorus, and total suspended solids.

MS4 Action ID	Permit Requirement	Responsible Party	2021 Program Plan Elements (July 1, 2020 through June 30, 2021)	Due Date / Annual Timeline — Permit Year 1	2	3	4	5	Specific Reporting Requirement	2021 Annual Report (July 1, 2020 through June 30, 2021)
D.1.d.3.	*Beginning with the annual report due October 1, 2017, each annual report shall include a list of control measures that were implemented during the reporting cycle and the estimated reduction achieved by the control. For stormwater management controls, the report shall include the information required in Part I.C.4.a) and shall include whether an existing stormwater management control was retrofitted, and if so, the existing stormwater management control type retrofit used.*	SWPD	Beginning with the annual report due October 1, 2017, each annual report will include a list of control measures that were implemented during the reporting cycle and the estimated reduction achieved by the control. For stormwater management controls, the report shall include the information required in Part I.C.4.a) and shall include whether an existing stormwater management control was retrofitted, and if so, the existing stormwater management control type retrofit used.			**October 1, 2017 ★**	►	►	*Beginning with the annual report due October 1, 2017, each annual report shall include a list of control measures that were implemented during the reporting cycle and the estimated reduction achieved by the control. For stormwater management controls, the report shall include the information required in Part I.C.4.a) and shall include whether an existing stormwater management control was retrofitted, and if so, the existing stormwater management control type retrofit used.*	See Appendix R16 for a summary of control measures implemented during the reporting period and the estimated reduction achieved by each control.
D.1.d.4.	*Beginning with the annual report due October 1, 2017, each annual report shall include a list of control measures that are expected to be implemented during the next reporting period and the expected progress toward meeting the compliance targets for total nitrogen, total phosphorus, and total suspended solids.*	SWPD	Beginning with the annual report due October 1, 2017, each annual report will include a list of control measures that are expected to be implemented during the next reporting period and the expected progress toward meeting the compliance targets for total nitrogen, total phosphorus, and total suspended solids.			**October 1, 2017 ★**	►	►	*Beginning with the annual report due October 1, 2017, each annual report shall include a list of control measures that are expected to be implemented during the next reporting period and the expected progress toward meeting the compliance targets for total nitrogen, total phosphorus, and total suspended solids.*	• As reported in the 2017 Annual Report, Fairfax County has completed the control measures in the approved TMDL Action Plan which were over and above the 5% reduction requirement. The County will continue to report additional implemented projects annually. • Appendix R16 contains a summary of control measures that are expected to be implemented during the next reporting period and the expected progress toward meeting the compliance targets for total nitrogen, total phosphorus, and total suspended solids.
	D.2. TMDL Action Plans other than the Chesapeake Bay TMDL									
D.2.a.1.	*No later than 24 months after the effective date of this state permit, the permittee shall submit to the Department TMDL Action Plans to address any new or modified requirements established under this Special Condition for pollutants identified in TMDL wasteload allocations approved prior to the effective date of this state permit.*	SWPD	• TMDL Action Plans other than the Chesapeake Bay TMDL Action Plan were submitted to DEQ on March 31, 2017. • The TMDL Action Plans will become effective and enforceable upon written approval from DEQ.		**March 31, 2017 ★**	►	►	►	*No later than 24 months after the effective date of this state permit, the permittee shall submit to the Department TMDL Action Plans to address any new or modified requirements established under this Special Condition for pollutants identified in TMDL wasteload allocations approved prior to the effective date of this state permit.*	Fairfax County's TMDL Action Plans other than the Chesapeake Bay TMDL were submitted to DEQ on March 31, 2017.
D.2. f.2	*Beginning with the annual report due October 1, 2017, the permittee shall report on the implementation of the TMDL Action Plans and associated evaluation including the results of any monitoring conducted as part of the evaluation.*	SWPD	Beginning with the annual report due October 1, 2017, each annual report will include an update on the implementation of the TMDL Action Plans and associated evaluation including the results of any monitoring conducted as part of the evaluation.			**October 1, 2017 ★**	►	►	*Beginning with the annual report due October 1, 2017, the permittee shall report on the implementation of the TMDL Action Plans and associated evaluation including the results of any monitoring conducted as part of the evaluation.*	See Appendix R17 for a summary of the implementation of the TMDL Action Plans.

MS4 Action ID	Permit Requirement	Responsible Party	2021 Program Plan Elements (July 1, 2020 through June 30, 2021)	Due Date / Annual Timeline — Permit Year 1	2	3	4	5	Specific Reporting Requirement	2021 Annual Report (July 1, 2020 through June 30, 2021)
	E. ANNUAL REPORTING									
E.1	*The permittee shall submit the annual report to the Department, in accordance with the following schedule:* *Reporting Period* — *Annual Report* *April 1, 2015 through June 30, 2015* — *October 1, 2015* *July 1, 2015 through June 30, 2016* — *October 1, 2016* *July 1, 2016 through June 30, 2017* — *October 1, 2017* *July 1, 2017 through June 30, 2018* — *October 1, 2018* *July 1, 2018 through June 30, 2019* — *October 1, 2019* *July 1, 2019 through June 30, 2020* — *October 1, 2020*	SWPD	The annual reports will be submitted in accordance with the schedule laid out in the permit.	►	►	►	►	►		
E.2.a.	*Each annual report shall include the following* *a) Background Information:* *1) The permittee and permit number of the program submitting the annual report;* *2) Any modifications to the MS4 Program Plan as a result of the annual report including a summary of progress toward development and update of MS4 Program Plan components as required by Part I.A.6.;* *3) The reporting dates for which the annual report is being submitted; and* *4) Certification as per Part II.K.*	SWPD	All annual reports will include the required background information.	►	►	►	►	►	*Each annual report shall include the required background information.*	• This annual report is being submitted by Fairfax County, Virginia in accordance with VSMP Permit No. VA0088587. • See MS4 Action ID A.7 for a summary of modifications to the MS4 Program Plan. • This annual report covers July 1, 2020, through June 30, 2021. • The certification required per Part II.K of the permit is contained in the cover letter accompanying this report.
E.2.b.	*A summary of progress toward development of new MS4 Program components developed in accordance with the due dates as specified in the permit;*	SWPD	The annual reports will include a summary of progress toward development of new MS4 Program components.	►	►	►	►	►		
E.2.c.	*A summary of the components implemented under the MS4 Program Plan and an evaluation of the effectiveness of each component. The permittee should attempt to limit any component's narrative summary to no longer than two-pages plus any necessary tables and figures;*	SWPD	The annual reports will include a summary of components implemented and an evaluation of the effectiveness of each component.	►	►	►	►	►	*Each annual report shall include a summary of components implemented and an evaluation of the effectiveness of each component.*	Evaluation of program elements for effectiveness is a continuous process as implementation occurs. Staff meets on an annual basis to review and discuss the MS4 program. No significant changes in program approach or structure occurred during this reporting period. To see how the County has evaluated effectiveness for each permit element, see Appendix R18 for more detail.
E.2.d.	*A summary report of the monitoring programs listed under Part I.C;*	SWPD	The annual reports will include a summary of the monitoring programs listed under Part I.C.	►	►	►	►	►	*Each annual report shall include a summary report of the monitoring programs listed under Part I.C.*	See MS4 Action IDs C.1-4 for a summary of the monitoring programs listed under Part I.C. of the permit.
E.2.e.	*A summary of the implementation of each component listed under Part I.D; and*	SWPD	The annual reports will include a summary of the implementation of components under Part I.D.	►	►	►	►	►	*Each annual report shall include a summary of the implementation of each component listed under Part I.D.*	See MS4 Action IDs D.1.d.1-4., D.2.a.1. and D.2.f.2. for a summary of the implementation of each component listed under Part I.D. of the permit.

MS4 Action ID	Permit Requirement	Responsible Party	2021 Program Plan Elements (July 1, 2020 through June 30, 2021)	Due Date / Annual Timeline — Permit Year 1	2	3	4	5	Specific Reporting Requirement	2021 Annual Report (July 1, 2020 through June 30, 2021)
E.2.f.	*The Specific Reporting Requirements identified in this state permit.*	SWPD	The annual reports will include the Specific Reporting Requirements.	►	►	►	►	►	*Each annual report shall include the Specific Reporting Requirements identified in this state permit.*	The Specific Reporting Requirements identified in the permit are contained in the Specific Reporting Requirement column of this table.

Fairfax County 2021 MS4 Program Plan and Annual Report

Appendix P1

List of Agency Acronyms Referenced in this MS4 Program Plan and Roles and Responsibilities by Agency

VSMP Permit Number VA0088587
9-30-2021

Agency	Permit Section	Responsibilities
Clean Fairfax Council, Inc. (CFC)	I.B.2.j)1)f)	Public Education: litter prevention
Department of Public Works and Environmental Services (DPWES)	I.A.3	Legal Authority
	I.B.2.e)	Discharges to the MS4 not authorized by this permit shall be effectively prohibited
Division of Solid Waste Collection and Recycling (DSWCR)	I.B.2.e)4)	Prohibit dumping or disposal of specified wastes into the MS4; implement & promote collection programs
Fairfax County Park Authority (FCPA)	I.B.2.j)1)c)	Public Education: golf courses
	I.B.2.k)7)	Training: good housekeeping at county recreation facilities
Fairfax County Public Schools (FCPS)	I.B.2.a)	Construction and Post Construction Site Runoff: ensure construction projects are conducted per County ordinances
	I.B.2.b)	Retrofits: Coordinate with County staff on retrofits on FCPS properties
	I.B.2.c)	Roadways: implement roadway SOPs; maintain list of roads, streets, and parking lots
	I.B.2.d)	Pesticides, Herbicides and Fertilizers: develop and implement NMPs as required; track and report Integrated Pest Management Plans
	I.B.2.e)	Illicit Discharges and Improper Disposal: Report any suspected illicit discharges on FCPS property to County staff; eliminate any illicit discharge identified by County staff
	I.B.2.f)	Spill Prevention and Response: Track and document spills and associated response on FCPS properties
	I.B.2.h)	Stormwater Infrastructure Management: provide stormwater facility information to County staff; inspect and maintain conveyance structures draining FCPS property
	I.B.2.i)	County Facilities: implement HP-SWPPPs at identified facilities; ensure FCPS properties have permit-required storm drain markers
	I.B.2.j)	Public Education and Participation: Implement and document stormwater education activities
	I.B.2.k)	Training: document employee certifications; train identified staff
	I.D.1.	Chesapeake Bay Special Condition: support development and implementation of the action plan
	I.D.2.	TMDL Action Plans other than the Chesapeake Bay TMDL: support development and implementation of the action plans

Agency	Permit Section	Responsibilities
Fire and Rescue Department (FRD)	I.A.3	Legal Authority
	I.B.2.e)	Discharges to the MS4 not authorized by this permit shall be effectively prohibited
	I.B.2.f)	Spill Prevention and Response
	I.B.2.k)8)	Training: spill response for emergency response employees
Health Department (HD)	I.A.3	Legal Authority
Land Development Services (LDS)	I.B.2.a)	Construction Site Runoff and Post Construction Runoff from Areas of New Development and Development on Prior Developed Lands
	I.B.2.k)5)	Training and certifications per Virginia Erosion and Sediment Control Law
	I.B.2.k)6)	Training and certifications per Virginia Stormwater Management Act
Maintenance and Stormwater Management Division (MSMD)	I.B.2.c)	Roadways
	I.B.2.e)3)	Discharge of floatables
	I.B.2.h)	Stormwater Infrastructure Management
	I.B.2.i)	County Facilities
	I.C.4.	Structural and Source Controls Compliance Monitoring and Tracking
Neighborhood and Community Services (NCS)	I.B.2.d)	Pesticide, Herbicide, and Fertilizer Application
Northern Virginia Soil and Water Conservation District (NVSWCD)	I.B.2.j)1)b)	Public Education: individual and group involvement in local water quality improvement initiatives
	I.B.2.j)1)i)	Public Education: voluntary stormwater management techniques
Solid Waste Management Program (SWMP)	I.B.2.j)1)d)	Public Education: used oil and household hazardous waste
	I.B.2.j)1)e)	Public Education: pet waste and household yard waste
Stormwater Planning Division (SWPD)	I.A	MS4 Program Coordination
	I.B.1	Planning
	I.B.2.b)	Retrofitting on Prior Developed Lands
	I.B.2.d)	Pesticide, Herbicide, and Fertilizer Application
	I.B.2.e)1)	Identification of non-stormwater discharges prohibited by County
	I.B.2.e)3)	Discharge of floatables
	I.B.2.e)5) I.B.2.e)6)	Program to locate and eliminate illicit discharges and improper disposal
	I.B.2.g)	Industrial and High Risk Runoff
	I.B.2.j)2),3), 4)	Public Education/Participation Coordination
	I.B.2.j)1)a)	Public Education: illicit discharges
	I.B.2.j)1)g)	Public Education: residential car washing
	I.B.2.j)1)h)	Public Education: pesticides, herbicides, and fertilizers
	I.B.2.j)1)j)	Public Education: commercial, industrial, and institutional entities

Agency	Permit Section	Responsibilities
Stormwater Planning Division (SWPD)	I.B.2.k)	Training Coordination
	I.B.2.k)1)	Training: illicit discharges
	I.B.2.k)2)	Training: good housekeeping during road, street and parking lot maintenance
	I.B.2.k)3)	Training: good housekeeping at maintenance and public works facilities
	I.B.2.k)4)	Training: tracking of pesticides, herbicides and fertilizer certifications
	I.B.2.k)9)	Training: coordination of training documentation
	I.B.2.l)	Water Quality Screening Programs
	I.B.2.m)	Infrastructure Coordination
	I.C.1.	Biological Stream Monitoring
	I.C.2.	In-Stream Monitoring
	I.C.3.	Floatables Monitoring
	I.D.1.	Chesapeake Bay Special Condition
	I.D.2.	TMDL Action Plans other than the Chesapeake Bay TMDL
Wastewater Collection Division (WCD)	I.B.2.e)2)	Sanitary sewer system inspection

Fairfax County 2021 MS4 Program Plan and Annual Report

Appendix P2

Summary of Potential Stormwater Projects for Consideration of Implementation

VSMP Permit Number VA0088587
9-30-2021

Fairfax County MS4 Permit VA0088587
Part I.B.1. Planning:
Updated Summary of Potential Stormwater Management Projects

#	Project Name	Substantial Completion	Type of Project or BMP	Number of Acres Treated	Impervious Acres Treated	Pervious Acres Treated	Estimated Cost of Implementation ($)	Estimated Amount of Total Pollutant Reduction (lbs/yr)			Pollutant Reduction Calculation Method (Note 3, Note 4)	Condition of the Downstream Channel (Index of Biological Integrity)	Feasibility for Implementation
								TN	TP	TSS			
	Construction Complete:												
1	Rolling Valley West Turf Field	4/1/2015	Dry Swale	1.45	0.00	1.45	$16,700	11.62	0.39	217	Chesapeake Bay Program Retrofit Equations	PC805 (2008) Very Poor	Excellent
2	Americana Park	4/30/2015	Land Use Change	0.69	0.00	0.69	$30,000	4.00	0.00	-	Land Use Change	AC1002 (2010) Poor	Excellent
3	Mason Neck West	5/1/2015	Constructed Wetland	12.01	1.67	10.34	$270,360	52.77	4.35	3,011	Chesapeake Bay Program Retrofit Equations	Old Colchester Park IBI (2011) Poor MBGR02 (1999) Fair	Excellent
4	Oakton Swim & Racquet	6/4/2015	Bioretention	3.09	1.29	1.80	$108,333	5.64	0.49	340	Chesapeake Bay Program Retrofit Equations	DF0605 (2006) Very Poor	Excellent
			Bioretention	18.73	2.55	16.18	$108,333	39.56	2.54	1,474	Chesapeake Bay Program Retrofit Equations		
			Bioretention	21.92	3.59	18.33	$108,333	15.35	1.03	612	Chesapeake Bay Program Retrofit Equations		
5	Difficult Run Tributary at Oakton Estates (DF9045)	6/26/2015	Stream Restoration	56.50	9.30	47.20	$340,000	93.65	18.92	6,524	Urban Stream Restoration Protocols	DF0605 (2006) Very Poor	Excellent
6	Green Hollow Court Maintenance Improvements	8/28/2015	Outfall Restoration	1.07	0.90	0.17	$92,868	3.79	1.74	3,322	Chesapeake Bay Program Retrofit Equations	PC1201 (2012) Very Poor	Excellent
7	Paul Spring Branch Tributary at GMP	9/10/2015	Stream Restoration	48.75	12.40	36.35	$330,643	185.19	41.36	5,121	Urban Stream Restoration Protocols	LH0901 (2009) Poor	Excellent
8	Crestleigh Way Outfall Restoration	9/14/2015	Outfall Restoration	13.70	3.40	10.30	$113,306	2.12	0.98	1,861	Chesapeake Bay Program Retrofit Equations	AC0402 (2004) Very Poor	Excellent
9	Lenox Drive Outfall Restoration	10/30/2015	Outfall Restoration	18.43	5.62	12.81	$206,268	5.29	2.44	4,939	Chesapeake Bay Program Retrofit Equations	AC1202 (2012) Very Poor	Excellent
10	Rainbow Bridge Lane Outfall Restoration	12/15/2015	Outfall Restoration	2.09	1.14	0.95	$86,637	4.20	1.11	1,946	Chesapeake Bay Program Retrofit Equations	PCSR03 (1999) Fair	Excellent
			Subtotal:	**198.43**	**41.86**	**156.57**	**$1,811,782**	**423.19**	**75.35**	**29,369**			
	In Construction:												
11	George C. Marshall HS Cistern	N/A	Rainwater Harvesting	16.32	10.12	6.20	$1,753,000	114.20	9.28	6,342	Chesapeake Bay Program Retrofit Equations	PM1202 (2012) Very Poor	Excellent
12	Penderbrook (DF9045/0691DP)	N/A	Constructed Wetland	22.53	2.60	19.93	$105,021	71.61	5.70	3,836	Chesapeake Bay Program Retrofit Equations	DF0605 (2006) Very Poor	Excellent
13	Colony Park (0390DP & 0175 DP)	N/A	Constructed Wetland	68.65	19.31	49.34	$142,823	36.60	3.60	2,785	Chesapeake Bay Program Retrofit Equations	PCSI01 (1999) Very Poor	Excellent
			Constructed Wetland	68.65	19.31	49.34	$142,823	37.57	3.70	2,859	Chesapeake Bay Program Retrofit Equations		
			Stream Restoration	68.65	19.31	49.34	$175,074	124.50	26.07	8,989	Urban Stream Restoration Protocols		
14	Golden Woods	N/A	Constructed Wetland	29.60	4.50	25.10	$464,300	127.77	10.74	7,530	Chesapeake Bay Program Retrofit Equations	PNCL01 (1999) Poor	Excellent
15	Broyhill McLean	N/A	Bioretention	26.51	10.12	16.39	$500,000	55.66	4.71	3,215	Chesapeake Bay Program Retrofit Equations	DE1001 (2010) Poor	Excellent
16	Flatlick Phase I	N/A	Constructed Wetland	8.39	3.59	4.80	$325,765	42.18	4.74	3,913	Chesapeake Bay Program Retrofit Equations	CUFB01 (1999) Very Poor	Excellent
			Stream Restoration	2,460.00	716.00	1,744.00	$1,725,604	1,521.85	200.45	69,108	Urban Stream Restoration Protocols		Excellent
17	Potomac Meadows Pond Retrofits	N/A	Constructed Wetland	30.02	5.49	24.53	$66,700	58.15	5.10	3,679	Chesapeake Bay Program Retrofit Equations	PNMR01 (1999) Fair	Excellent
			Dry Swale	30.02	5.49	24.53	$46,300	94.70	6.49	3,942	Chesapeake Bay Program Retrofit Equations		
			Constructed Wetland	2.98	0.60	2.38	$41,750	6.02	0.54	396	Chesapeake Bay Program Retrofit Equations		
			Dry Swale	2.98	0.60	2.38	$29,250	9.81	0.69	424	Chesapeake Bay Program Retrofit Equations		
18	Accotink Tributary at Daventry	N/A	Stream Restoration	128.77	73.40	55.37	$708,000	121.89	27.05	9,325	Urban Stream Restoration Protocols	AC0501 (2005) Fair	Excellent
19	Accotink Tributary 9232(Wakefield Park North)	N/A	Stream Restoration	103.00	40.00	63.00	$880,000	64.88	58.82	38,821	Urban Stream Restoration Protocols	ACAC04 (1999) Very Poor	Excellent
20	Accotink Tributary 9210(Wakefield Park South)	N/A	Stream Restoration	279.00	99.00	180.00	$2,901,000	202.50	183.60	121,176	Urban Stream Restoration Protocols	ACAC04 (1999) Very Poor	Excellent
			Subtotal:	**3,346.07**	**1,029.44**	**2,316.63**	**$10,007,410**	**2,689.90**	**551.28**	**286,341**			
	In Design:												
21	Queen Victoria	N/A	Stream Restoration	213.76	75.96	137.80	$3,456,587	1,483.48	327.38	112,870	Urban Stream Restoration Protocols	PC0709 (2007) Very Poor	Good
22	Bullneck at Springhill Rec Center	N/A	Stream Restoration	102.30	25.29	77.01	$2,918,669	142.50	129.20	85,272	Urban Stream Restoration Interim Rates	BNBN01 (1999) Fair	Good
23	Franklin Park/Patton Terrace	N/A	Dry Swale	1.12	0.34	0.78	$75,077	3.86	0.66	109	Chesapeake Bay Program Retrofit Equations	PMLP01 (1999) Poor	Good
			Infiltration	0.38	0.11	0.27	$63,856	1.53	0.26	43	Chesapeake Bay Program Retrofit Equations		
			Dry Swale	0.93	0.27	0.66	$81,137	3.04	0.52	86	Chesapeake Bay Program Retrofit Equations		
			Infiltration	0.76	0.23	0.53	$73,680	2.98	0.51	84	Chesapeake Bay Program Retrofit Equations		
			Dry Swale	0.74	0.22	0.52	$115,477	2.97	0.51	84	Chesapeake Bay Program Retrofit Equations		
			Infiltration	0.36	0.11	0.25	$54,851	1.45	0.25	41	Chesapeake Bay Program Retrofit Equations		
			Dry Swale	3.95	1.16	2.79	$55,214	4.20	0.72	119	Chesapeake Bay Program Retrofit Equations		
			Infiltration	2.02	0.60	1.42	$508,391	8.12	1.39	230	Chesapeake Bay Program Retrofit Equations		
			Dry Swale	1.18	0.38	0.80	$113,794	3.87	0.66	110	Chesapeake Bay Program Retrofit Equations		
			Dry Swale	1.83	0.46	1.37	$125,914	5.78	0.99	164	Chesapeake Bay Program Retrofit Equations		
			Dry Swale	0.46	0.12	0.34	$27,720	1.60	0.28	45	Chesapeake Bay Program Retrofit Equations		
			Infiltration	0.24	0.06	0.18	$83,504	0.96	0.17	27	Chesapeake Bay Program Retrofit Equations		
			Permeable Pavement	0.47	0.12	0.35	$213,643	1.89	0.32	53	Chesapeake Bay Program Retrofit Equations		
			Infiltration	0.32	0.08	0.24	$38,477	1.28	0.22	36	Chesapeake Bay Program Retrofit Equations		
			Permeable Pavement	1.29	0.33	0.96	$154,297	4.67	0.80	132	Chesapeake Bay Program Retrofit Equations		
			Infiltration	0.55	0.14	0.41	$43,389	2.04	0.35	58	Chesapeake Bay Program Retrofit Equations		
			Permeable Pavement	1.83	0.47	1.36	$144,802	7.68	1.22	197	Chesapeake Bay Program Retrofit Equations		
			Dry Swale	0.33	0.11	0.22	$70,027	1.31	0.22	37	Chesapeake Bay Program Retrofit Equations		
24	Dead Run at Dominican Retreat	N/A	Stream Restoration	148.74	52.81	95.93	$2,459,816	123.75	112.20	74,052	Urban Stream Restoration Interim Rates	DE1001 (2010) Poor	Good
25	Colvin Run Ph I	N/A	Stream Restoration	3,024.00	936.21	2,087.79	$3,632,000	1,552.97	486.15	167,606	Urban Stream Restoration Protocols	DF0804 (2008) Good	Good

Fairfax County MS4 Permit VA0088587
Part I.B.1. Planning:
Updated Summary of Potential Stormwater Management Projects

#	Project Name	Substantial Completion	Type of Project or BMP	Number of Acres Treated	Impervious Acres Treated	Pervious Acres Treated	Estimated Cost of Implementation ($)	Estimated Amount of Total Pollutant Reduction (lbs/yr)			Pollutant Reduction Calculation Method (Note 3, Note 4)	Condition of the Downstream Channel (Index of Biological Integrity)	Feasibility for Implementation
								TN	TP	TSS			
26	Indian Run at Indian Run Court	N/A	Stream Restoration	474.80	41.10	433.70	$3,960,000	195.00	176.80	116,688	Urban Stream Restoration Interim Rates	CA0801 (2008) Very Poor	Good
27	Quander Road outfall	N/A	Stream Restoration	16.94	3.45	13.49	$1,023,000	62.78	56.92	37,560	Urban Stream Restoration Protocols	BE0901 (2009) Poor	Good
28	Retrofit Facility DP0625 West Potomac High School	N/A	Constructed Wetland	38.25	18.19	20.06	$197,544	51.69	6.02	5,046	Chesapeake Bay Program Retrofit Equations	BE0601 (2006) Very Poor	Good
29	Nottoway Park retrofit Trib 1	N/A	Outfall Restoration	39.32	12.10	27.22	$574,993	18.00	16.32	10,771	Chesapeake Bay Program Retrofit Equations	ACAC02 (1999) Poor	Good
			Outfall Restoration	27.08	9.21	17.87	$574,993	17.25	15.64	10,322	Chesapeake Bay Program Retrofit Equations	ACAC02 (1999) Poor	Good
30	Oakford Drive stream restoration	N/A	Stream Restoration	97.92	46.67	51.25	$998,600	112.50	102.00	67,320	Urban Stream Restoration Interim Rates	AC0502)2005) Poor	Good
31	Flatlick Ph II	N/A	Stream Restoration	3,349.00	1,043.20	2,305.80	$6,185,000	3,247.00	350.00	122,000	Urban Stream Restoration Protocols	CUFB01 (1999) Very Poor	Good
32	Flatlick Ph III	N/A	Stream Restoration	3,989.40	1,332.46	2,656.94	$2,656,000	324.38	294.10	194,106	Urban Stream Restoration Interim Rates	CU0902 (2009) Poor	Good
33	Turkey Run at Truro	N/A	Stream Restoration	259.40	67.88	191.52	$2,716,000	268.61	243.54	160,738	Urban Stream Restoration Interim Rates	ACAC04 (1999) Very Poor	Good
34	Mantua ES	N/A	Subsurface Chambers	3.68	2.49	1.19	$475,000	0.00	0.00	-	Chesapeake Bay Program Retrofit Equations	ACAC03 (1999) Very Poor	Good
35	Dead Run Segment 2/3	N/A	Stream Restoration	716.87	274.22	442.65	$3,300,000	210.00	190.40	125,664	Urban Stream Restoration Interim Rates	DE1001 (2010) Poor	Good
36	Pike Branch @ Wilton Road	N/A	Stream Restoration	1,288.00	478.00	810.00	$2,000,000	101.25	91.80	60,588	Urban Stream Restoration Interim Rates	CA1201 (2012) Poor	Good
37	Lake Martin Tributaries	N/A	Stream Restoration	29.30	4.10	25.20	$2,023,000	150.00	136.00	89,760	Urban Stream Restoration Interim Rates	DF1109 (2011) Fair	Good
38	Pohick Tributary at Green Tree Village	N/A	Stream Restoration	208.10	62.30	145.80	$2,694,415	198.75	180.20	118,932	Urban Stream Restoration Interim Rates	PC1102 (2011) Very Poor	Good
39	Long Branch at Long Branch Falls Park	N/A	Stream Restoration	80.00	26.00	54.00	$1,085,126	60.00	54.40	35,904	Urban Stream Restoration Interim Rates	AC0401 (2004) Poor	Good
40	Old Courthouse Spring Branch	N/A	Stream Restoration	368.95	238.18	130.77	$4,423,000	255.00	231.20	152,592	Urban Stream Restoration Interim Rates	DF1005 (2010) Fair	Good
41	Pike Branch Tributary at Ridgeview Park	N/A	Stream Restoration	431.10	126.14	304.96	$5,530,000	225.00	204.00	134,640	Urban Stream Restoration Interim Rates	CA1201 (2012) Poor	Good
42	Turkeycock Run at Mason District Park	N/A	Stream Restoration	109.00	27.60	81.40	$2,940,000	127.50	115.60	76,296	Urban Stream Restoration Interim Rates	CA1301 (2013) Poor	Good
43	Crook Branch	N/A	Stream Restoration	811.34	275.88	535.46	$2,900,000	217.50	197.20	130,152	Urban Stream Restoration Interim Rates	ACAC03 (1999) Very Poor	Good
44	Windy Hill Stream Restoration	N/A	Stream Restoration	31.30	7.00	24.30	$790,000	48.75	44.20	29,172	Urban Stream Restoration Interim Rates	SCSC01 (1999) Very Poor	Good
45	Indian Run at Columbia Road	N/A	Stream Restoration	466.86	246.36	220.50	$850,000	27.00	24.48	16,157	Urban Stream Restoration Interim Rates	CA0801 (2008) Very Poor	Good
46	Lower Potomac Ball Park	N/A	Pond Retrofit	29.50	8.20	21.30	$910,000	119.52	4.75	5,757	Chesapeake Bay Program Retrofit Equations	PCPC04 (1999) Fair	Good
47	Leigh Meadows	N/A	Pond Retrofit	8.80	2.20	6.60	$2,000,000	36.94	1.42	1,697	Chesapeake Bay Program Retrofit Equations	DF0805 (2008) Fair	Good
			Stream Restoration					67.50	61.20	40,392	Urban Stream Restoration Interim Rates		
48	Centreville Green Pond 1	N/A	Pond Retrofit	38.24	31.34	6.90	$440,000	304.08	17.35	24,547	Chesapeake Bay Program Retrofit Equations	LR0901 (2009) Poor	Good
49	Centreville Green Pond 2	N/A	Pond Retrofit	19.90	15.60	4.30	$470,000	97.93	5.50	7,742	Chesapeake Bay Program Retrofit Equations	LR0901 (2009) Poor	Good
50	Luther Jackson Middle School	N/A	Pond Retrofit	42.50	37.50	5.00	$300,000	251.25	14.71	20,989	Chesapeake Bay Program Retrofit Equations	AC0901 (2009) Very Poor	Good
			Bioretention	0.30	0.30	0.00	$30,000	3.54	0.28	263	Chesapeake Bay Program Retrofit Equations		
			Bioretention	0.46	0.46	0.00	$30,000	5.42	0.42	403	Chesapeake Bay Program Retrofit Equations		
			Land Use Change	0.09		0.09	$10,000	0.52	0.00	-	Land Use Change		
			Dry Swale	0.45	0.45	0.00	$20,000	5.30	0.41	395	Chesapeake Bay Program Retrofit Equations		
			Permeable Pavement	0.07	0.07	0.00	$10,000	0.82	0.06	61	Chesapeake Bay Program Retrofit Equations		
			Permeable Pavement	0.18	0.18	0.00	$60,000	2.12	0.17	158	Chesapeake Bay Program Retrofit Equations		
			Dry Swale	0.16	0.16	0.00	$50,000	1.89	0.15	140	Chesapeake Bay Program Retrofit Equations		
			Tree Plantings	0.30	0.00	0.30	$10,000	2.28	0.11	40	Chesapeake Bay Program Retrofit Equations		
			Wet Swale	3.30	2.10	1.20	$140,000	28.16	1.47	2,016	Chesapeake Bay Program Retrofit Equations		
51	West Ox Bus Operations Center Expansion	N/A	Permeable Pavement	0.08	0.08	0.00	$5,501	0.80	0.09	73	Chesapeake Bay Program Retrofit Equations	LRLR001 (1999) Very Poor	Good
			Permeable Pavement	0.42	0.42	0.00	$83,249	4.16	0.49	380	Chesapeake Bay Program Retrofit Equations		
52	Innovation Station	N/A	Bioretention	0.76	0.76	0.00	$170,000	9.22	0.72	686	Chesapeake Bay Program Retrofit Equations	HC0802 (2008) Poor	Good
53	Bucknell ES	N/A	Dry Swale	0.18	0.03	0.15	$9,827	1.31	0.09	52	Chesapeake Bay Program Retrofit Equations	LH0701 (2007) Poor	Good
			Dry Swale	0.23	0.15	0.08	$9,394	2.15	0.22	161	Chesapeake Bay Program Retrofit Equations		
			Dry Swale	0.32	0.12	0.20	$750	2.40	0.20	137	Chesapeake Bay Program Retrofit Equations		
			Dry Swale	0.08	0.01	0.07	$6,109	0.56	0.03	19	Chesapeake Bay Program Retrofit Equations		
			Permeable Pavement	0.14	0.14	0.00	$40,989	1.52	0.18	139	Chesapeake Bay Program Retrofit Equations		
			Permeable Pavement	0.44	0.06	0.38	$23,082	3.13	0.20	117	Chesapeake Bay Program Retrofit Equations		
			Bioretention	0.10	0.10	0.00	$13,463	1.09	0.43	100	Chesapeake Bay Program Retrofit Equations		
			Bioretention	0.15	0.15	0.00	$16,454	1.64	0.19	150	Chesapeake Bay Program Retrofit Equations		
			Filtering Practices	0.11	0.06	0.05	$12,500	0.55	0.07	57	Chesapeake Bay Program Retrofit Equations		
54	Newington Forest ES	N/A	Infiltration	0.67	0.67	0.00	$38,989	7.51	0.59	559	Chesapeake Bay Program Retrofit Equations	PCSR03 (1999) Fair	Good
			Land Use Change	0.10	0.00	0.10	$2,514	0.58	0.00	-	Land Use Change		
			Land Use Change	0.17	0.00	0.17	$3,681	0.99	0.00	-	Land Use Change		
			Tree Plantings	0.14	0.00	0.14	$13,387	1.00	0.05	19	Land Use Change		
55	Cherry Run ES	N/A	Dry Swale	0.59	0.48	0.11	$64,200	6.59	0.48	446	Chesapeake Bay Program Retrofit Equations	PC1104 (2011) Very Poor	Good
			Bioretention	0.53	0.17	0.36	$34,900	5.02	0.27	218	Chesapeake Bay Program Retrofit Equations		
			Dry Swale	1.44	0.05	1.39	$69,500	11.82	0.42	258	Chesapeake Bay Program Retrofit Equations		

Fairfax County MS4 Permit VA0088587
Part I.B.1. Planning:
Updated Summary of Potential Stormwater Management Projects

#	Project Name	Substantial Completion	Type of Project or BMP	Number of Acres Treated	Impervious Acres Treated	Pervious Acres Treated	Estimated Cost of Implementation ($)	Estimated Amount of Total Pollutant Reduction (lbs/yr)			Pollutant Reduction Calculation Method (Note 3, Note 4)	Condition of the Downstream Channel (Index of Biological Integrity)	Feasibility for Implementation
								TN	TP	TSS			
56	South Lakes HS	N/A	Infiltration	0.77	0.70	0.07	$85,000	5.62	0.43	401	Chesapeake Bay Program Retrofit Equations	DF1012 (2010) Fair	Good
			Filterra	0.77	0.70	0.07	$23,000	6.51	0.49	464	Chesapeake Bay Program Retrofit Equations		
			Filterra	0.24	0.23	0.01	$18,000	2.07	0.16	151	Chesapeake Bay Program Retrofit Equations		
			Filterra	0.25	0.24	0.01	$18,000	2.16	0.17	158	Chesapeake Bay Program Retrofit Equations		
			Filterra	0.56	0.51	0.05	$18,000	4.74	0.36	338	Chesapeake Bay Program Retrofit Equations		
			Filterra	0.27	0.26	0.01	$18,000	2.33	0.18	171	Chesapeake Bay Program Retrofit Equations		
			Filterra	1.67	1.50	0.17	$27,500	14.05	1.06	996	Chesapeake Bay Program Retrofit Equations		
57	West Springfield HS	N/A	Permeable Pavement	0.73	0.44	0.29	$63,170	6.71	0.66	483	Chesapeake Bay Program Retrofit Equations	PCPC02 (1999) Very Poor	Good
			Permeable Pavement	1.12	0.96	0.17	$21,653	0.00	0.00	-	Chesapeake Bay Program Retrofit Equations		
			Bioretention	0.46	0.37	0.09	$27,545	4.66	0.51	384	Chesapeake Bay Program Retrofit Equations		
			Subtotal:	**16,501.91**	**5,546.02**	**10,955.89**	**$67,825,350**	**10,318.04**	**3,912.57**	**2,247,583**			
	Scoping Projects												
58	Belgravia Court Outfall Restoration	N/A	Outfall Restoration	25.30	3.28	22.02	Note 1	Note 1	Note 1	Note 1	Chesapeake Bay Program Retrofit Equations	NINI01 (1999) Excellent	Good
59	Brevity Drive Outfall Restoration	N/A	Outfall Restoration	82.49	11.22	71.27	$280,000	15.00	13.60	8,976	Chesapeake Bay Program Retrofit Equations	DF0602 (2006) Poor	Good
60	Bush Hill Outfall Restoration	N/A	Outfall Restoration	35.91	10.38	25.54	$350,000	18.75	17.00	11,220	Chesapeake Bay Program Retrofit Equations	N/A (flows into City of Alexandria)	Good
61	Forest Villa Lane 1537 Outfall Restoration	N/A	Outfall Restoration	41.08	10.03	31.05	Note 1	Note 1	Note 1	Note 1	Chesapeake Bay Program Retrofit Equations	PM0601 (2006) Very Poor	Good
62	Forest Villa Lane 1558 Outfall Restoration	N/A	Outfall Restoration	50.43	12.14	38.29	Note 1	Note 1	Note 1	Note 1	Chesapeake Bay Program Retrofit Equations	PM0601 (2006) Very Poor	Good
63	Pratt Street Outfall Restoration	N/A	Outfall Restoration	89.57	32.81	56.77	$140,000	7.50	6.80	4,488	Chesapeake Bay Program Retrofit Equations	CA1002 (2010) Poor, CABA01 (1999) Very	Good
64	Toll House Road Outfall Restoration	N/A	Outfall Restoration	24.58	6.41	18.17	$280,000	15.00	13.60	8,976	Chesapeake Bay Program Retrofit Equations	ACAC04 (1999) Very Poor	Good
65	Wellfleet Court Outfall Restoration	N/A	Outfall Restoration	24.80	8.91	15.90	$70,000	3.75	3.40	2,244	Chesapeake Bay Program Retrofit Equations	PM0904 (2009) Very Poor	Good
66	Jefferson Fire Station	N/A	LID Site Retrofit	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	CATR01 (1999) Very Poor	Good
67	John Marshall Library	N/A	LID Site Retrofit	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	CA0802 (2008) Very Poor	Good
68	Lorton Volunteer Fire Station	N/A	LID Site Retrofit	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	PCPC04 (1999) Fair	Good
69	McLean Community Center	N/A	LID Site Retrofit	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	DE1301 (2013) Missing, DE1001 (2010)	Good
70	Oakton HS	N/A	LID Site Retrofit	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	ACAC02 (1999) Poor	Good
71	Mount Vernon Woods ES	N/A	LID Site Retrofit	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	DC1102 (2011) Very Poor, DCNF01 (1999)	Good
72	Belle View ES	N/A	LID Site Retrofit	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	BE0901 (2009) Poor	Good
73	Waynewood ES	N/A	LID Site Retrofit	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	N/A (drains directly to Potomac River)	Good
74	White Oaks ES	N/A	LID Site Retrofit	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	PC1303 (2013) Missing, PC1006 (2010) Poor, PCPC02 (1999) Very Poor	Good
75	Centre Ridge Pd 6 Sec 12D-1 (0736DP)	N/A	Pond Retrofit (0736DP)	52.90	20.00	32.90	$642,000	268.37	11.72	14,924	Chesapeake Bay Program Retrofit Equations	N/A	Good
76	Flint Hill Manor Townhouses	N/A	Pond Retrofit (0073DP)	50.70	27.10	23.60	$200,000	76.02	3.73	5,000	Chesapeake Bay Program Retrofit Equations	ACAC01 (1999) Very Poor	Good
77	D'Evereaux West Sec 2	N/A	Pond Retrofit (0226DP)	51.59	11.90	39.69	$429,000	257.30	9.70	11,410	Chesapeake Bay Program Retrofit Equations	DC1201 (2012) Poor	Good
78	Ashburton Manors Sec 1	N/A	Pond Retrofit (1001DP)	17.60	6.80	10.80	$200,000	47.47	2.09	2,667	Chesapeake Bay Program Retrofit Equations	HC1002 (2010) Very Poor	Good
79	Beverly Manor	N/A	Pond Retrofit (0193DP)	43.50	28.10	15.40	$200,000	66.14	3.47	4,768	Chesapeake Bay Program Retrofit Equations	DE0601 (2006) Very Poor	Good
80	London Towne West Sec 2	N/A	Pond Retrofit (0326DP)	40.33	15.70	24.63	$390,000	175.37	7.73	9,890	Chesapeake Bay Program Retrofit Equations	CU1204 (2012) Poor	Good
81	Big Rocky Forest Regional Pond C-30	N/A	Pond Retrofit (0865DP)	189.71	61.30	128.41	$1,655,000	839.87	34.91	43,360	Chesapeake Bay Program Retrofit Equations	CU1001 (2010) Poor	Good
82	Sully Station Ph 2 Pd 7	N/A	Pond Retrofit (0964DP)	59.48	31.90	27.58	$525,000	206.16	10.13	13,581	Chesapeake Bay Program Retrofit Equations	CU1204 (2012) Poor	Good
83	Rosehaven Estates	N/A	Pond Retrofit (1235DP)	31.94	12.30	19.64	$200,000	86.99	3.82	4,880	Chesapeake Bay Program Retrofit Equations	ACAC01 (1999) Very Poor	Good
84	Middleton Farm Sec 1	N/A	Pond Retrofit (1349DP)	36.86	15.50	21.36	$398,000	166.65	7.54	9,754	Chesapeake Bay Program Retrofit Equations	HC1002 (2010) Very Poor	Good
85	Piney Branch Rd, Rt 29 Improvements	N/A	Pond Retrofit (DP0361)	31.42	19.20	12.22	$280,000	102.70	5.28	7,208	Chesapeake Bay Program Retrofit Equations	PHPI01 (1999) Very Poor	Good
86	Upper Wolftrap Creek Reg Pond	N/A	Pond Retrofit (0003DP)	293.42	137.80	155.62	$1,514,000	703.28	33.02	43,430	Chesapeake Bay Program Retrofit Equations	DFWC01 (1999) Very Poor	Good
87	Reston Sec 48 Blks 2, 3	N/A	Pond Retrofit (0111DP)	24.04	10.60	13.44	$200,000	57.51	2.64	3,444	Chesapeake Bay Program Retrofit Equations	DF0703 (2007) Very Poor	Good
88	Seven Oaks Sec 1 Pd 1	N/A	Pond Retrofit (0351DP)	10.68	6.40	4.28	$200,000	35.08	1.79	2,439	Chesapeake Bay Program Retrofit Equations	CA1303 (2013) Very Poor	Good
89	Copper Crossing Sec 1 Pd 1	N/A	Pond Retrofit (0426DP)	8.94	2.30	6.64	$200,000	54.69	2.12	2,544	Chesapeake Bay Program Retrofit Equations	HCHC02 (1999) Very Poor	Good
90	Fairland Towns	N/A	Pond Retrofit (0790DP)	17.60	8.40	9.20	$200,000	58.14	2.74	3,618	Chesapeake Bay Program Retrofit Equations	CA0601 (2006) Fair	Good
91	Brittenford Dr.	N/A	Stream Restoration	379.30	30.20	349.10	$5,005,000	288.75	261.80	172,788	Urban Stream Restoration Interim Rates	DF1205 (2012) Poor	Good
92	Greendale Golf Course (DC9214)	N/A	Stream Restoration	268.84	24.35	244.49	$2,866,500	165.38	149.94	98,960	Urban Stream Restoration Interim Rates	DC1201 (2012) Poor	Good
93	Scotts Run – South (Stream Valley Park)(SC234/SC232)	N/A	Stream Restoration	600.00	418.00	182.00	$2,925,000	168.75	153.00	100,980	Urban Stream Restoration Interim Rates	SCSC01 (1999) Very Poor	Good
94	Snakeden Branch(DF92102)	N/A	Stream Restoration	212.20	95.47	116.73	$3,341,000	192.75	174.76	115,342	Urban Stream Restoration Interim Rates	DFSB02 (1999) Poor	Good
95	Greendale Golf Course(DC9213)	N/A	Stream Restoration	260.84	24.35	236.49	$3,035,500	175.13	158.78	104,795	Urban Stream Restoration Interim Rates	DC1201 (2012) Poor	Good
96	Rabbit Branch Trib @ Collingham Dr(PC9256)	N/A	Stream Restoration	271.33	32.62	238.71	$5,850,000	225.00	204.00	134,640	Urban Stream Restoration Interim Rates	PC0904 (2009) Very Poor	Good
97	Colvin Run - Ph II Trib	N/A	Stream Restoration	254.00	253.69	0.31	$2,600,000	150.00	136.00	89,760	Urban Stream Restoration Interim Rates	DFCR02 (1999) Poor	Good
98	Unnamed Trib to Sideburn Branch(PC9241)	N/A	Stream Restoration	145.60	46.28	99.32	$4,680,000	270.00	244.80	161,568	Urban Stream Restoration Interim Rates	PC1402 (2014) Very Poor	Good
99	Flag Run DS 495(AC9229)	N/A	Stream Restoration	351.30	130.23	221.07	$3,185,000	183.75	166.60	109,956	Urban Stream Restoration Interim Rates	AC0503 (2005) Very Poor	Good
100	Old Courthouse Spring Branch - Phase II	N/A	Stream Restoration	421.50	255.58	165.92	$1,560,000	90.00	81.60	53,856	Urban Stream Restoration Interim Rates	DF1005 (2010) Fair	Good

Fairfax County MS4 Permit VA0088587
Part I.B.1. Planning:
Updated Summary of Potential Stormwater Management Projects

#	Project Name	Substantial Completion	Type of Project or BMP	Number of Acres Treated	Impervious Acres Treated	Pervious Acres Treated	Estimated Cost of Implementation ($)	Estimated Amount of Total Pollutant Reduction (lbs/yr)			Pollutant Reduction Calculation Method (Note 3, Note 4)	Condition of the Downstream Channel (Index of Biological Integrity)	Feasibility for Implementation
								TN	TP	TSS			
101	Rabbit Branch Trib @ Tapestry Dr (PC9268)	N/A	Stream Restoration	243.57	25.67	217.90	$5,200,000	300.00	272.00	179,520	Urban Stream Restoration Interim Rates	PCRA01 (1999) Poor	Good
102	Cove Creek @ Wakerobin	N/A	Stream Restoration	50.00	43.25	6.75	$1,027,000	59.25	53.72	35,455	Urban Stream Restoration Interim Rates	DF1012 (2010) Fair	Good
103	Danbury Forest	N/A	Stream Restoration	248.00	71.54	176.46	$1,300,000	75.00	68.00	44,880	Urban Stream Restoration Interim Rates	AC1101 (2011) Very Poor	Good
104	Young Branch (PH9204B&C)	N/A	Stream Restoration	337.00	12.00	325.00	$4,940,000	285.00	258.40	170,544	Urban Stream Restoration Interim Rates	PH1102 (2011) Good	Good
105	Flag Run US 495	N/A	Stream Restoration	394.92	130.23	264.69	$1,690,000	97.50	88.40	58,344	Urban Stream Restoration Interim Rates	AC0503 (2005) Very Poor	Good
106	Coon Branch at Annandale Park	N/A	Stream Restoration	595.59	175.92	419.67	$1,677,000	96.75	87.72	57,895	Urban Stream Restoration Interim Rates	AC1002 (2010) Poor	Good
			Subtotal:	**6,368.87**	**2,279.84**	**4,089.03**	**$59,435,000**	**6,084.72**	**2,756.37**	**1,908,106**			
			Total:	**26,415.28**	**8,897.16**	**17,518.12**	**$139,079,542**	**19,515.85**	**7,295.57**	**4,471,399**			

Projects are first prioritized based on their completion status in the following order: Completed Projects; In Construction Projects; In Design Projects; and, Scoping Projects. Final prioritization and decisions about the project selections that are ultimately implemented are made by the County based on multiple factors, including site-specific considerations, as well as approval by the County Board of Supervisors.

Note 1 Projects which have been identified as needing restoration but lack sufficient design details to provide cost and pollutant reduction.

Note 2 Site retrofit projects that will be incorporated as a partnership with other county agencies' capital improvement programs.

Note 3 The stream restoration protocols were used instead of the interim rates when the County had the specific data necessary to support the more precise protocols.

Note 4 Pollutant reduction calculation methods (i.e. efficiency sources) are for planning purposes. The final efficiency sources will be documented in the County's Chesapeake Bay TMDL Action Plan.

Fairfax County 2021 MS4 Program Plan and Annual Report

Appendix P3

More Stringent Stormwater and Erosion and Sediment Control Legal Authorities

VSMP Permit Number VA0088587
9-30-2021

			Appendix P3
Erosion and Sedimentation Control Ordinance - Sections more Stringent[1] than State Law and Virginia Administrative Code			
Co. E&S Ordinance PFM Section	Standard and Specification[2]	Virginia E&S Law/Regulations	County Requirements that are More Stringent than Virginia E&S Law/Regulations
§ 104-1-8(a)(1)	Stnd. & Spec. #3.04 Straw Bale Barriers	VESCH Std&Spec 3.04	Rebar not allowed for stakes, practice not allowed for perimeter control.
§ 104-1-8(a)(2)	Stnd. & Spec. #3.06 Brush Barrier	VESCH Std&Spec 3.06	Practice only allowed with specific authorization of the Director
§ 104-1-8(a)(3)	Stnd. & Spec. #3.07 Storm Drain Inlet Protection	VESCH Std&Spec 3.07	Configurations which completely block inlet not allowed; Straw bale and cinder block wrapped in fabric not allowed.
§ 104-1-8(a)(4) PFM §11-0106.2B	Stnd. & Spec. #3.13 Temporary Sediment Trap	VESCH Std&Spec 3.13	When in RPAs: increased storage requirement to 202 CY/ac.; pipe outlet may be required for < 1 ac, and stone outlet required
§ 104-1-8(a)(5) PFM §11-0106.2C	Stnd. & Spec. #3.14 Temporary Sediment Basin	VESCH Std&Spec 3.14	When in RPAs: increased storage requirement to 202 CY/ac
§ 104-1-8(a)(6)	Stnd. & Spec. #3.34 Bermuda Grass and Zoysia Grass Establishment	VESCH Std&Spec 3.34	Practice not allowed in the County.
§ 104-1-8(a)(7)	Stnd. & Spec. #3.38 Tree Preservation and Protection	VESCH Std&Spec 3.38	VESCH section not to be used. In its place, PFM Chapter 12 shall be used.
§ 104-1-8(a)(8) PFM §11-0106.2D	Stnd. & Spec. #3.02 Temporary stone construction entrance	VESCH Std&Spec 3.02	Required minimum length of 75 feet; filter fabric underliner; and specifies wash rack may be required.
§ 104-1-8(a)(9) PFM §11-0304.7	Stnd. & Spec. #3.31 Temporary Seeding	VESCH Std&Spec 3.31	Mulch is always required for temporary seeding; winter stabilization requried after Nov. 1.

FOOTNOTES			
1) Pursuant to § 62.1-44.15:65.A and B of the Code of Virginia, the County is authorized to have an VESCP program that contains more stringent soil erosion and sediment control regulations and ordinances than those necessary to ensure compliance with the Regulations (9 VAC 25-840 et seq.), provided that any more stringent provisions that become effective on or after July 1, 2012, are based on certain factual findings and reported to the Water Control Board.			
2) Conservation standards listed in § 104-1-8(a) of the County Code, and corresponding provisions in PFM § 11-0106.2, are the Standards and Specifications as contained in the Virginia and Erosion and Sediment Control Handbook (VESCH), third edition (1992), with modifications as listed in § 104-1-8(a)(1) through (10), which are mandatory in the County.			

Fairfax County 2021 MS4 Program Plan and Annual Report

Appendix P4

Stormwater Ordinance Stringency Table

VSMP Permit Number VA0088587
9-30-2021

Stormwater Management Ordinance Stringency Table

Ordinance Section	*County Ordinance Title*	*Virginia Law/Regulations*	*County Requirements More Stringent than State Law/Regulations*	*Pre-existing County Requirements that are More Stringent than the 2014 State Law/Regulations*
§ 124-1-7.3	Exemptions - Single Family Detached residential lots, separately built	§ 62.1-44.15:34C	The exemption for single-family residences that are not part of a common plan of development is more restrictive than the full exemption provided in the Stormwater Management Act but within the authority granted by the Act to Chesapeake Bay localities.	Land disturbances exceeding 2,500 square feet are currently required to provide a plan that addresses erosion, sedimentation, and stormwater drainage. Under the Chesapeake Bay Preservation Ordinance (Code Chapter 118, adopted 1993, revised 2003), if impervious area exceeds 18% of the property a water quality BMP is required. Note: The proposed residential exemption that allows up to 2,500 total square feet of impervious area after construction, is less stringent than the County Chesapeake Bay Preservation Ordinance.
§ 124-4-2.	Water Quality Design Criteria Requirements.	9 VAC 25-870-63	The County's stormwater management requirements for development within the Water Supply Protection Overlay District (WSPOD) may be more stringent than minimum state requirements for redevelopment.	The WSPOD requirements have been in effect since 1980 and are derived from the Zoning Ordinance.
§ 124-4-3.	Water Quality Compliance.	9 VAC 25-870-65	The PFM limits the use and location of specific BMPs on single family residential lots and limits the maximum drainage area for grass channels and filtering practices.	The limitations are based on constraints within the PFM (adopted 2011), recommended limits within the state specifications, or are based on lessons learned from county experience with design and maintenance of certain BMP types.
§ 124-4-3.	Water Quality Compliance.	9 VAC 25-870-65	New BMPs approved by the Virginia BMP Clearinghouse must also be approved by the County prior to use.	The PFM (adopted June 2011) stated in Section 6-0402.4 that other innovative BMP measures may be permitted but, due to the design variables that could affect their appropriateness, requests for use of these techniques will be reviewed on a case by case basis and approved by the Director as appropriate.
§ 124-4-4.B	Water Quantity. Channel Protection	9 VAC 25-870-66	Requirements for channel protection and flooding (e.g. "adequate outfall") are more stringent than minimum requirements of the State Regulations.	These requirements are consistent with provisions in the PFM (adopted June 2011) in existence at the of and prior to adoption of the County's SWMO.

Stormwater Management Ordinance Stringency Table

Ordinance Section	*County Ordinance Title*	*Virginia Law/Regulations*	*County Requirements More Stringent than State Law/Regulations*	*Pre-existing County Requirements that are More Stringent than the 2014 State Law/Regulations*
§ 124-4-4.B.3.a	Water Quantity. Channel Protection	9 VAC 25-870-66.B.3	Pre-development is assumed to be "good forested condition" when utilizing the County's detention method, which reduces the post-development peak discharge to below state requirements and increases the required detention volume. The state only requires detention be provided assuming the pre-development condition, not "good forested". An option has been added that if an applicant can demonstrate that the outfall is adequate, then existing conditions can be used in lieu of "good forested condition" to determine detention requirements for the 1-year storm when discharge is to a natural channel.	These requirements are consistent with provisions in the PFM (adopted June 2011) in existence at the of and prior to adoption of the County's SWMO.
§ 124-4-4.B.3.a	Water Quantity. Limits of Analysis for Channel Protection	9 VAC 25-870-66	Outfall channels must be analyzed for erosion to the limits of analysis unless onsite detention is provided using the County's detention method and pre-development is assumed to be "good forested condition". Whether or not onsite detention is provided, the applicant must demonstrate that a "defined channel or man-made drainage facility" exists for the full limits of analysis. Under the state regulations, if onsite detention is provided such that the 1-year storm discharge meets the energy balance equation for pre-development conditions, no outfall analysis is required.	These requirements are consistent with provisions in the PFM (adopted June 2011) in existence at the of and prior to adoption of the County's SWMO.
§ 124-4-4.C.3	Water Quantity. Flood Protection	9 VAC 25-870-66	Definition of localized flooding added.	This is consistent with provisions in the PFM (adopted June 2011) in existence at the of and prior to adoption of the County's SWMO.
§ 124-4-4.C.5	Water Quantity. Limits of Analysis for Flood Protection	9 VAC 25-870-66	Outfall channels must be analyzed for flooding to the limits of analysis unless onsite detention is provided for the 2-year and 10-year storm event using the County's detention method and pre-development is assumed to be "good forested condition". Whether or not onsite detention is provided, the applicant must demonstrate that a "defined channel or man-made drainage facility" exists for the full limits of analysis and check for flooding of downstream structures during the 100-year event. Under the state regulations, if detention is provided such that the 10-year storm discharge is less than the 10-year pre-development peak discharge, no outfall analysis for flooding is required.	These requirements are consistent with provisions in the PFM (adopted June 2011) in existence at the of and prior to adoption of the County's SWMO.

Stormwater Management Ordinance Stringency Table

Ordinance Section	*County Ordinance Title*	*Virginia Law/Regulations*	*County Requirements More Stringent than State Law/Regulations*	*Pre-existing County Requirements that are More Stringent than the 2014 State Law/Regulations*
§ 124-4-4.C.5	Water Quantity. Flood Protection	N/A	Required detention of the post-development peak rate 100-year such that it does not exceed the pre-development 100-year peak discharge if an existing dwelling or a building constructed under an approved building permit is located within the limits of downstream analysis, is flooded.	These requirements are consistent with provisions in the PFM (adopted June 2011) in existence at the of and prior to adoption of the County's SWMO.
§ 124-4-4.D	Water Quantity.	9 VAC 25-870-66	Unless waived by the Director of DPWES, detention must be provided such that the 2-year and 10-year post-development peak discharge from the site does not exceed the pre-development 2-year and 10-year peak discharges.	These requirements are consistent with provisions in the PFM (adopted June 2011) in existence at the of and prior to adoption of the County's SWMO.
§ 124-4-4.D	Water Quantity.	9 VAC 25-870-66	In the Four Mile Run watershed, the post-development peak flow for the 100-year storm event must be equal to or less than the predevelopment peak flow rate from the 100-year storm unless it is contraindicated by the watershed model developed for the Four Mile Run Watershed Management Program.	This requirement is consistent with provisions in the PFM (adopted June 2011) in existence at the of and prior to adoption of the County's SWMO.

Fairfax County 2021 MS4 Program Plan and Annual Report

Appendix P5

Roadways SOP's - Street Sweeping

VSMP Permit Number VA0088587
9-30-2021

Department of Public Works and Environmental Services
POLICIES AND PROCEDURES Memorandum No.: MSMD18-11

SUBJECT: Parking Lot and Street Sweeping SOP

Effective: 3/27/2018 Revised: 6/18/2019 Approval:

I. Purpose

This standard operating procedure (SOP) is to be followed for sweeping operations on County maintained roadways, parking lots and other paved surfaces in order to minimize non-stormwater discharges into the Municipal Separate Storm Sewer System (MS4).

This SOP will satisfy the following MS4 permit section:

> *"IB2c: Roadways. Streets, roads, and parking lots maintained by the permittee shall continue to be operated and maintained in a manner to minimize discharge of pollutants, including those pollutants related to deicing or sanding activities.*
>
> 1) *No later than 12-months after the effective date of this state permit, the permittee shall develop and maintain an accurate list of permittee maintained roads, streets and parking lots that include the street name, the miles of roadway not treated by BMPs, and miles of roadway treated with BMPs*
> 2) *No later than 36-months after the effective date of this state permit, the permittee shall develop and implement written protocols for permittee maintained road, street, and parking lot maintenance, equipment maintenance and material storage designed to minimize pollutant discharge.*
> 3) *Materials utilized for deicing and sanding activities shall remain covered from precipitation until application.*
> 4) *The permittee shall not apply any deicing agent containing urea or other forms of nitrogen or phosphorous to parking lots, roadways, and sidewalks or other paved surfaces."*

II. Responsible Parties

1. *Maintenance and Stormwater Management Division (MSMD)* – utilizes a contractor to provide street sweeping for some County facilities and roadways (other than parks and landfills). A list of these locations is maintained by MSMD, and includes facilities such as libraries, police and fire stations, schools and County government centers.
2. *Fairfax County Public Schools (FCPS)* – utilizes the County's sweeping contract to provide street sweeping for FCPS sites. FCPS provides all coordination and invoice approval of sweeping at their sites. A list of these locations is maintained by FCPS.

3. *Fairfax County Park Authority (FCPA)* – provides in-house street sweeping services for County park facilities. The Park Operations Division (POD) is divided into six (6) maintenance areas throughout the County and a mobile crew that provides backup on a County wide basis. Each maintenance area is assigned specific sites to sweep as needed throughout the year. A list of sites for each maintenance area is maintained by POD.
4. *Solid Waste Management Program (SWMP)* – provides in-house street sweeping at the I-95 Landfill Complex and the I-66 Transfer Station as well as the Government Center Complex and Public Safety and Transportation Operations Center. A list of these facilities is maintained by SWMP.
5. Additional County agencies, such as Wastewater Collections Division (WCD), Wastewater Treatment Division (WTD), and Housing provide in-house street sweeping for their facilities on an as needed basis. A list of these facilities is maintained by each responsible agency.
6. *Program Manager* – employed by the County leads the Roadways tactical team and oversees the daily activities of the County's street sweeping operations, as well as manages the day to day operations of the County's street sweeping contract. Coordinates with all responsible parties to manage and update the Parking Lot and Street Sweeping SOP.
7. *Contract Manager* – employed by the County; manages the contractual obligations of the County's street sweeping contract and submits payments to the Contractor as approved by the Program Manager.
8. *Contractor* – provides street sweeping services at County and school facilities in order to fulfill the obligations of the County's street sweeping contract.
9. *Supervisor* – employed by the contractor; supervises the street sweeping crew activities on a daily basis and is responsible for ensuring that the sweeping crews follow the appropriate safety guidelines.

III. Minimum Requirements

1. Sweeping operations, both contracted and in-house, shall comply with this SOP and all County safety policies and procedures.
2. The County agencies defined above under Responsible Parties and the sweeping contractor shall sweep and clean leaves, trash, sand, and other debris from parking lots on an as needed basis, to protect storm drain inlets or detention areas from debris.
3. Sweeping may occur after:
    a. Winter season to remove sand and other pollutants;
    b. Repair projects (e.g. construction) that involve operations that may leave waste or debris on parking lot or street surfaces;
    c. Temporary storage of bulk materials such as mulch, dirt, or sand on parking lots or streets; and
    d. As needed at the I-95 landfill and I-66 transfer stations.

4. Construction project sweeping shall occur as required by the Virginia Stormwater Management Program VAR10 General Permit for Discharges of Stormwater from Construction Activities.
5. If County staff or the sweeping contractor encounters any potentially hazardous material they shall coordinate with the Fairfax County Fire and Rescue Department, Fire and Hazardous Materials Investigative Services (FHMIS) Section, to ensure proper testing, cleanup and disposal. Any spills or leaks of potentially hazardous materials from County or contractor equipment shall be addressed following the steps outlined in the Spill Prevention and Response Procedures or a Fairfax County Fire and Rescue approved site specific cleanup plan.

IV. Sweeping Equipment

1. Equipment will conform to the current standards established by OSHA and IOSHA for noise and air pollution controls. These standards can be found at the following website: https://www.osha.gov/law-regs.html.
2. Each piece of equipment will be equipped with high-intensity flashing lights in accordance with Manual of Uniform Traffic Control Devices (State).
3. Sweepers can be vacuum regenerative, mechanical broom, or a combination of types.
4. Equipment should be capable of sweeping and picking up foreign extraneous material. This includes, but is not limited to: sand, loose aggregates, leaves, debris, trash and other accumulated materials attached or bonded to the paved surface.

V. Equipment Preparation

1. All sweeping equipment is to be thoroughly cleaned, serviced, and repaired according to manufacturer's guidelines to ensure proper functionality.
2. Inspect sweeping equipment for leaks and contain immediately. Leaking equipment shall be repaired before continued use.
    a. Upon completion of a site, the driver will conduct a final walk around of the vehicle to ensure there are no leaks as well as drive around the facility to ensure no leaks occurred. If at any time a leak is spotted the driver shall immediately notify their supervisor and apply absorbent to the area. The supervisor shall follow the spill response procedures that are included in the Spill Prevention and Response Procedures or a Fairfax County Fire and Rescue approved site specific cleanup plan.
    b. All street sweeping equipment (County owned and contracted) will be washed in a wash bay or area where wash water drains to the sanitary sewer. Wash stations where wash water is contained for proper disposal may also be utilized. The currently available wash areas for County equipment are located at the I-95 Landfill Complex and I-66 Transfer Station.

VI. Sweeping Operations

1. Each responsible party shall maintain an inventory of their respective sweeping sites.
2. A sweeping supervisor will be onsite during sweeping/cleaning operations. All workers must wear high visibility clothing and appropriate personal protective equipment, including but not limited to: eye protection, safety vest, safety shoes, hearing protection.
3. The sweeping supervisor shall document the amount of debris, in cubic yards, collected at each site.
4. Parking lots, streets and other paved surfaces shall be swept utilizing a sweeping/cleaning process to remove foreign matter from designated areas.
5. Sweeping/cleaning shall be conducted in a manner to protect storm drain inlets and detention areas from debris. If materials are accidentally deposited into storm drainage structures, the responsible party shall remove the materials immediately.
6. Water shall be used to suppress dust at all times.
7. Collected matter shall be disposed of at an approved dumping site. Any sweeper wastewater must be disposed of in the sanitary sewer.
8. Sweeping/cleaning equipment will be operated in the direction of traffic only and will not encroach more than necessary into the travel lanes. Sweepers are not to exceed 20 mph during sweeping operations.
9. Citizens shall be notified of sweeping activities on any road segment greater than 2500' through the placement of temporary signs along the affected areas 48 hours in advance.
10. The sweeping supervisor shall ensure that, in the event of a spill, the Spill Prevention and Response Procedure or a Fairfax County Fire and Rescue approved site specific spill plan is followed and that the site's manager and Spill Coordinator are notified. In the absence of a manager or Spill Coordinator, the Supervisor must ensure that all required individuals and organizations are notified as described in thr Spill Prevention and Response Procedures. These include (but are not limited to) the Fairfax County Fire Marshal's Office. **Failure to report a release of gas, oil, antifreeze, hydraulic fluids, paint, or other hazardous material to the Fairfax County Fire Marshall's Office is a criminal offence (Class 1 misdemeanor).**

VII. Training Requirements

1. All new County employees involved in sweeping operations must participate in mandatory, job-specific training, which may include some or all of the following: agency-specific sweeping plan training, an overview of this Parking Lot and Street Sweeping SOP, administrative processes, hands-on overview of vehicle and equipment operation and maintenance.

VIII. Contracts/Contractors

1. All contracted work is to follow guidelines set forth in this SOP, which is intended to prevent stormwater pollution.
2. The Contract Manager and the Department of Procurement and Material Management ensure that the appropriate contracts are in place and also ensure all necessary documentation is in place to meet contractual obligations, water quality standards, and safety requirements.

IX. Record Keeping and Documentation

1. The Program Manager shall maintain a master list of swept locations (by address).
2. The Program Manager shall keep records of the amount of debris, in cubic yards, collected by street sweeping by County watershed and HUC, annually. Store these records in J:\STW\Divisions_&_Branches\MSMD\Branches_&_Sections\Contracting\Sweeping.
3. Each agency shall maintain copies of training records and provide to the Program Manager upon request.
4. Each agency, including the Department of Vehicle Services, shall maintain copies of manufacturer's recommendations for equipment calibration for all equipment it maintains.

Significant updates or changes to this SOP will be distributed to representatives from all applicable County agencies for approval. For any questions, please contact

John Burke, Ecologist III
Maintenance and Stormwater Management Division
10635 West Dr.
Fairfax, VA 22030
Office: 703.877.2879
Mobile: 202.308.8695
John.burke2@fairfaxcounty.gov

Fairfax County 2020 MS4 Program Plan and Annual Report

Appendix P6

Roadways SOP's - Roadways and Parking Lots Construction

VSMP Permit Number VA0088587
9-30-2020

Department of Public Works and Environmental Services
POLICIES AND PROCEDURES Memorandum No.: MSMD18-03

SUBJECT: Roadway and Parking Lot Construction and Maintenance

Effective: 3/27/2018 Revised: 6/18/2019 Approval:

I. Purpose

Asphalt, concrete, and pervious surfaces are provided and maintained by the County for vehicular and pedestrian access over County right-of-ways (ROW) and within County facilities. If not handled properly, pollutants associated with the construction and maintenance of these have the potential to negatively impact water quality. This Roadway and Parking Lot Construction and Maintenance standard operating procedure (SOP) has been designed to provide County personnel and contractors a set of standard procedures that must be followed to prevent negative impacts to surface waters. This SOP was developed to focus on specific activities related to roadway and parking lot construction and maintenance that are undertaken by County personnel and/or contractors on County property. This SOP shall be considered the primary pollution prevention guidance document for projects that are not being conducted under a formal stormwater pollution prevention plan (SWPPP) or similar pollution prevention plan required by a specific permit or regulation.

This SOP will satisfy the following MS4 permit section:

> *"IB2c: Roadways. Streets, roads, and parking lots maintained by the permittee shall continue to be operated and maintained in a manner to minimize discharge of pollutants, including those pollutants related to deicing or sanding activities.*
>
> 1) *No later than 12-months after the effective date of this state permit, the permittee shall develop and maintain an accurate list of permittee maintained roads, streets and parking lots that include the street name, the miles of roadway not treated by BMPs, and miles of roadway treated with BMPs*
> 2) *No later than 36-months after the effective date of this state permit, the permittee shall develop and implement written protocols for permittee maintained road, street, and parking lot maintenance, equipment maintenance and material storage designed to minimize pollutant discharge.*
> 3) *Materials utilized for deicing and sanding activities shall remain covered from precipitation until application.*
> 4) *The permittee shall not apply any deicing agent containing urea or other forms of nitrogen or phosphorous to parking lots, roadways, and sidewalks or other paved surfaces."*

II. Responsible Parties

1. *Maintenance and Stormwater Management Division (MSMD)* – provides repairs and maintenance at 10635 West Drive, Central Maintenance Facility (CMF), and Dulles Materials Facility (DMF). MSMD also leads snow removal activities for most public facilities not managed by Fairfax County Public Schools, Solid Waste Management, or Fairfax County Park Authority.
2. *Fairfax County Public Schools (FCPS)* – provides surface construction, repair and maintenance at all County school facilities. A list of these locations is maintained by FCPS.
3. *Fairfax County Park Authority (FCPA)* - provides surface construction, repair and maintenance of parking lots, access roadways, and trails at County park facilities. A list of park facilities is maintained by FCPA.
4. *Facilities Management Division (FMD)* – provides pavement marking, asphalt and concrete pavement repair and asphalt pavement construction overlay at various County facilities with the assistance of contractors.
5. *Solid Waste Management (SWM)* - provides surface construction and repair at the County's Solid Waste facilities.
6. *Utilities Design and Construction Division (UDCD)* – provides construction of roadway, sidewalk, trail, intersection improvement and traffic calming projects throughout the County.
7. *Wastewater Management (WWM)* – provides surface construction, repair, and maintenance at County facilities and within VDOT ROWs with in-house support as well as assistance of contractors. A list of these locations is maintained by WWM at Noman Cole Plant and Freds Oak Facility, and includes the Noman Cole Treatment Plant Facility, Freds Oak Facility, Sanitary Sewer Pumping Stations/access roads and sewer repairs within VDOT right-of-ways.
8. Other departments/agencies that perform construction and maintenance activities at facilities they operate include *Department of Vehicle Services (DVS).*
9. Parking lot and roadway construction, large repair projects, and surface painting operations at some facilities are outsourced to contractors, with the expectation that contracted services will be consistent with services provided by the County.

III. General Procedures

1. Ensure spill response material/equipment is readily available when work activity requires the use of paints, chemicals, or other material that could harm human health or the environment.
2. Provide for protection of storm drain inlets when working in close proximity and there is a potential for a discharge to a storm drain as the result of a spill or a precipitation event.
3. Ensure that material safety data sheets (MSDS) are available for all materials used during surface repair and maintenance activities. MSDS should be readily available and accessible to all County and contractor personnel handling chemicals or other potentially harmful materials.
4. To the extent possible, construction and maintenance activities should only be scheduled and conducted during dry weather. All possible precautions should be used to avoid conducting potential pollution generating construction and maintenance activities immediately before or during times when precipitation is likely.
5. During periods of construction and/or maintenance, the work area should be routinely inspected for signs of spills, leaks, trash accumulation, illicit discharges from the site, build up of sediment, or other conditions that may result in the discharge of pollutants from the site to the storm drainage system.

6. To the extent possible, broom sweep or vacuum all surfaces periodically to keep the work area clean and free from pollutants. Hosing down surfaces should be avoided unless the area is completely contained so that all drainage is directed to the sanitary sewer.

IV. Asphalt Surface Repair and Maintenance

1. Store mixed asphalt material under cover and protected from precipitation and extreme temperatures.
2. Reduce the amount of asphalt material stored onsite. When possible, purchase only the amount of material necessary to complete a project.
3. If bulk material storage is necessary, locate storage area outside of the drainage conveyances and away from storm drain inlets.
4. Minimize the amount of water used when conducting asphalt cutting, grinding, or milling. Water should only be used in amounts necessary to control dust or provide lubrication, and should never be used in amounts that would result in a flow that could discharge to the storm drainage system.
5. All sediment and debris resulting from cutting, grinding, milling, or other repair and maintenance should be contained, swept up, and disposed of properly. Refer to the *Street Sweeping SOP* for additional guidance as needed.
6. Promote use of only asphalt-based products for sealcoat or similar treatment applications where possible. The use of coal tar-based products should be discouraged at any County facility to the greatest extent possible.
7. Apply sealants or other liquid surface treatments with care, avoiding misapplication to a storm drain or other non-asphalt surface. When conditions require application adjacent to a storm drain inlet, consider the use of an impervious inlet cover to prevent unintended spray into the storm drain.

V. Surface Painting/Striping

1. When removing old paint, contain the removed paint to the extent possible and dispose as appropriate. If there is a potential to encounter lead-based paint, additional precautions not outlined in this SOP may be required.
2. When using high pressure water to remove old paint, protect nearby inlets to prevent the discharge of waste paint, sediment, or other pollutants into the storm drainage system. Use perimeter control around the work area to collect removed paint and dispose as appropriate.
3. When surface grinding or sand blasting to remove paint, sweep up paint debris immediately. If water is used for grinding, minimize the amount of water to prevent a discharge to the storm drainage system.
4. To the extent practicable, use thermoplastic markings instead of paint for all surface striping.
5. All paint should be stored inside and protected from precipitation.
6. To the extent practicable, handle paint in a contained area, under cover from precipitation. If secondary containment is not available, use temporary structural best management practices to protect storm drain inlets and prevent the discharge of paints in the event of a spill.
7. Apply paint at an appropriate rate to prevent excess paint from running off the site.
8. In the event of a spill, containment material should be deployed to contain the spill and prevent paint from entering the storm drain.
9. Dispose of all waste material in an appropriate manner. Excess latex and water based paint that is not able to be used elsewhere can be allowed to dry, under cover from precipitation, and disposed of as solid waste. Refer to product information for specific requirements for disposal.

Leftover oil based paints and solvents must be disposed of as hazardous waste according to federal and state environmental regulations; these materials may not be disposed of at the County's household hazardous waste facilities. For assistance in arranging hazardous waste disposal, call the County's Solid Waste Management Program.

10. Paint equipment should be washed after use in a designated wash area that is plumbed to a sanitary sewer, or approved containment structure.

VI. Concrete Surface Repair and Maintenance

1. Store dry concrete material inside, under cover from precipitation.
2. Minimize the amount of concrete material stored onsite. If possible, purchase only the amount of concrete material needed for a particular job.
3. Identify storm drain inlets located in the vicinity of the work site. Storm drain inlets should be protected with a barrier if the work is in close proximity to the inlets and there is a reasonable chance for material to discharge to the inlet as the result of a spill or precipitation event.
4. To control dust, "wet" cutting methods should be used when practicable. Minimize the amount of water used when conducting cutting to prevent a discharge to the storm drain system. Saw cut slurry should be contained and properly disposed. Using a vacuum to contain slurry in the saw cutting process is an effective way to ensure that pollutants are not allowed to enter storm drains or other stormwater infrastructure.
5. Remove demolished concrete or related debris and dispose in a landfill facility as appropriate. Dry cleanup methods (broom and shovel) should be used to manage concrete debris to the extent practicable.
6. A concrete washout should be clearly established and identified at any location where concrete is to be mixed or poured. The concrete washout should be constructed with an impervious material and in a manner that would prevent washout material from discharging to the storm system.
7. Excess material that cannot be used at another location or project can be discharged into the designated concrete washout facility, if adequate capacity exists, where it should be allowed to dry and then be disposed as construction waste.

VII. Low Impact Development (LID) Considerations

1. Prior to conducting any construction or maintenance work, locate and identify any LID within the project area (examples may include pervious or porous pavement, rain gardens, and vegetated islands). Contact MSMD for assistance in identifying these areas at County facilities.
2. Clearly delineate porous pavement, pervious pavers, and similar surfaces that are not easily distinguishable from traditional surfaces, to increase awareness of these surfaces.
3. Surface vacuuming should be performed on a routine basis and in the event of a spill of any material that may clog pore spaces. While sweeping may be effective, it can lead to clogging of pores with sediment and other granular material.
4. Do not locate staging areas, equipment, or material storage areas on top of porous pavement.
5. Take future maintenance requirements into consideration when constructing porous pavements. Porous surfaces should not be intermingled with traditional surfaces where separate maintenance practices are not physically possible.

VIII. Contractor Coordination

1. Provisions of this SOP should be incorporated into contracting agreements, primarily through the inclusion in contract technical specifications. Project specific requirements for the proper

handling of roadway and parking lot construction and maintenance materials should be included in project work orders, when not clearly included in contract technical specifications.

2. Requirements of this SOP and any additional project specific requirements shall be discussed with contractors in project contract discussions, pre-construction meetings, or through other similar avenues to ensure that contractors are instructed on the details of this SOP.
3. To the extent possible, contractors should consider the use of asphaltic based sealants instead of coal-tar based sealants on County projects.

IX. Training Requirements

1. All employees engaged in roadway and parking lot construction and maintenance shall be trained in the proper use and handling of asphalt and concrete materials, paints, and other related materials and equipment. The training should include the technical aspects of the construction and maintenance activity as well as the pollution prevention measures included in this SOP.

X. VPDES Permitted Facilities

Stormwater discharges associated with industrial activity that are authorized by a Virginia Pollutant Discharge Elimination System (VPDES) Industrial Stormwater Permit are authorized to discharge through the MS4. Those County facilities that hold a VPDES Industrial Stormwater Permit shall follow the conditions established under that permit, including development and implementation of a Stormwater Pollution Prevention Plan (SWPPP). When possible, VPDES Industrial Stormwater Permit holders and Stormwater Planning Division shall review appropriate SOPs, Best Management Practices (BMPs) and guidelines for inclusion in the facility's SWPPP with final approval by the site's director.

Significant updates or changes to this SOP will be distributed to representatives from all applicable County agencies for approval. For any questions, please contact

John Burke, Ecologist III
Stormwater Maintenance Division
10635 West Dr.
Fairfax, VA 22030
Office: 703.877.2879
Mobile: 202.308.8695
John.burke2@fairfaxcounty.gov

Fairfax County 2021 MS4 Program Plan and Annual Report

Appendix P7

Roadways SOP's - Material Storage

VSMP Permit Number VA0088587
9-30-2021

Department of Public Works and Environmental Services
POLICIES AND PROCEDURES

Memorandum No.: MSMD18-07

SUBJECT: Outdoor Material Storage Procedure

Effective: 3/27/2018 Revised: 6/18/2019 Approval:

I. Purpose

This County-wide standard operating procedure (SOP) has been developed to establish consistent stormwater pollution prevention practices for the proper storage of raw materials that are stored outdoors, such as rock salt, aggregates, soil, asphalt material, and organic wastes, to prevent the pollution of stormwater runoff which can impact nearby waterbodies, contaminate soil, or leach into groundwater.

This SOP will satisfy the following MS4 permit section:

> *"IB2c: Roadways. Streets, roads, and parking lots maintained by the permittee shall continue to be operated and maintained in a manner to minimize discharge of pollutants, including those pollutants related to deicing or sanding activities.*
>
> 1) *No later than 12-months after the effective date of this state permit, the permittee shall develop and maintain an accurate list of permittee maintained roads, streets and parking lots that include the street name, the miles of roadway not treated by BMPs, and miles of roadway treated with BMPs*
> 2) *No later than 36-months after the effective date of this state permit, the permittee shall develop and implement written protocols for permittee maintained road, street, and parking lot maintenance, equipment maintenance and material storage designed to minimize pollutant discharge.*
> 3) *Materials utilized for deicing and sanding activities shall remain covered from precipitation until application.*
> 4) *The permittee shall not apply any deicing agent containing urea or other forms of nitrogen or phosphorous to parking lots, roadways, and sidewalks or other paved surfaces."*

II. Minimum Requirements:

Storage:

1. Store materials indoors or under cover.
2. Salt and other deicers must be stored indoors or under a roof or cover and on an impervious surface. Deicer storage should be bermed, walled, or surrounded by secondary containment whenever possible.
3. Outside storage areas must be covered with a roof or waterproof covering.
    a. After each use, ensure that the material is fully contained within roof or waterproof covering (e.g., sweep material back into bulk storage bay).

b. Material storage areas (e.g., stock piles) must have a tarp or other cover on the top and all exposed sides when not in use.
c. If stockpiles are too large to be covered or contained, erosion and sediment control measures must be places at the perimeter of the site and/or at any carch basins to prevent erosion of stockpiled materials.

4. If liquid materials are stored outdoors, the materials must be stored in clean, sturdy leak tight containers that are designed to be stored outside (e.g., drums).
    a. Store liquid materials in secondary containment where possible, in secure areas and away from traffic.
    b. Liquid waste materials must be stored in secondary containment.
    c. Store containers in a location where they will not be accidentally damaged by equipment or vehicles.

Spill Response:

1. In the event of a spill refer to the Spill Prevention & Response Procedure.
    a. Large spills of hazardous materials (including oil and gas) should be reported by calling 911 immediately!
2. Have spill cleanup materials readily available in a known and convenient location.

Signage Required:

1. Install and maintain markings on all stormwater inlets located on high priority municipal facilities, as defined at Part I.F of Fairfax County's Municipal Separate Storm Sewer System Permit (MS4), and on County properties with greater than 2-acres of impervious surface. Storm drain markings should indicate that the marked inlet discharges to the storm network or surface water.

Employee Training:

1. Train employees on proper storage practices for each type of material stored at the facility.
2. Train employees and contractors on proper spill containment and cleanup procedures.
3. Conduct "refresher" courses on biennial basis as required by the County's MS4 permit.

III. Routine Maintenance:

1. Keep storage area clean and dry.
    a. Inspect storage areas for cleanliness, sweep, and remove debris or trash.
2. Ensure stockpiles have proper coverage and material/debris is not eroding.
3. Repair and replace perimeter controls, containment structures, and covers as needed to keep them properly functioning.
4. Clean up leaks or drips from the ground surface using dry cleanup methods such as the use of absorbents.
5. Maintain temporary-type Best Management Practices (BMPs) such as silt fences, straw "wattles," check dams, etc. Remove built-up debris or sediment as necessary.
    a. Replace defunct or damaged materials.

IV. VPDES Permitted Facilities

Stormwater discharges associated with industrial activity that are authorized by a Virginia Pollutant Discharge Elimination System (VPDES) Industrial Stormwater Permit are authorized to discharge through the MS4. Those County facilities that hold a VPDES Industrial Stormwater Permit shall follow the conditions established under that permit, including development and implementation of a

Stormwater Pollution Prevention Plan (SWPPP). When possible, VPDES Industrial Stormwater Permit holders and the Stormwater Planning Division shall review appropriate SOPs, BMPs, and guidelines for inclusion in the facility's SWPPP with final approval by the site's director.

Significant updates or changes to this SOP will be distributed to representatives from all applicable County agencies for approval. For any questions, please contact

John Burke, Ecologist III
Stormwater Maintenance Division
10635 West Dr.
Fairfax, VA 22030
Office: 703.877.2879
Mobile: 202.308.8695
John.burke2@fairfaxcounty.gov

Fairfax County 2021 MS4 Program Plan and Annual Report

Appendix P8

Roadways SOP's - Vehicle Maintenance

VSMP Permit Number VA0088587
9-30-2021

Department of Public Works and Environmental Services
POLICIES AND PROCEDURES

Memorandum No.: MSMD-19-12

SUBJECT: Vehicle and Equipment Repair and Maintenance Procedure

Effective: 3/27/2018 Revised: 6/18/2019 Approval:

I. Purpose

These standard operating procedures (SOP) have been developed to establish consistent stormwater pollution prevention practices for use during vehicle/equipment repair and maintenance in order to reduce pollutants such as solvents, antifreeze, brake fluid, battery acid, motor oil, fuel, or grease from entering the storm sewer system and negatively impacting water quality.

This SOP will satisfy the following MS4 permit section:

> *"IB2c: Roadways. Streets, roads, and parking lots maintained by the permittee shall continue to be operated and maintained in a manner to minimize discharge of pollutants, including those pollutants related to deicing or sanding activities.*
>
> 1) *No later than 12-months after the effective date of this state permit, the permittee shall develop and maintain an accurate list of permittee maintained roads, streets and parking lots that include the street name, the miles of roadway not treated by BMPs, and miles of roadway treated with BMPs*
> 2) *No later than 36-months after the effective date of this state permit, the permittee shall develop and implement written protocols for permittee maintained road, street, and parking lot maintenance, equipment maintenance and material storage designed to minimize pollutant discharge.*
> 3) *Materials utilized for deicing and sanding activities shall remain covered from precipitation until application.*
> 4) *The permittee shall not apply any deicing agent containing urea or other forms of nitrogen or phosphorous to parking lots, roadways, and sidewalks or other paved surfaces."*

II. Minimum Requirements

1. Designate a parking area for vehicle/equipment awaiting maintenance or repair.
    a. Attempt to perform maintenance/repair or store vehicle/equipment awaiting maintenance or repair indoors or on an impervious surface.
    b. If activities must be performed outside:
        i. Locate on an impervious surface (i.e., pavement) and away from stormwater conveyances (i.e., swales, drain inlets, etc.) and surface waters to ensure leaks or spills will not be discharged.
        ii. Have absorbent pads and drip pans accessible to capture leaks and spills during maintenance activities.

iii. Immediately drain the source of the leak, using a drip pan, bucket, drop cloth, or absorbent materials.

2. Empty contents of container into proper waste or recycling container.
    a. Do not leave collected materials in container to be spilled or kicked over.
3. Inspect vehicle/equipment for leaks.
    a. Use drip pans or absorbent material to capture leaking fluids.
4. Clean up any spilled fluids immediately.
    a. Use dry clean-up methods only, if possible. Never use water to clean up a spill.
5. Keep waste oil, antifreeze, and other fluids properly covered and contained in tight fitting labelled containers.
6. All hazardous wastes must be labeled and stored according to hazardous waste regulations.
7. Never discharge hazardous waste to the storm or sanitary sewer systems.
8. Active Fleet/Equipment
    a. Use drip pans or absorbent material to capture leaking fluids.
    b. Clean up any spilled fluids immediately.
    c. Individual vehicles/equipment must be consistently stored or parked in the same area to allow for consistent controls.
    d. Properly dispose of all waste oil, antifreeze, and other fluids.
    e. Keep different types of fluid separate and recycle whenever possible.
    f. Equipment must never be stored within the drip line of trees or adjacent to a storm drain, stormwater conveyance, or natural waterway.
9. Surplus Fleet/Equipment
    a. Inventory all surplus vehicle/equipment.
    b. Drain all fluids from surplus vehicle/equipment to prevent drips and leaks, prior to storage.
    c. Minimize contact with rain by keeping metals/equipment stored inside to the maximum extent possible.
    d. Do not store surplus equipment for extended periods of time (i.e., more than 180 days) or allow for an excessive amount of equipment to build up prior to removal/disposal.
        i. If an extended period of time is expected or exceeded, disassemble useable motors and parts and place in appropriate indoor storage locations. Remaining machinery must be disposed of as scrap.

Spill Response:

1. In the event of a spill refer to the Spill Prevention & Response Procedure.
    a. Large spills of hazardous materials (including oil and gas) should be reported by calling 911 immediately!
2. Have spill cleanup materials readily available in a known and convenient location.

Signage Required:

1. Install and maintain markings on all stormwater inlets located on high priority municipal facilities, as defined at Part I.F of Fairfax County's Municipal Separate Storm Sewer System Permit (MS4), and on County properties with greater than 2-acres of impervious surface. Storm drain markings should indicate that the marked inlet discharges to the storm network or surface water.
2. Mark the area clearly as a storage area.
3. Designate a special area to drain oil, coolant, or other fluids from surplus equipment.
4. Littering is prohibited.

5. Drain markers must also serve as a reminder to employees to wash vehicle/equipment only in designated areas.

Employee Training:

1. Train employees and contractors on proper cleaning of pervious areas and equipment operation.
2. Train employees on proper preventative practices for vehicle/equipment storage.
3. Train employees on the proper disposal of fluids and waste material from both surplus and operated vehicle/equipment.
4. Train employees and contractors on proper spill containment and cleanup procedures.
5. Conduct "refresher" courses on biennial basis as required by the County's MS4 permit.

III. Routine Maintenance

1. Sweep the maintenance area routinely.
    a. Wipe up spills with rags and other absorbent materials.
    b. Use dry clean-up methods only.
    c. Do not hose down the area to a storm drain.
2. Clean up leaks or drips from the ground surface using dry cleanup methods such as the use of absorbents.
3. Repair damaged hoses and leaky gaskets immediately.
4. Collect leaking or dripping fluids in drip pans.
    a. Empty drip pans regularly.
    b. Keep different types of fluid separate and recycle whenever possible.
5. Keep designated maintenance area and equipment clean.
    a. Do not allow oil and grease to build up over time.
6. Keep an accurate maintenance log and inventory to evaluate materials use.
7. Only wash parts in a designated area (e.g., parts washer) and verify that no wash water is discharged during the process.
    a. Clean parts without using solvents whenever possible.

IV. Good Housekeeping Checklist

1. Inspect parking facilities and stormwater conveyance systems monthly.
2. Inspect incoming vehicle/equipment for leaks upon arrival.
3. Inspect stored vehicle/equipment for damaged hoses and leaky gaskets in accordance with preventive maintenance program and repair or replace immediately.
4. Inspect the ground surface under and around active fleet weekly for signs of leaks and drips.
5. Repair or replace immediately.
6. Inspect the ground surface under and around surplus vehicles/equipment monthly for signs of leaks and drips.
7. Inspect spill equipment weekly.

V. VPDES Permitted Sites

Those facilities covered under a VADEQ VPDES permit and which conduct regular vehicle maintenance are subject to additional requirements for inspections, documentation, etc. Individuals operating out of facilities meeting this description should consult the Storm Water Pollution Prevention Plan (SWPPP) for their facility

and follow all included requirements. As of this signing, the VPDES permitted vehicle maintenance facilities are:

- Newington Maintenance Facility (Permit#: VAR051771)
- West Ox Maintenance Facility (Permit #: VAR051773)
- Jermantown Maintenance Facility (Permit #: VAR051770), and
- Alban Maintenance Facility (Permit #: VAR051772).

Significant updates or changes to this SOP will be distributed to representatives from all applicable County agencies for approval. For any questions, please contact

John Burke, Ecologist III
Stormwater Maintenance Division
10635 West Dr.
Fairfax, VA 22030
Office: 703.877.2879
Mobile: 202.308.8695
John.burke2@fairfaxcounty.gov

Fairfax County 2021 MS4 Program Plan and Annual Report

Appendix P9

Standard Operating Procedures for Industrial and High Risk Runoff (IHRR) Program MS4 Point of Connection and Facility Inspections

VSMP Permit Number VA0088587
9-30-2021

Department of Public Works and Environmental Services
POLICIES AND PROCEDURES

Memorandum No.: SWPD14-01

SUBJECT: Standard Operating Procedures for Industrial and High Risk Runoff (IHRR) Program MS4 Point of Connection and Facility Inspections

Effective: 2/2/2015 Revised: 06/10/2016 Approval:

I. Purpose

To establish the guidelines by which Stormwater Planning Division Code Specialists conduct inspections of points of connection to the Fairfax County municipal separate storm sewer system (MS4) and outdoor activities associated with industrial and high risk runoff facilities located within Fairfax County's MS4 service area.

II. Standard Operating Procedures for Industrial and High Risk Runoff (IHRR) Program MS4 Point of Connection and Facility Inspections

A. Introduction

Section I.B.2.g of Fairfax County's MS4 permit requires the County to "implement a program to identify and control pollutants in storm water discharges to the MS4 from IHRR facilities (municipal landfills; other treatment, storage, or disposal facilities; facilities that are subject to EPCRA Title III, Section 313) and any other industrial or commercial discharges the permittee determines are contributing a significant pollutant loading to the MS4."

Chapter 124 of the Code of Fairfax County, Virginia ("Stormwater Management Ordinance," effective July 1, 2014), Section 124-9-4 requires the Director of the Department of Public Works and Environmental Services to develop a program for routine inspection of industrial and commercial properties that present a high risk of discharging non-stormwater substances to the County MS4 that may result in a significant pollutant load.

These inspection guidelines are intended to be used by the Code Specialists within the Stormwater Planning Division tasked with conducting IHRR inspections.

1. Facilities

The inspection guidelines in this procedural memorandum cover inspections at facilities identified by Fairfax County as industrial and high risk runoff facilities. This means any point–of–connection inspection required under Section I.B.2.g of the County's MS4 permit, including (1) outfalls of facilities with VPDES industrial stormwater permits at the point of connection to the County MS4 (I.B.2.g.2), (2) any non-VPDES permitted industrial facility from which the permittee has evidence that a significant pollutant load is entering the County MS4 system (I.B.2.g.4), and (3) any industrial and/or commercial stormwater dischargers not regulated under the Virginia State Water Control Law that it determines may be contributing a significant pollutant loading to the County MS4 (B.2.g.6).

To identify such facilities, the County developed the following definitions as guidance:

- **High Risk Facility** – any commercial or industrial facility that has caused a discharge that has contributed a significant pollutant loading to the MS4 on a recurring basis; or any discharger identified in accordance with Section I.B.2.g.6 of the MS4 permit.
- **Industrial Facility** (as identified within the permit) – a municipal landfill; other treatment, storage, or disposal facility for municipal waste; a hazardous waste treatment, storage, disposal and recovery facility; a facility that is subject to EPCRA Title III, Section 313; a VPDES industrial stormwater permitted facility; and any other facility with a "storm water

discharge associated with industrial activity," as the term is defined in 40 CFR 122.26(b)(14), to the MS4.

- **Recurring Basis** – a discharge that has occurred at least three times in a five year period.
- **Significant Pollutant Load** – a discharge that contributes pollutants sufficient to cause or exacerbate the deterioration of receiving water quality or aquatic life. [Examples are provided in II.A.2 below.]

2. Evidence of Significant Pollutant Loads

The County will apply the following definitions as guidance:

- **Evidence** – something that tends to prove or disprove the existence of an alleged fact.
  - Examples of evidence of stormwater pollution may include, but are not limited to: color, odor, clarity, floating solids, settled solids, suspended solids, foam, oil sheen, grease, deposits and stains, abnormal vegetative growth and outfall damage such as cracking or corrosion.
- **Violation** – any unauthorized stormwater discharge into the County's MS4. These violations may include, but are not limited to:
  - discharges referenced in the Stormwater Management Ordinance
  - discharges not authorized by the County's MS4 Permit
  - discharges in exceedance of the State of Virginia Water Quality Standards
  - discharges in exceedance of VPDES effluent limitations
  - Examples of unauthorized discharges include, but are not limited to:
    - Chlorinated water (non-potable)
    - Improper disposal of grass clipping, leaf litter and pet wastes
    - Non-permitted commercial vehicle and equipment washing
    - Non-permitted cooling tower discharges
    - Process water (such as radiator flushing water, plating bath wastewater, etc.)
    - Restaurant wastes such as cooking oil/grease or floor washing water
    - Vehicle motor oil, including water from service bay cleanings

In many instances, visual cues and/or odors are sufficient evidence of illicit discharges, so Stormwater inspectors may initiate source trackdown or request that a discharge be stopped without sampling flow. If flow is present at the point of connection to the County MS4 but the source is not evident based on visual cues or odors, inspectors should collect and screen samples for the indicators of potential non-stormwater discharges most appropriate for the type of facility being inspected. The suite of indicators selected by Fairfax County are similar to those recognized nationally by many other stormwater programs and entities such as EPA and the Center for Watershed Protection. The indicator parameters with the screening thresholds may be found on the IHRR inspection form (Appendix D). Additional details about the screening procedures are described in the Screening Procedures for Illicit Discharges, Procedural Memorandum SWPD14-04.

Generally, inspectors will make an effort to track evidence to a source or require responsible parties to perform source tracking. Under certain scenarios, inspectors may be restricted from completing a source trackdown (e.g., restricted private property or a VPDES permitted-facility under the jurisdiction of Department of Environmental Quality (DEQ)).

The County's MS4 permit states that the permittee shall coordinate with [DEQ] to report any non-VPDES permitted industrial facility from which the permittee has evidence that a significant pollutant load is entering the MS4 system. Evidence of significant pollutant loads are reported to DEQ in accordance with sections II.D.10 and II.G of this memorandum.

3. Inspection Prioritization

Stormwater inspectors currently divide IHRR inspection efforts geographically according to County magisterial districts. The County will continue to acknowledge magisterial boundaries in its inspection planning. The County will prioritize the magisterial districts with the highest number of known IHRR facilities, where magisterial districts will then be assigned a priority rating from 1 to 5 (with 1 being the highest priority). The prioritization ranking will be reflected on the County's industrial discharger list.

This prioritization is intended to be applied broadly, but not force inspectors to schedule individual IHRR inspections in a specific order. Within the broader prioritization framework, inspectors should have flexibility. Inspection priority may change based on historical discharges, local water quality impairments, industrial category, or other methods such as results of previous inspections, DMR review, known spills, complaints, or findings from other county programs such as dry or wet weather screening.

At a minimum, the County will inspect VPDES industrial stormwater permitted outfalls connected to its MS4 once every five years consistent with the MS4 permit requirement.

4. Organization of this Memorandum

Major sections of this memorandum describe the three main phases of an inspection, namely pre-inspection, inspection (MS4 point-of-connection and facility inspection) and post-inspection. A flowchart of the inspection process is provided Figure 1. The document also describes referrals to DEQ and basic safety precautions.

B. Personal Safety Prerequisites

1. - Confined space awareness training, including refreshers, is required at the frequency specified by the division director in order to participate in IHRR point of connection and facility inspections. During an actual inspection, inspectors should not break the plane of a confined space with any part of their body at any time as per the Stormwater Planning Division Confined Space Policy (contained within Appendix A).
2. - Personal protective equipment (PPE) must be worn as appropriate at all times during inspections, which may include steel toed boots, hard hats, safety glasses and safety vest. All vehicles must be equipped with a first aid kit.
3. - Inspectors should provide a monthly calendar of proposed inspections to the IHRR team leader and the WPAB chief. On the day of inspection, inspectors should notify their supervisor or acting supervisor and administrative staff by email when they are going into the field, when they return and how to reach them in case of emergency. Inspectors may also use the division white board to sign in and out.
4. - Conduct atmospheric monitoring using a gas meter before opening any manholes.
5. - If there is any indication before dispatch or upon arriving at the site that hazardous material may be present, contact the Fire Marshal's Office (FMO) immediately to determine if hazardous material is present. Do not proceed with the investigation until the FMO has verified that any hazardous material the FMO screens for is not present.

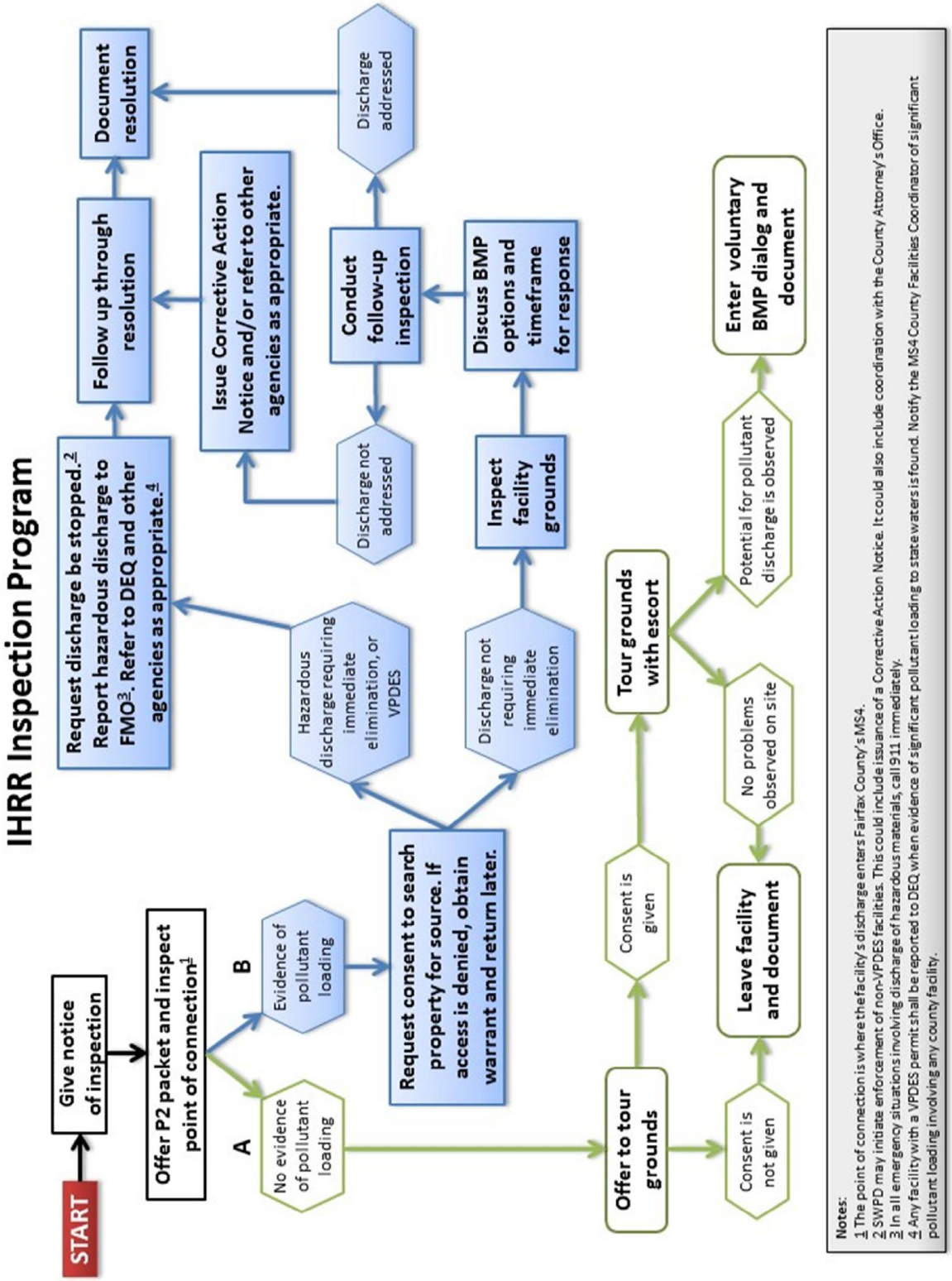


Figure 1: IHRR Program Inspection Process

C. Pre-inspection Activities

1. - Scheduling a Facility for Inspection

   a. - Begin by selecting a facility from the IHRR facility database in accordance with the inspection schedule.

   b. - Check the registration statement for VPDES permitted facilities to determine the location(s) of the permitted outfall(s). Only the permitted outfall(s) connected to the County MS4 will be inspected; permitted direct discharges will not be inspected.

   c. - Contact GIS analyst approximately two weeks prior to inspection to verify GIS mapping of stormwater infrastructure on the site (optional).

   d. - Attempt to contact via email, phone, or letter the facility owner or designated facility representative to notify them of the point of connection inspection one week prior to the inspection date. [It is not necessary, but written approval by email for private facility inspections may be helpful when on-site inspection is initiated.]

      i. - Request an escort if private property access will be needed.

      ii. - Send the "Stormwater Inspection Letter" (Appendix B) to the facility.

   e. - If the facility is a County facility, also notify the MS4 County Facilities Program Coordinator because County facilities have additional requirements under the MS4 permit. An MS4 County Facilities team member may request to be onsite during the inspection.

2. - Preparing for an Inspection

   a. - Create a new facility map, or update an existing facility map. Use the template created by the GIS analyst (Appendix C) for printed maps. Otherwise, maps should be created using a scale that shows the facility, the closest point of connection to the County MS4 and any surrounding stormwater features. At a minimum, the facility map should include the features identified on the table below. Including sanitary sewer and other utilities lines may also be helpful.

Stormwater Base Map Elements	Regular Base Map Elements	IHRR Facility Elements
StormNet Nodes	Ortho-Imagery 2013	Facility Site Name
StormNet Arcs	Parcels	VPDES Permit Number (if applicable)
Stormwater Facility Polygons	Roadways	Facility Site Boundaries
Stormwater Related Easements	Address Annotation	Facility Site Points of Connection
Stream Reaches	Lot Number Annotation	Facility Site Inlets
MS4 Polygons		Facility Site Points

Definitions

Facility Site Boundaries – Facility boundaries are composed of the parcel(s) that make up the overall business area site.

Facility Site Points of Connection – The connection through which the facility discharges stormwater drainage to the County's MS4. The point of connection may be observed through a manhole. The inspector should identify the most accessible manhole(s) to the point of connection and include the STMN number(s) on the map.

Facility Site Inlets – Facility inlets include any structures that collect onsite runoff.

Facility Site Points – Facility site points are the given address points used to locate each site.

b. - Review and evaluate all available facility information including the facility map and any previous stormwater inspection reports.

c. - Where applicable, review VPDES permits, including parameter-specific effluent limitations, and discharge monitoring reports (DMRs) from the past two years, along with any violations or complaints.

d. - Prepare the inspection form (Attachment D) by filling in basic facility information.

e. - Gather necessary inspection equipment and ensure that it is in the vehicle and in working order. Equipment includes:

i. - Personal protective equipment (e.g., hardhat, safety vest, steel-toe boots)

ii. - Dry weather screening kits (with calibrated meters)

iii. Sample collection tools and bottles

iv. Gas meter (bump tested)

v. - Manhole hook

vi. Camera with charged batteries

vii. Phone

viii. Mobile computing equipment

ix. First aid kit

D. MS4 Point-of-Connection Inspection

An overview flowchart of the entire inspection process is provided in Figure 1. It is required that IHRR inspections begin at the point of connection to Fairfax County's MS4.

1. - Ensure that all steps in Section II.C are complete prior to starting an inspection.

2. - Inspections may be conducted under dry or wet weather conditions. On the day of the inspection, check National Weather Service (NWS) or other weather website to determine if conditions are dry weather or wet weather. Dry weather conditions are met whenever there is < 0.1 inches of rain within 48 hours. Note the dry or wet weather condition with the inspection record.

3. - Upon arrival, inform the facility contact that you are present onsite. (Refer to Confidential Memorandum 121776 for procedures for conducting investigations on private property.)

4. - Locate the point(s) of connection identified on the facility map. Note the STMN number for the MS4 feature that is accessed.

a. - If the point of connection identified on the map is not accessible, go to the next stormwater manhole located upstream in the storm drainage system. Note the STMN number for the MS4 feature that is accessed.

b. - When the stormwater drainage system must be accessed through a manhole, take an atmospheric reading with the gas meter by placing the meter probe into the small opening (pick hole) in the manhole cover. If a manhole cover does not have an opening for a probe, test around rim; crack the manhole lid and test atmospheres before opening completely; or move up the storm drainage system to find a manhole that can be tested.

c. - Record the results on the separate gas sheet and keep the sheet for the file.

d. - After testing, staff may remove storm drain manhole covers and use non-electronic powered devices to collect water samples, if present. If gases, such as H_2S, are present open the lid slightly and stand back to allow the gases to release first. Continually monitor the situation at a safe distance.

e. - Do not open the lid if readings suggest there is potential for explosion.

5. - If there is flow present, sample and characterize the flow as described in the Screening Procedures for Illicit Discharges, Procedural Memorandum SWPD14-04. [Note: Visual evidence of an illicit discharge can be used to request a track down to the source.] Record analytical results on the IHRR inspection form. Also indicate on the form whether the sample was taken under dry weather conditions. (Samples can still be collected and screened under wet weather conditions.)

6. - Normally, water quality screening parameters are to be tested in the field. Handle any water samples that require laboratory analysis as follows:

   a. - Call the Noman M. Cole Jr. Pollution Control Plan for instructions on how to collect samples for analysis of unique parameters and to inform them samples will be delivered.

   b. - Fill out the appropriate chain of custody forms. If necessary, record on the chain of custody forms deviations from the standard procedures. (Some examples of deviations include using a nonstandard container to collect the sample, not being able to place on ice a sample that needs refrigeration, going beyond the ideal holding time, etc.)

   c. - Write on the IHRR inspection form which laboratory the samples will be delivered to for analysis.

7. - For VPDES permitted facilities, inspect only those permitted outfalls connected to the county MS4 for evidence of significant pollutant loading. [1] If a pollutant and/or pollutant source can be readily identified visually or by odor, it is not necessary to collect a flow sample for analysis. If there is flow at the point of connection to the County MS4 and the source cannot be readily identified through visual inspection or by odor, a sample should be collected for screening. Notify DEQ following the procedures in Section II.G if any significant pollutant loads are found.

8. - Examples of items to photograph are stormwater infrastructure, visible evidence of pollutants and possible pollutant sources at the site. To the extent possible, photograph stormwater features in such a way that they can be relocated and identified.

   a. - When possible, photograph unique landmarks such as building fronts and signage that will help to identify the location.

   b. - Write a brief description of the location and what each photograph captures.

9. - If no evidence of significant pollutant loading is found, the required IHRR inspection is complete.

   a. - Complete the inspection form with all information related to the point of connection inspection.

[1] Do not inspect outfalls with direct discharges to state waters. Permitted direct discharges to state waters are under the regulatory authority of DEQ.

b. - Inform the facility representative on site of any preliminary findings, and provide either a complete pollution prevention (P2) packet, or industry-appropriate insert(s) from the packet.

c. - Offer to tour a non-VPDES permitted facility for a voluntary educational site evaluation. Explain the voluntary site evaluation process.

i. - If the facility declines the voluntary site evaluation, note this on the inspection form and end the facility visit.

ii. - If the facility accepts the voluntary site evaluation:

1. On the Facility Inspection portion of the IHRR inspection form check "No" next to *Inspection Required* and check "Yes" next to *Permission Given* to indicate that the evaluation is voluntary and not a required, full facility inspection to track down the source of a significant pollutant load.

2. While educating the facility contact(s) about the elements included in the voluntary site evaluation, assess activities that could potentially contribute pollutants to the County's MS4. Discuss best management practices to help prevent or address pollutant discharges from the site.

10. If evidence of significant pollutant loading is found:

a. - Inform the facility representative of the finding of illicit discharge of a significant pollutant load at the point of connection.

b. - If the pollutant is suspected to be petroleum or hazardous, contact the FMO immediately to coordinate further response.

c. - If the facility is VPDES permitted from DEQ, refer the facility to DEQ following the procedures in Section II.G. [Note: The facility contact may request assistance with track down. The inspector(s) onsite may offer limited assistance to permitted facilities and facilities regulated by DEQ. The permittee or owner/operator of the facility is ultimately responsible for finding and eliminating the source of the significant pollutant load.]

d. - Promptly notify the MS4 County Facilities Program Coordinator when evidence of significant pollutant loading is found at a County facility.

e. - If neither b nor c above is met, continue with the facility inspection procedures in Section II.E below for non-VPDES, and non-hazardous dischargers.

E. Facility Inspection Procedures

1. - Introduce, or reintroduce, yourself to the facility representative.

a. - For non-VPDES, and non-hazardous dischargers, request entry to the site for purposes of identifying the pollutant source. [If the facility representative(s) refuse to permit entry for the site inspection (or later refuse to continue the inspection), suspend the inspection and leave the property. Contact the County Attorney's Office immediately for assistance with obtaining an administrative warrant. Return to the property to resume the facility inspection only after obtaining the necessary legal documents.]

b. - Explain the site inspection process.

c. - Ask for a brief overview of the facility operations and determine what, if any, personal protective equipment (PPE) will be needed while onsite.

2. - Once onsite, follow the track down procedures described in the Screening Procedures for Illicit Discharges (Procedural Memorandum SWPD14-04), as appropriate, to trace the pollutant through the stormwater infrastructure to its source. Document and photograph, where possible, each stormwater feature that is checked for evidence of significant pollutant loading. In some instances, the source of the pollutant(s) may be immediately obvious without performing a track down. Use of best professional judgment is allowed in identifying the pollutant source, provided that the inspector documents the reasons for deviating from the formal track down procedure.

3. - While onsite, conduct the facility inspection and complete the Industrial and High Risk Runoff Facility Site Inspection Form (Appendix D). It may be helpful to start by walking the perimeter of the site to observe storm drainage infrastructure and sheet flow drainage areas.

4. - If the pollutant source(s) are identified at the time of inspection, inform the facility representative of the findings and the actions the facility representatives are required to take. Inspectors may request immediate discontinuation of the discharge.

5. - Issue corrective action notices and notices of violation as appropriate. Refer to the separate enforcement plan, Procedural Memorandum SWPD14-03, for more details.

6. - Inform the facility representative of any referrals that will be made to other responsible county or state agencies.

7. - Contact all appropriate county or state agencies where immediate action is required.

   a. - Call the Fairfax County Fire Marshal's Office immediately to report releases of hazardous materials or other chemicals that pose an imminent threat to the environment.

   b. - Also notify DEQ immediately when the discharge of hazardous materials or a significant pollutant load enters or has the potential to enter state waters and/or if there is a significant ecological impact such as a fish kill.

   c. - For non-hazardous, non-emergency issues that may involve other agencies, refer to the latest Stormwater "Who to Call" List for the appropriate contact(s).

Note that inspections of facilities for which the Stormwater has obtained evidence of significant pollutant loading may be carried out in conjunction with other permittee programs. The facility and appropriate agencies will be informed according to steps 6 and 7 above.

F. Post-inspection Activities

1. - Enter inspection information into the IHRR inspection database and/or scan hardcopy inspection forms and save them to the corresponding facility folder on the network. Place hardcopy inspection forms in their corresponding hanging file folder.

2. - Download any photos that were taken onsite from the camera. Check that the photos' electronic file names match the file names written on the inspection documentation.

3. - Inform relevant county agencies of significant pollutant discharges that require responses from multiple county agencies and enhanced coordination.

4. - Inform the MS4 Program Coordination Section if it is unclear whether an outfall is an MS4 outfall and/or it is unclear whether a facility is within the MS4 service area. Inform the Stormwater GIS Section of any stormwater features that were missing or not properly located on the map for further investigation.

5. - Where corrective action is needed and Stormwater Planning has the lead enforcement responsibility, prepare the Notice of Corrective Action or Notices of Violation according to the Stormwater Planning's enforcement plan, Procedural Memorandum SWPD14-03. When a discharge is referred to another county agency, follow-up with that agency within 30 days for an update on the compliance status. Document the contact in the IHRR database. Note when and how the discharge was addressed once compliance is achieved.

6. - Schedule and conduct follow up site inspections as needed.

G. Referral to DEQ for Further Action

1. - The MS4 permit requires that the County refer the following facilities to DEQ for compliance review under the Virginia State Water Control Law: -

    a. - Facilities and operations having non-stormwater discharges that do not have coverage under an existing VPDES permit.

    b. - Facilities and operations identified under 40 CFR §122.26(b)(14) with manufacturing, processing, or raw materials storage outside that do not have coverage under an existing VPDES industrial stormwater permit.

    c. - Any VPDES industrial stormwater-permitted facility where there is evidence of significant pollutant loadings to the MS4.

2. - Upon completion of a point of connection, permitted outfall or facility inspection, the inspector should determine whether the facility meets any of the three criteria listed above. If urgent action is necessary, notify DEQ by phone and/or email immediately (no later than 24 hours after discovering the discharge). For both urgent and non-urgent referrals, mail a formal "Letter to DEQ-Compliance Review Referral" (Appendix E) to DEQ's Northern Regional Office. Maintain a hardcopy or scanned copy of the signed letter for County records.

3. - Attempt to contact DEQ at least once within 30 days for an update on the status of DEQ's investigation. Document the contact in the IHRR database. If known, note in the database when and how the problem discharge was addressed by DEQ and the facility.

H. Administrator of the SOP

This SOP document is administered by the Industrial and High Risk Runoff Program Coordinator within the Stormwater Planning Division. For more information about this document, contact Stormwater Planning Division at (703) 324-5500.

APPENDICES

Appendix A: Stormwater Planning Division Confined Space Policy

Appendix B: Stormwater Inspection Letter

Appendix C: Printed Map Template

Appendix D: IHRR Inspection Form

Appendix E: Compliance Review Letter to DEQ

APPENDIX A: Stormwater Planning Division Confined Space Policy

County of Fairfax, Virginia

MEMORANDUM

DATE: August 6, 2012

TO: Stormwater Planning Division

FROM: Craig Carinci, Director
Stormwater Planning Division

SUBJECT: Stormwater Planning Division Confined Space Policy Acknowledgement

It is the current policy of this division that Stormwater Planning staff shall not enter confined spaces regardless of the space being non-permit vs. permit required. In the event that entry is required, staff should utilize fully trained/certified attendants and entrants from Maintenance and Stormwater Management Division or approved contractors to enter the space. Below are additional Stormwater Planning Division (SWPD) policies regarding employee responsibilities pertaining to confined space.

- Entry is defined as any part of the body that breaks the plane of an opening to any confined space.
- SWPD staff may visually inspect from a safe location outside of confined spaces.
- SWPD staff shall not remove or open access panels to any confined space, such as but not limited to, manhole covers, doors, pipe end covers, etc. without approval from the SWPD Director.
- Breaking the plane of an opening to a confined space with an electronic powered device is not allowed without written approval from the SWPD Director.
- SWPD staff shall attend document Non-Entry Procedures for Confined Spaces training that has been approved by the SWPD Director.
- All SWPD employees must attend Confined Space Awareness Training as detailed in the current safety manual.
- Refresher training will be conducted annually to ensure proficiency or: when changes in confined space operations present a hazard that has not been addressed in prior training, deviations from confined space procedures are discovered or inadequacies and/or deficiencies in staff knowledge is identified.

I have read and understand the policies identified above.

_____ _____
Print Name Date

_____
Signature

Department of Public Works and Environmental Services
Stormwater Planning Division
12000 Government Center Parkway, Suite 449
Fairfax, VA 22035-0052
Phone: 703-324-5500, TTY: 711, Fax: 703-802-5955
www.fairfaxcounty.gov

APPENDIX B: Stormwater Inspection Letter

County of Fairfax, Virginia

To protect and enrich the quality of life for the people, neighborhoods and diverse communities of Fairfax County

August 20, 2014

«NAME»
«ADDRESS»
«CITY_STATE» «ZIP»

Reference: Stormwater Inspection of «NAME»

Dear Sir or Madam:

Fairfax County operates a public storm drainage system called a Municipal Separate Storm Sewer System (MS4) to collect stormwater that runs off the land and transport it to waterways. Fairfax County's MS4 permit requires the County to prevent the discharge of pollutants into its storm drainage system. This includes pollutant sources such as sanitary sewer connections and wash water from everyday cleaning and maintenance activities. In addition to being harmful to the environment, Chapter 124 of the Code of Fairfax County, Virginia makes it illegal to dump or pour anything other than surface or subsurface water into the gutter, down a storm drain or into a stream.

The MS4 permit requires the County to identify and control pollutants in stormwater discharges from industrial and commercial facilities that are most at risk of discharging a significant amount of pollutants to the storm drain system. Therefore, Fairfax County has developed an industrial and high risk runoff inspection program. The County will be conducting inspections of industrial and commercial properties and working with businesses to prevent stormwater pollution. County representatives plan to visit the property during the week of «WEEK_» for the purpose of conducting a stormwater inspection.

Good housekeeping practices and on-site pollution control are some of the most effective ways to prevent water pollution. Fairfax County considers you a valued partner in its effort to ensure a healthy environment. Please do not hesitate to contact me at 703-324-5500 with any questions or concerns. We appreciate your cooperation and ongoing assistance to protect the waters of Fairfax County as well as the Chesapeake Bay.

Sincerely,

Fred Rose, Chief
Watershed Planning and Assessment Branch

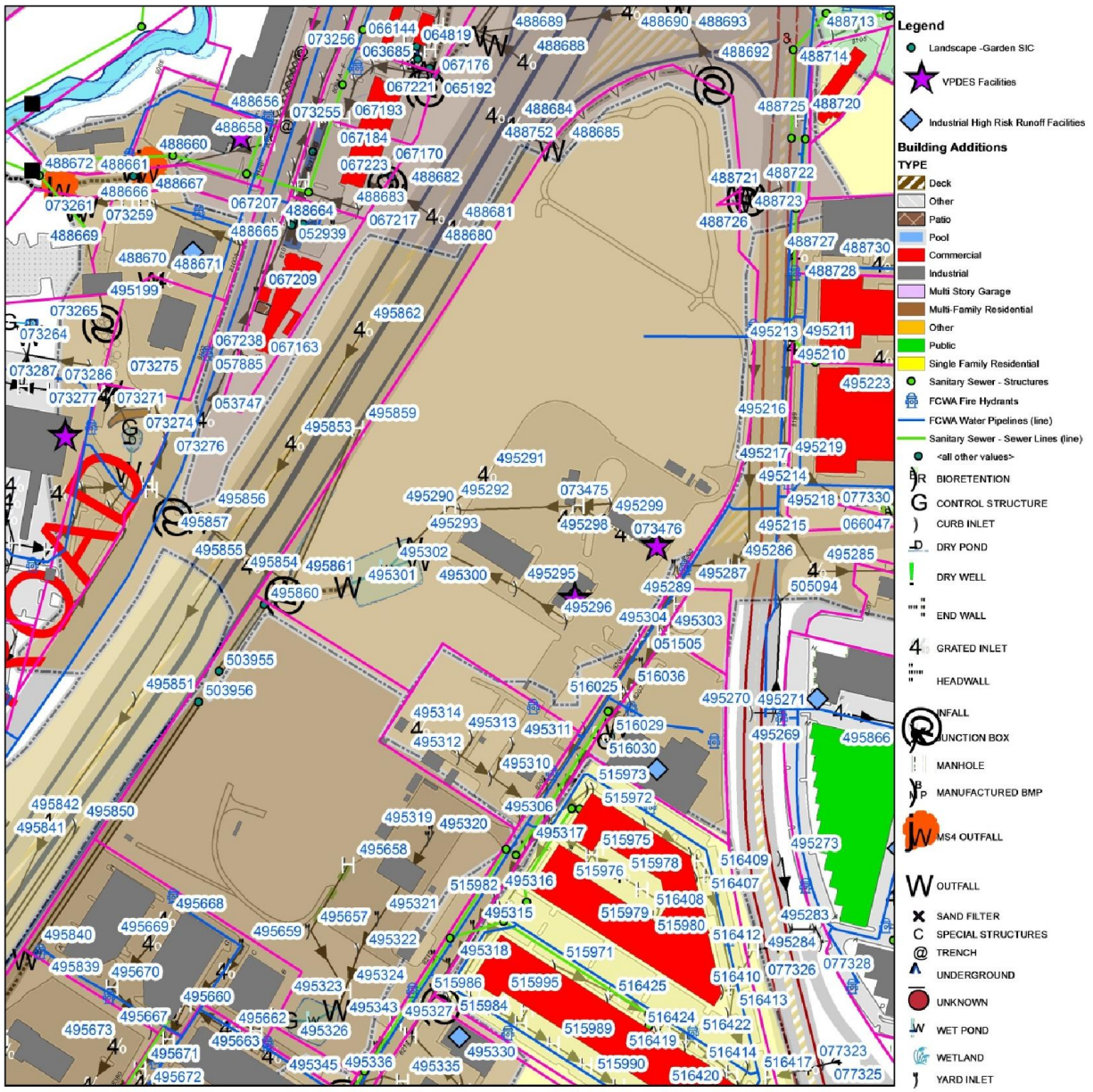
cc: [Inspector name], Code Specialist II, Watershed Planning and Assessment Branch, Stormwater Planning Division, Department of Public Works and Environmental Services

Department of Public Works and Environmental Services
Stormwater Planning Division
12000 Government Center Parkway, Suite 449
Fairfax, VA 22035-0052
Phone: 703-324-5500, TTY: 711, Fax: 703-802-5955
www.fairfaxcounty.gov

APPENDIX C: Printed Map Template

Department of Public Works and Environmental Services
Stormwater Planning Division
12000 Government Center Parkway, Suite 449
Fairfax, VA 22035-0052
Phone: 703-324-5500, TTY: 711, Fax: 703-802-5955
www.fairfaxcounty.gov

ID	Location	Watershed
VA0001945	Kinder Morgan SE Terminal-Newington 8200 Terminal Road Newington, VA 22122	ACCOTINK CREEK



APPENDIX D: IHRR Inspection Form

Revision #1 (draft), August 14, 2014

IHRR Inspection for Facilities in MS4

Inspector:	Date:	Time:
Site ID (FIPID):	Initial Inspection: ☐	Follow-up Inspection: ☐
Facility Name:	Address:	
Facility Closed: ☐	Suite: City:	
Watershed:	Building Location Description: ☐Industrial Park ☐Strip Mall ☐Multi-Story Commercial Building ☐Stand Alone	
Facility Rep.:	Facility Rep. Phone:	Facility Rep. Email:
Owner:	Owner Phone:	Owner Email:
Is the Facility VPDES Permitted?	Yes/No	VPDES Permit #
Facility Activity:	SIC Code:	

MS4 Connection and Track Down Inspection			Weather Conditions: Wet/Dry (48 hrs. no rain > 0.1")				
STMN							
MS4 Connection?	Yes/No						
Discharges to?	River/Stream Lake Pond Wetland Woods Detention Basin Ditch Other						
Flow Rate	Light Substantial No Flow						
If Flow Present							
Collection Time/ Analysis Time	Limits						
Water Temp (°C)		≥32°C					
pH		<6 or >9					
Specific Conductivity (µS/cm³)		>1,000 µS/cm³					
Copper (mg/l)		>0.5 mg/l					
Phenol (mg/l)		>0.4 mg/l					
Detergents (mg/l)		>0.25 mg/l					
Fluoride (mg/l)		≥0.5 mg/l					
Ammonia (2°) (mg/l)		>0.3 mg/l					
Chlorine (2°) (mg/l)		≥0.4 mg/l					

Page **1** of **5**

STMN (continued)						
Physical Indicators						
Odor (flow present)	Sewage Rancid/sour Petroleum Chemical Sulfide Other Not Applicable (NA)					
Color (flow present)	Clear Brown Gray Yellow Orange Red Green Other Not Applicable (NA)					
Turbidity (flow present)	Clear Slight Cloudiness Cloudy Opaque Not Applicable (NA)					
Floatable	Sewage Suds Petroleum Litter Other Not Applicable (NA)					
Deposits/Stains	Oily Flow Line Paint Other Not Applicable (NA)					
Abnormal Vegetation	Excessive Partially Inhibited Totally Inhibited Not Applicable (NA)					
Pipe Algae Growth	Brown Orange Green Other Not Applicable (NA)					
Comments:						

FACILITY INSPECTION

Inspection Required: ☐Yes ☐No Permission Given: ☐Yes ☐No ☐NA

Were all storm drainage systems inspected?	Yes/No/NA
List on-site Structural BMPs (i.e. dry/wet ponds, OWS, vegetated swales). Indicate condition.	

Any manufacturing, processing, or raw material storage outside w/ potential to impact storm?	Yes/No	If Yes, briefly describe:

Is there aboveground, outdoor storage of materials? Including stockpiles/chemicals/hazardous materials			Yes/No	If no, skip to Vehicle Operations			
List container type, materials, and amounts	Are materials located away from storm drains?	Condition of Container (if applicable)	Containers appropriately sealed?	Containers appropriately labeled?	Secondary containment provided?	Signs of leaks or stains	Comments
	Y/N		Y/N/NA	Y/N/NA	Y/N	Y/N	
	Y/N		Y/N/NA	Y/N/NA	Y/N	Y/N	
	Y/N		Y/N/NA	Y/N/NA	Y/N	Y/N	
	Y/N		Y/N/NA	Y/N/NA	Y/N	Y/N	
	Y/N		Y/N/NA	Y/N/NA	Y/N	Y/N	

Do vehicle operations have the potential to impact storm?	Yes/No	If no, skip to Parking Lot/Property
A. Do loading/unloading activities have the potential to discharge pollutants to the storm drain?	Yes/No/NA	
B. Are fueling operations present?	Yes/No/NA	
C. If fueling operations are present, are runoff control measures in place?	Yes/No/NA	
D. Are vehicles repaired outside?	Yes/No/NA	
E. Does vehicle washing occur that could go to a storm drain?	Yes/No/NA	
F. Other:	Yes/No/NA	

Parking Lot/Property		
A. Are they free of litter?	Yes/No	
B. Are they free of stains (e.g., petroleum, paint)?	Yes/No	

C. Can excessive solids/pollutants runoff to the MS4? (Including Sheet Flow)	Yes/No	
D. Are bins/roll off containers leaky or uncovered?	Yes/No/ NA	Who owns the containers?
Non Structural BMPs		
A. Is staff trained to prevent stormwater pollution? (If yes, indicate frequency.)	Yes/No/ NA	
B. Does facility keep records of outdoor inspections?	Yes/No/ NA	
C. Are spill kits available and labeled?	Yes/No/ NA	
Other:		

ACTION ITEMS

Are there Required Action Items: ☐Yes ☐No

Required Facility Corrective Action:	Deadline for Response (mm/dd/yyyy)	Comments:
IHRR Inspector Action:		
Is a follow-up Inspection Required: ☐Yes ☐No	Date Scheduled:	
Fairfax County Agency(s) that will be notified:		
☐ DCC Dept. of Code Compliance	☐ FMO Office of the Fire Marshal	☐ FW Fairfax Water ☐ HD Health Department
☐ IWS Industrial Waste Section	☐ WWCD Wastewater Collection Div.	☐ SDID Site Development & Inspection Div. ☐ MSMD Maintenance & Stormwater Management Div.
☐ Other:		
Why:		
Notify DEQ? ☐Yes ☐No		
☐ Facilities and operations having non-stormwater discharges that do not have coverage under an existing Virginia Pollutant Discharge Elimination System (VPDES) permit.		
☐ Facilities and operations identified under 40 CFR §122.26(b)(14) with manufacturing, processing, or raw materials storage outside that do not have coverage under an existing VPDES industrial stormwater permit.		
☐ Any VPDES-permitted facility where there is evidence of substantial pollutant loadings to the MS4.		
Violations Issued: ☐Yes ☐No		

County Information Provided: ☐ Business Card ☐ P2 Packet ☐ Ch. 124 ☐ Other
Comments:

REQUIRED FOLLOW-UP INSPECTION

Follow Up Inspection Date	Required Corrective Action	Date Completed	Comment

PHOTOGRAPHIC DOCUMENTATION COLLECTED

Photo name	Subject

APPENDIX E: Compliance Review Letter to DEQ

County of Fairfax, Virginia

To protect and enrich the quality of life for the people, neighborhoods and diverse communities of Fairfax County

DATE

Ms. Susan Mackert
Regional Industrial Stormwater Coordinator
Virginia Department of Environmental Quality
Northern Regional Office
13901 Crown Court
Woodbridge, VA 22193

Reference: [Facility Name]

Dear Ms. Mackert:

In accordance with Part I.B.2.g.5 of Fairfax County's Municipal Separate Storm Sewer System (MS4) permit, "the permittee shall refer the following facilities to the Department of Environmental Quality (DEQ), Northern Regional Office, for DEQ compliance review under the Virginia Water Control Law:

a. Facilities and operations having non-stormwater discharges that do not have coverage under an existing VPDES permit.
b. Facilities and operations identified pursuant to 40 CFR Part 122.26(b)(14) with manufacturing, processing, or raw materials storage outside that do not have coverage under an existing VPDES industrial stormwater permit.
c. Any VPDES industrial stormwater permit facility where there is evidence of significant pollutant loadings to the MS4.
d. Facilities that do not submit signed copies of Discharge Monitoring Reports (DMRs) to the permittee as required under a VPDES industrial stormwater permit.

The above referenced facility is being referred to DEQ in accordance with [a, b or c] from the above list. [Explain the findings of the inspection and why it requires referral to DEQ].

Please report any findings or conclusions regarding this facility to the following address:

Mr. Fred Rose, P.E., Chief
Fairfax County Department of Public Works and Environmental Services
Watershed Planning and Assessment Branch
Stormwater Planning Division
12000 Government Center Parkway, Suite 449
Fairfax, VA 22035-0052

Department of Public Works and Environmental Services
Stormwater Planning Division
12000 Government Center Parkway, Suite 449
Fairfax, VA 22035-0052
Phone: 703-324-5500, TTY: 711, FAX: 703-802-5955
www.fairfaxcounty.gov/dpwes

We appreciate your cooperation in this matter. Please contact [Inspector] at 703-324-5500 with any questions or concerns you may have regarding the above request.

Sincerely,

Fred Rose
Chief
Watershed Planning and Assessment Branch

cc: Takisha Cannon, Ecologist III, Watershed Planning and Assessment Branch (WPAB), Stormwater Planning Division (SWPD), Department of Public Works and Environmental Services (DPWES)
[Inspector], Code Specialist II, WPAB, SWPD, DPWES

Fairfax County 2021 MS4 Program Plan and Annual Report

Appendix P10

Post-Construction Stormwater Inspection and Maintenance Policies and Procedures

VSMP Permit Number VA0088587
9-30-2021

Post-Construction Stormwater Inspection and Maintenance Policies and Procedures

January 2016
Revised April 2017
Revised April 2020
Revised June 2021

Prepared by:

Fairfax County Department of Public Works and Environmental Services (DPWES)
Maintenance and Stormwater Management Division (MSMD)
10635 West Drive
Fairfax, Virginia 22030

In consultation with:

GKY & Associates, Inc.
4229 Lafayette Center Drive
Suite 1850
Chantilly, VA 20151

Table of Contents

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Private Stormwater Facility Enforcement

Introduction

Section 9VAC25-870-112 of the Virginia Administrative Code, Section 124-2-10 of Fairfax County Code and Part I.B.2 of Fairfax County's Phase I Municipal Separate Storm Sewer System (MS4) Permit (VA0088587 Part I.B.2.h) all include requirements for the long term operation and maintenance of stormwater control measures (SCM) including stormwater management facilities and Best Management Practices (BMPs). With approximately 8,000 SCMs located within the unincorporated Fairfax County boundary, this represents both a regulatory mandate as well as a considerable program investment toward protecting the general public's health, safety, and property through the maintenance of properly functioning stormwater management infrastructure.

Virginia code VAC15.2-625 delegates the responsibility of performing inspections and maintenance of public infrastructure to the Director of the Department of Public Works and Environmental Services (DPWES) of Fairfax County. The Maintenance and Stormwater Management Division (MSMD) of the DPWES, hereinafter called "MSMD" or "County", provides direct maintenance for approximately 30% of the noted SCM inventory, which primarily includes dry ponds serving residential areas. These SCMs or "facility(ies)" are referred to as "public facilities." The remaining 70% of the SCM inventory are referred to as "private facilities" and are inspected by MSMD, but maintained by the facility owner or operator. This presents some unique programming challenges to ensure private facility owners are educated and aware of proper maintenance requirements and able to execute the necessary maintenance work.

This document provides an overview of the policies and procedures for the inspection and long term maintenance of both public and private facilities located in Fairfax County. Public facilities are inspected and maintained per County schedules and guidelines by MSMD. While private facilities must be maintained by the owner, the MSMD also inspects all private facilities at least once every five years to ensure that they are being properly maintained.

The following sections document the County's authorities, guidelines, required records, and procedures for the inspection and maintenance of both public and private SCMs. County enforcement protocols for private facilities, with attendant timelines and penalties, are also reviewed.

Authority and Regulations

The Code of Fairfax County includes several ordinances that align to facilitate the necessary authority to comply with state code and with the County's MS4 permit. The Stormwater Management Ordinance (Chapter 124); Erosion and Sediment Control Ordinance (Chapter 104); Zoning Ordinance (Chapter 112); and Chesapeake Bay Preservation Ordinances (Chapter 118) all provide either direct or tangential County authority to manage stormwater in accordance with the terms of Virginia's Stormwater Management Act, Erosion and Sediment Control Law and Chesapeake Bay Preservation Act, as well as the County's MS4 permit. In addition, the County's Public Facilities Manual (PFM) serves as the primary administrative tool supporting these ordinances, outlining the County's land development and management technical standards, specifications, and accepted practices.

The following is a summary of regulations and requirements which specifically apply to both public and private SCMs. While these concepts are reflected across all of the authorities and ordinances noted above, the primary authority is referenced in each summary subsection.

Stormwater Management Regulations

It is the responsibility of the owners of SCMs to maintain the proper functioning of a facility, per its original design. Maintenance should be performed on a regular basis and deficiencies addressed within an advised and reasonable timeline and per facility specific maintenance schedules and guidelines, or the default maintenance requirements noted

in the original design specifications or within the Attachment A of the recorded Private Maintenance Agreement (PMA). Where a PMA exists, the PMA and Stormwater Management Ordinance §124-2-10 serve as the primary, regulatory governing authority. If a PMA does not exist, then the County uses the requirements specified on the site plan as the primary governing authority, per Zoning Ordinance §18-901(1) and 17-108(6).

Inspection/Maintenance Records

For facilities constructed after July 1, 2014 under the Stormwater Management Ordinance, the facility owner must have a system in place, in accordance with §124-2-5 and 124-2-10, to accommodate the performance and documentation of inspections and maintenance on an annual basis.

Public and private SCM records are maintained electronically by the County. Private facility owners may maintain copies of their records in paper or electronic format, provided they are accurate, current, legible, and easily accessible. All private and public SCMs are noted in MSMDs database, for regulatory and inventory purposes. The database, Infor Enterprise Asset Management (EAM) system (Infor-EAM™), includes information such as the general facility location, acres treated, type of facility, inventory date, bond release date, last inspection date, etc.

Inspection Authority

The County has established an inspection program, in accordance with the County Stormwater Management Ordinance (§124-2-5 and 124-2-10), and may enter establishments for the performance of reasonable inspections or investigations. PMAs provide the County with authority to enter a facility to conduct inspections and related activities to ensure the facility functions per the approved design plan. This program includes routine inspections, random regulatory inspections, or investigations resulting from complaints or indications of potential discharge issues. In addition, many County PMA documents also include the County's right to perform maintenance at the facility owner's expense if necessary to achieve adequate functionality.

Regardless of whether a PMA exists, the County will notify the person responsible for the property that the County intends to conduct a site inspection. In the event there is no PMA, access to the inspection site will be obtained in accordance with applicable laws.

Public Stormwater Facility Inspection and Maintenance

Maintenance Schedule and Guidelines

Public SCMs should be maintained according to the established maintenance protocols specific to public facilities as well as any facility specific maintenance schedules and guidelines, County ordinances, and any original design specifications that apply to the specific facility.

Routine maintenance for public ponds[1] is performed once or twice per year. Routine maintenance for ponds includes grass mowing, basic channel clearing, trash removal, sign installation and dewatering. Non-pond facility routine maintenance is performed on the following Green Stormwater Infrastructure (GSI) facilities: tree filters, bioretention facilities, green roofs, permeable pavement facilities, and vegetated swales. All other non-pond facility types are maintained as needed via non-routine maintenance work orders issued as a result of observed deficiencies during an annual inspection. Out of turn inspections and non-routine maintenance may be initiated by a complaint received by MSMD. GSI facility routine maintenance includes trash removal, sediment removal, and removal/trimming of overgrown and unwanted vegetation.

[1] The County is in the process of revising the routine maintenance program for Constructed Wetlands (WL).

Items such as tree and invasive vegetation removal, major sediment removal, concrete repairs, etc. on ponds, for example, are considered non-routine maintenance tasks. Non-routine needs are prioritized in order to address safety, urgent needs and to manage resources efficiently. Please refer to the Work Flow Process Charts (Appendix C) to see an overview of the typical workflow and responsible parties. Table 1, below, reviews maintenance frequencies, by facility type.

Inspections

The purpose of public facility inspections is to assess and record the current, point-in-time condition of the public SCM compared to its original design on either an annual or biennial (once every two years) basis. MSMD's biennial inspections reflect an alternative inspection schedule, as allowed in the County's MS4 Permit [PART I B.2) h) 1) (b)]. The alternative inspection schedule was developed to reflect the County's assessment of the risk of failure based on facility type and frequency of routine maintenance. Facilities that receive routine maintenance one or more times per year are scheduled for biennial inspections rather than annual. This reduced inspection frequency proves sufficient to maintain proper function because the County's routine maintenance schedule provides additional visual evaluation of each facility throughout the year. For all other facility types without routine maintenance schedules, MSMD performs an annual inspection of those facilities. Table 1, below, notes scheduled inspection and maintenance frequencies by facility type.

Table 1-Maintenance and Inspection Frequency

Facility Type	Routine Maintenance Frequency	Inspection Frequency
Amended Soil	Not Applicable	Annual
Bioretention	Annual (4x/year)	Biennial
Cistern/Rain Barrel	Not Applicable	Annual
Dry Pond (Non-regional)	Annual (HOA 1x/year, non-HOA 2x/year)	Biennial
Dry Pond (Regional)	Annual (4x/year)	Annual
Floating Treatment Wetland	Annual (1x/year)	Annual
Green Roof	Annual (4x/year)	Biennial
Manufactured BMP	Not Applicable	Annual
Open Space Areas	Not Applicable	Annual
Parking Lot Detention	Not Applicable	Annual
Permeable Pavement	Annual (1x/year)	Biennial
Reforestation	Not Applicable	Annual
Rooftop Detention	Not Applicable	Annual
Rooftop Disconnection	Not Applicable	Annual
Sand Filter	Not Applicable	Annual
Tree Filter (Including Filterra)	Annual (4x/year)	Biennial
Infiltration Trench	Not Applicable	Annual
Underground Storage/Detention	Not Applicable	Annual
Vegetated Filter Strip	Not Applicable	Annual
Vegetated Swale	Annual (4x/year)	Biennial

Facility Type	Routine Maintenance Frequency	Inspection Frequency
Wet Pond (Non-regional)	Annual (HOA 1x/year, non-HOA 2x/year)	Biennial
Wet Pond (Regional)	Annual (4x/year)	Annual
Wet Swales[2]	Not Applicable	Annual
Wetland (Constructed Wetland)	Not Applicable	Annual

The inspection protocol identifies any visible deficiencies that prevent the facility from functioning as designed (i.e., non-functional). Further, these protocols are also intended to ensure the safety of inspection personnel and inform the owner and general public as part of the County's overall education and outreach efforts. This section is a brief process overview; detailed procedures are contained in the County's Inspections SOP (Inspection SOP – Appendix D).

Inspections on public pond facilities are scheduled within a week of annual routine maintenance, so that the maintenance contractor's work can be verified and to ensure overgrown vegetation does not hamper the facility's inspection. Prior to inspection, inspectors prepare an inspection folder with any relevant site maps, forms, and letters. Unlike private facility inspections, a pre-inspection letter to the facility owner is not part of the inspection preparations; however, inspectors do attempt to check-in with the property owner, manager, or tenant to advise of their presence and purpose prior to the inspection. This brief check in with the property owner is done primarily as a courtesy, whenever feasible; however, some public facilities - - such as schools, child care centers, and assisted living communities - - have required check-in and credentialing processes which must be followed for the safety and consideration of the students and/or residents. Unless previously arranged with the owner or if the facility is located in a high traffic area, inspections take place during normal working hours, Monday through Friday, 8:00am to 5:00pm. The County does notify a property owner, and when applicable adjacent property owners, when non-routine maintenance work, as described above, is scheduled. All inspections must also follow proper safety procedures, especially those pertaining to removal of manhole covers and Confined Space Entry (29 CFR 1910), the latter of which is not routinely undertaken under this program.

MSMD has created a unique inspection form for each facility type, with relevant sections and maintenance items. Inspection forms are included in Appendix A of this document, and all forms follow the same general format. Maintenance items are scored on a range of 1-3, with (1) for severe issues with a high priority and (3) for minor items with a lower priority. Maintenance items rated at (3) still have the potential for significant future issues, if not addressed in a reasonable amount of time. The forms also allow for a notation of ⊙, which means items do not currently need non-routine maintenance and/or should be addressed through regular routine maintenance, or N/A which means that item is not applicable to the specific facility being inspected.

Photographs, sketches, measurements, and observations are documented, as appropriate to the facility and per inspection procedures. For public facilities, any additional measurements that will be necessary in order to generate a work order are also taken while in the field, per the Field Measurements and Work Order Preparation SOP (Appendix D).

Most public SCMs are dry ponds serving residential areas. During inspection of all facility types, however, the most common maintenance issues encountered include the following:

- Blockages
- Structural issues
- Joint issues
- Vegetation (or lack thereof)
- Animal holes/burrows
- Erosion/undermining/cave-ins
- Trash/debris
- Sedimentation
- Algal/water quality issues
- Encroachment

[2] The County is in the process of developing an inspection form for Wet Swales (WS).

Inspectors should also remain alert for signs of potential illicit discharges or public hazards, both of which require immediate reporting from the field. Any indications of possible illicit discharges are reported to the Fairfax County Industrial and High Risk Runoff/Illicit Discharge and Improper Disposal (IHRR/IDID) staff, and conditions that represent a public safety hazard (such as actively failing dam embankments, missing/loose manhole covers, etc.) are immediately reported to MSMD.

After the inspection is complete, the inspector prepares and submits an inspection report that is reviewed internally, and a work order scope and work narrative are generated, if applicable. Work orders and related narratives are submitted per the guidelines of the Field Measurements and Work Order Preparation SOP (Appendix D). All information is entered into the County's Infor-EAM™, with special attention to noting any changes to safety, access information, or incorrect information that could impact future inspections.

Work orders are then submitted by MSMD to in-house crews or to a contractor, as appropriate to address the deficiency(ies), with a request for proposals. Once the proposal for work has been submitted and authorized, maintenance work is scheduled for completion. Scheduling non-routine maintenance takes approximately two months from the time of conducting the facility's routine, annual maintenance.

During inspections, MSMD and their contractors identify any necessary non-routine maintenance work. Each inspection form is tailored to the type of facility being inspected and has a standardized prioritization process. Table 2 shows how MSMD prioritizes and schedules this work for all public facilities.

Table 2-Priority and Targeted Response Time

Assessed Condition	Priority	Targeted Response Time
Good / Excellent	No Work Required (NWR)	None
Fair	3	0 to 2 years
Poor / Non-Emergency	2	2 weeks to 1 year
Failed – Emergency (house flooding, structural endangerment, roadway flooding)	1	Immediate to 2 weeks

During the process of maintenance, required work may move to a lower priority. For example, a Priority 1 (P1) issue can be downgraded to Priority 2 (P2) if a short term solution, such as stabilizing a cave-in, can be implemented, allowing time for the design of a longer-term structural solution. In other instances the targeted response time may not be met due to factors outside of the county's control, such as land ownership affecting easements and access, facilities that need to be re-designed, and weather events. In all instances, the county will initiate measures to ensure public safety and take action to correct critical deficiencies in a timely manner. In some instances, a facility designated as Priority 3 (P3) will not be maintained because the maintenance items are extremely minor in nature and not critical to the safety and performance of the system. In those cases, the P3 designation will remain and maintenance will be deferred until the benefit of performing the work exceeds the cost to do so.

Follow-up

All County maintenance work is tracked in the Infor-EAM™ database and through a maintenance tracking spreadsheet. Maintenance contractors, for both routine and non-routine tasks, submit photos upon completion of all maintenance work orders. Photos, completion dates, and costs are included and updated on the work order in Infor-EAM™ and also in the maintenance tracking spreadsheets. For public facilities, the tracking spreadsheets are primarily used to track

costs, completion dates and any related notes on work completed/not completed. MSMD verifies routine maintenance completion via submitted photographs, and project completion reports are generated for all non-routine maintenance work.

Private Stormwater Facility Inspection and Maintenance

Maintenance Schedule and Guidelines

Private SCMs must be maintained by the owner according to established maintenance schedules and guidelines as noted in the Private Maintenance Agreement (PMA), County guidelines, and the original design specifications. Maintenance should be performed on a regular basis and deficiencies addressed within an advised and reasonable timeline, as noted in the recorded PMA. Should the facility not have a PMA in place, then County specific maintenance schedules, guidelines, and/or the default maintenance requirements noted in the original design specifications will be the governing directives.

Private facility owners must also maintain accurate records on site and make them available to the County upon request. The County also inspects all private facilities at least once every five years.
Private SCMs include a wide variety of types, including:

- Amended Soils
- Bioretention Facilities
- Cistern/Rain Barrel
- Ponds (Dry or Wet)
- Green Roofs
- Manufactured BMPs
- Parking Lot Detention
- Permeable Pavement
- Rooftop Disconnection
- Reforestation
- Rooftop Detention
- Sand Filters
- Tree Filters
- Infiltration Trenches
- Underground Detention
- Vegetated Filter Strips
- Vegetated Swales
- Constructed Wetlands

Inspections

As previously noted, the purpose of facility inspections is to regularly assess and record the current condition and functionality of the SCM compared to its original design. Informing owners of their facility's condition in a technically accurate but easily understood manner is particularly important for the private facility inspection process. Facility owners may lack the technical background to fully comprehend the scope of maintenance requirements, the means of correcting noted deficiencies, and/or an understanding of the full risks of failing to properly maintain their facilities. The general inspection procedure for private facilities, with a few notable exceptions, is the same as that for public facilities. However, the reporting for private facilities is specifically designed to facilitate the private owner's understanding of the maintenance items identified in the inspection, if any, and responsibility to resolve any noted maintenance issues.

The County begins the private facility inspection process by preparing a pre-inspection letter that is mailed to the private facility owner at least two weeks prior to the County's inspection. The County also conducts a thorough pre-inspection research process through which it reviews facility information such as site plans, available "as built" drawings, GIS, property ownership information, PMAs, etcetera. This pre-inspection research also ascertains any prior noted deficiencies, maintenance completed, known access issues, or other conditions of note prior to the County's inspection. If there are known or previously recorded access issues, such as locked gates, excessive vegetation, etc., the inspectors may also contact the facility owner to ensure appropriate site access is provided for the inspection.

The County then prepares an inspection folder with any maps, forms, letters, and public outreach materials for use on the day of inspection. Inspections are conducted in the same manner as that for public facilities, with the exception that detailed measurements are not required for the purpose of preparing a work order for any noted deficiencies, as any necessary maintenance is the responsibility of the facility owner.

Within approximately thirty (30) days of a completed inspection, the County provides the facility owner with a Notice of Inspection (NOI), which includes several pertinent site and informational materials per the County's Inspection SOP. The primary documents submitted are a cover letter and a Condition Assessment Report (CAR) with photos. The CAR is a detailed report explaining the observations and findings resulting from the inspection, with direct reference to attached and captioned photos. An orientation sketch is also typically included as part of the CAR, as an aid to understanding the facility layout. The CAR summarizes deficiencies as follows:

- No deficiencies were noted during the assessment; or
- Maintenance is recommended to ensure continued functionality of the facility; or
- Immediate maintenance is required to restore proper functionality of the facility.

A blank Maintenance Activity Report (MAR) is also included with NOI for facilities with recommended or required maintenance. A MAR is provided so the owner may document and verify that the necessary maintenance work has been completed; this form is completed and submitted back to the County, along with photos of the completed work. For facilities with recommended maintenance, the receipt of a completed and acceptable MAR is not a requirement to close the inspection files. However, for facilities with required maintenance, the receipt of a completed and acceptable MAR is the trigger to close the inspection files. Examples of a NOI cover letter, a CAR, and a MAR are included in Appendix B. Special care is taken to make certain pictures and text are presented clearly to facilitate owner understanding, noting that the owner may or may not have any experience dealing with facility functionality and maintenance requirements. All documentation must clearly reference the facility design and function, with any necessary maintenance needs placed in clear context.

As with public facility inspections, the basic inspection information is entered into the County's Infor-EAM™, with special attention to noting any changes to safety, access information, or incorrect information that could impact future inspections.

For private inspections, any contracting bids and maintenance are the responsibility of the facility owner. The County tracks the receipt of the NOI and any responses in order to determine whether noted deficiencies are properly addressed or whether further action may be necessary, as noted below.

Tracking Protocols

For facilities with required maintenance the NOI is mailed to the private facility owner via certified mail and returned certified mailing slips are tracked by delivery date. If no MAR is received, reminder letters are sent out 45 days, and again 90 days, after initial NOI receipt. If the owner responds with a fully completed MAR, within either the 45 or 90-day allowable time frames, then the inspection files for that facility are closed out on the County tracking database and no further follow-ups or actions will take place until the next scheduled inspection or receipt of a complaint by the general public. Once the NOI letter is received by the facility owner, he/she has a total of 135 days to respond or the case is sent to enforcement for further action. For facilities with recommended maintenance, tracking will stop once the NOI is mailed and the inspection files will be closed-out. All mailing dates and any MAR received dates are recorded in a tracking spreadsheet for each year's worth of private inspections, along with the Enforcement-submittal date and comments on any non-MAR owner responses. These dates are also saved in the Infor-EAM™ database.

Private Stormwater Facility Enforcement

Enforcement Authority – Facilities with a Private Maintenance Agreement (PMA)

Should the owner fail to maintain the SCM in functioning order and in keeping with its approved plan and maintenance guidelines, the terms of the recorded PMA may be enforced or the county may pursue civil penalties or seek injunctive relief.

Enforcement Authority – Facilities without a PMA

Should the owner fail to maintain the SCM in accordance with its approved plan, and a PMA is not recorded, the County has the following option available:

- Enforcement through the Zoning Ordinance (Chapter 112 of the County Code)
    - §17-108.6: Requires use and structures' continued compliance with all applicable regulations regarding drainage, design criteria/specifications as noted in the Public Facilities Manual (PFM), and other site plan requirements as noted.
    - §18-901-3: Authorizes the County to notify the facility owner, requesting corrective action via a Notice of Violation (NOV) and to pursue the civil and criminal penalties noted below in the "Penalties for Non-Compliance" section.

Enforcement and Compliance Timeframes

The first step of any enforcement action is to verify that the facility ownership has not changed since the initial inspection. If ownership has changed, then the NOI package is mailed to the new owner of record and the response times are re-established for the new owner. Otherwise, the facility will proceed through the enforcement process.

At the end of the response expiration period (135 days), MSMD will provide advance notice to the property owner (Notice of Maintenance Verification (NOMV) letter) of another site inspection to determine if maintenance needs previously specified in the NOI have been fully completed. MSMD will then coordinate with the Land Development Services Permitting and Code Administration (PACA) to perform the inspection. If MSMD determines maintenance needs have been fully completed, the facility will be removed from enforcement. If it is determined maintenance needs have not been fully completed, and the facility is deemed non-functional, MSMD will transfer the enforcement case to PACA to issue a Notice of Violation (NOV) and provide further enforcement actions.

Notice of Violation (NOV)

The County's DPWES MSMD and PACA review the enforcement documentation package and, if appropriate, the PACA sends a Notice of Violation (NOV) to the facility owner. The owner has 60 days to correct the deficiencies or may choose to appeal the NOV within the timeframes set forth in the regulations. During any necessary enforcement period, the PACA works closely with the Office of the County Attorney (OCA) to pursue any civil penalties and/or injunctive relief when additional enforcement actions are deemed necessary.

Penalties for Non-Compliance

Failure to comply with an NOV issued under the Stormwater Ordinance or the Zoning Ordinance may result in legal action to obtain compliance through civil penalties or injunctive relief. The severity of civil penalty sought depends on the legal basis for enforcement (Zoning Ordinance or Stormwater Ordinance) and the severity of the violation.

Appendix A-Inspection Forms

There are 17 inspection forms used by the County, representing the increasingly complex and sophisticated range of common SCM types within the County. Some forms are used for more than one facility type. All forms follow the same basic format and scoring protocol. Facility types and forms are as follows:

- A-1: Amended Soils Inspection Form
- A-2: Bioretention Inspection Form
- A-3: Cistern/Rain Barrel Inspection Form
- A-4: Pond/Wetland Inspection Form
- A-5: Green Roof Inspection Form
- A-6: Manufactured BMP Inspection Form
- A-7: Parking Lot Detention Inspection Form
- A-8: Permeable Pavement Inspection Form
- A-9: Rooftop Disconnection Inspection Form
- A-10:Reforestation/Floating Treatment Wetland Inspection Form
- A-11: Rooftop Detention Inspection Form
- A-12: Sand Filter Inspection Form
- A-13: Tree Filter Inspection Form
- A-14: Infiltration Trench Inspection Form
- A-15: Underground Detention Inspection Form
- A-16: Vegetated Filter Strip/Open Space Inspection Form
- A-17: Vegetated Swale Inspection Form

A-1: Amended Soils Inspection Form

Amended Soils Inspection Form

Fairfax County Maintenance and Stormwater Management Division

Inspector: Cert ⊙
Inspector: Cert ⊙
Date:

Site ID: Facility ID: Facility Name:
Coordinates / ParID :
Address: Watershed: District:

Functional? Yes No

Score Totals: 1 2 3

Scoring Key

①	High Priority / Non-functional
②	Moderate Priority / Approaching Non-functional
③	Low Priority / Functional
⊙	No Priority / Continue Routine Maintenance
⊗	Not Applicable

Notes / Specifications:

Facility Specific Info:

Facility Type / Addl Facility Info:

Signs

SCORE	PHOTO	DESCRIPTION
③⊙⊗		Facility Sign
③⊙⊗		Facility Labeling

Weather Conditions

Last Rainfall	Date:	Amount:
	Data Source:	

Current weather conditions?

Accessibility

Access Comments:
New Access Comments for EAM:

SCORE	PHOTO	DESCRIPTION
①	⊙⊗	Overall Facility Access
①②③⊙⊗		Component Access: _____

ACCESS PROBLEMS (Circle)
Locked Gate / Fence
Other:_____

NEXT STEP (Circle One)
Coordinate with Owner
Return for Re-inspection
Request Photos from Owner
Contact MSMD
Other:_____

Amended Soils Area

SCORE	PHOTO	DESCRIPTION	COMMENTS / DIMENSIONS
①	⊙⊗	Impervious Area Encroachments	*Description:*
①	⊙⊗	Evidence of Excessive Fertilizer / Chemicals	
①②③⊙⊗		Obstructions to Infiltration	*Description / Area:*
①②③⊙⊗		Trash / Debris / Sediment	*Description / Amount:*
①②③⊙⊗		Erosion / Bare Spots	*Area:*
①②③⊙⊗		Grass / Groundcover Condition	
①②③⊙⊗		Other:	

Other

SCORE	PHOTO	DESCRIPTION	LOCATION
①②③⊙⊗		Encroachments	
①②③⊙⊗		Modifications	
①②③⊙⊗		Mosquito Habitat	
①②③⊙⊗		Evidence of Possible Illicit Discharge	

(Email to report: stormwaterpollution@fairfaxcounty.gov)

INSPECTOR COMMENTS

A-2: Bioretention Inspection Form

Bioretention Inspection Form

Fairfax County Maintenance and Stormwater Management Division

Inspector: Cert ⊙
Inspector: Cert ⊙
Date:

Site ID: Facility ID: Facility Name:
Address: Coordinates / ParID :
Watershed: District:

Functional? Yes No

Score Totals: 1 2 3

Scoring Key
① High Priority / Non-functional
② Moderate Priority / Approaching Non-functional
③ Low Priority / Functional
⊙ No Priority / Continue Routine Maintenance
⊗ Not Applicable

Notes / Specifications: Facility Specific Info:

Facility Type / Addl Facility Info:

Signs			Weather Conditions		
SCORE	PHOTO	DESCRIPTION	Last Rainfall	Date:	Amount:
③⊙⊗		Facility Sign		Data Source:	
③⊙⊗		Facility Labeling	Current weather conditions?		

Accessibility				
Access Comments:			ACCESS PROBLEMS (Circle)	NEXT STEP (Circle One)
New Access Comments for EAM:			Locked Gate / Fence	Coordinate with Owner
			Heavy Vegetation	Return for Re-inspection
SCORE	PHOTO	DESCRIPTION	Stuck / Broken Cover	Request Photos from Owner
① ⊙⊗		Overall Facility Access	Equipment Needed: _____	Contact MSMD
①②③⊙⊗		Component Access: _____	Other:_____	Other:_____

Ponding Area						
SCORE	PHOTO	DESCRIPTION	COMMENTS / DIMENSIONS			
① ⊙⊗		Standing Water in Basin				
① ⊙⊗		Basin Area	Observed:		Specified:	
① ⊙⊗		Ponding Depth	Observed:		Specified:	
①②③⊙⊗		Trash / Debris / Sediment *Description / Amount:*				
①②③⊙⊗		Mulch Cover (2-3" min.)				
①②③⊙⊗		Erosion / Bare Spots *Area:*				
①②③⊙⊗		Repair Filter Fabric				
①②③⊙⊗		Other: *Description:*				
	Plant Material		Plants in Inventory:			
①②③⊙⊗		Trees Missing *(20% < ③ < 40% < ② < 60% < ①)*	Observed:	Specified:	Total % of Plant Material Coverage:	
①②③⊙⊗		Shrubs Missing *(see above)*	Observed:	Specified:		
①②③⊙⊗		Groundcover Plants Missing *(see above)*	Observed:	Specified:		
①②③⊙⊗		Unhealthy / Damaged				
①②③⊙⊗		Overgrown / Invasive Vegetation				
①②③⊙⊗		Other: *Description:*				
	Observation Well / Cleanout(s)					
① ⊙⊗		Missing / Not Found				
① ⊙⊗		Cap Missing / Stuck				
①②③⊙⊗		Water / Sediment Observed in Well?				
①②③⊙⊗		Vegetation / External Obstructions				
①②③⊙⊗		Damaged *Description:*				
①②③⊙⊗		Other: *Description:*				

Inflow(s)									
SCORE	PHOTO	DESCRIPTION	1	2	3	4	5	6	
		Material / Size / Type:							
①②③⊙⊗		Blockage *(③ < 25% < ② < 75% < ①)*							
①②③⊙⊗		Trash / Debris / Sediment *Description / Amount:*							
①②③⊙⊗		Erosion / Undermining							
①②③⊙⊗		Spalling / Deterioration							
①②③⊙⊗		Separation / Misalignment							
①②③⊙⊗		Overgrown Vegetation / Tree Removal							
①②③⊙⊗		Other: *Description:*							

Pre-Treatment / Energy Dissipators				
Type(s): Flow spreader / Forebay / Gravel diaphragm / Grass filter strip / Grass channel / Leaf screen / Level spreader / Other:_____				
SCORE	PHOTO	DESCRIPTION	COMMENTS / DIMENSIONS	
① ⊙⊗		Missing / Non-Functional *Description:*		
① ⊙⊗		Inconsistent with Plans *(Area, Vertical Drop, etc.)*	Observed:	Specified:
①②③⊙⊗		Damage / Deterioration *Description:*		
①②③⊙⊗		Trash / Debris / Sediment *Description / Amount:*		
①②③⊙⊗		Other:		

Dam / Berm and Overflow Spillway				
SCORE	PHOTO	DESCRIPTION	COMMENTS / DIMENSIONS	
① ⊙⊗		Missing	Observed:	Specified:
①②③⊙⊗		Slope Erosion *Area:*		
①②③⊙⊗		Bare Spots *Area:*		
①②③⊙⊗		Animal Holes		
①②③⊙⊗		Overgrown Vegetation / Tree Removal		
①②③⊙⊗		Trash / Debris / Sediment *Description / Amount:*		
①②③⊙⊗		Other: *Description:*		

Bioretention Inspection Form Page 2

Site ID: _____ Facility ID: _____ Facility Name: _____

Control Structure				
Function:		Orifice Size:	Type (Circle): Riser Structure / Pipe End / Weir / Other:_____	
SCORE	PHOTO	DESCRIPTION		COMMENTS / DIMENSIONS
①②③☉⊗		Damage / Deterioration	Description:	
①②③☉⊗		Vegetation / External Obstructions		
①②③☉⊗		Other:	Description:	
		Low-Flow Orifice and Trash Rack		
① ☉⊗		Orifice Plate Missing / Non-Functional		
① ☉⊗		Trash Rack Missing / Non-Functional		
①②③☉⊗		Blockage	(③ < 25% < ② < 75% < ①)	
①②③☉⊗		Damage / Deterioration	Description:	
		Top Trash Rack and Anti-Vortex Plate		
① ☉⊗		Pad Lock Missing		
①②③☉⊗		Blockage	(③ < 25% < ② < 75% < ①)	
①②③☉⊗		Damage / Deterioration	Description:	
		Riser Interior		
①②③☉⊗		Trash / Debris / Sediment	Description / Amount:	
①②③☉⊗		Ladder / Steps Condition		
①②③☉⊗		Manhole Condition		

Underdrain(s) and Principal Spillway Pipe				
SCORE	PHOTO	DESCRIPTION	UNDERDRAIN(S)	PRINCIPAL SPILLWAY PIPE
		Specified on Approved Plans?		
① ☉⊗		Missing		
①②③☉⊗		Blockage (③ < 25% < ② < 75% < ①)		
①②③☉⊗		Spalling / Deterioration		
①②③☉⊗		Separation / Misaligned Joints		
①②③☉⊗		Other:		

Outfall Structure				
Material:		Size:	End Type:	
SCORE	PHOTO	DESCRIPTION		COMMENTS / DIMENSIONS
①②③☉⊗		Blockage	(③ < 25% < ② < 75% < ①)	
①②③☉⊗		Trash / Debris / Sediment		
①②③☉⊗		Erosion / Undermining	Area:	
①②③☉⊗		Spalling / Deterioration		
①②③☉⊗		Separation / Misalignment		
①②③☉⊗		Overgrown Vegetation / Tree Removal		
①②③☉⊗		Manhole Condition		
①②③☉⊗		Ladder / Steps Condition		
①②③☉⊗		Downstream Channel Condition		
①②③☉⊗		Other:		

Other			
SCORE	PHOTO	DESCRIPTION	LOCATION
①②③☉⊗		Encroachments	
①②③☉⊗		Modifications	
①②③☉⊗		Mosquito Habitat	
①②③☉⊗		Evidence of Possible Illicit Discharge (Email to report: stormwaterpollution@fairfaxcounty.gov)	

INSPECTOR COMMENTS

A-3: Cistern/Rain Barrel Inspection Form

Cistern / Rain Barrel Inspection Form

Fairfax County Maintenance and Stormwater Management Division

Inspector: Cert ⊙
Inspector: Cert ⊙
Date:

Site ID: Facility ID: Facility Name:
Address: Coordinates / ParID :
Watershed: District:
Functional? Yes No
Score Totals: 1 2 3

Scoring Key
① High Priority / Non-functional
② Moderate Priority / Approaching Non-functional
③ Low Priority / Functional
⊙ No Priority / Continue Routine Maintenance
⊗ Not Applicable

Notes / Specifications:
Facility Specific Info:
Facility Type / Addl Facility Info:

Signs

SCORE	PHOTO	DESCRIPTION
③⊙⊗		Facility Sign
③⊙⊗		Facility Labeling

Weather Conditions

Last Rainfall	Date:	Amount:
	Data Source:	
Current weather conditions?		

Accessibility

Access Comments:
New Access Comments for EAM:

ACCESS PROBLEMS (Circle)	NEXT STEP (Circle One)
Locked Gate / Fence	Coordinate with Owner
Heavy Vegetation	Return for Re-inspection
Stuck / Broken Cover	Request Photos from Owner
Equipment Needed: _____	Contact MSMD
Other:_____	Other:_____

SCORE	PHOTO	DESCRIPTION
① ⊙⊗		Overall Facility Access
①②③⊙⊗		Component Access: _____

Downspouts

SCORE	PHOTO	DESCRIPTION	1	2	3	4	5	6
① ⊙⊗		Disconnected						
①②③⊙⊗		Damaged / Leaking						
①②③⊙⊗		Blockage (③ < 25% < ② < 75% < ①)						
①②③⊙⊗		Other: Description:						

Rainwater Harvesting System

Type: Cistern / Rain Barrel / Other:_____ Size: Location:

SCORE	PHOTO	DESCRIPTION	COMMENTS / DIMENSIONS
①②③⊙⊗		Trees over Roof Surface	
①②③⊙⊗		Debris / Sediment in Gutter	
		Pre-Treatment Device Type:	
① ⊙⊗		Missing / Non-Functional	
①②③⊙⊗		Damage / Deterioration	
①②③⊙⊗		Trash / Debris / Sediment Description / Amount:	
①②③⊙⊗		Other: Description:	
		Storage Tank	
①②③⊙⊗		Damage / Deterioration	
①②③⊙⊗		Trash / Debris / Sediment Description / Amount:	
①②③⊙⊗		Other: Description:	
		Overflow / Bypass	
① ⊙⊗		Missing / Non-Functional	
①②③⊙⊗		Blockage (③ < 25% < ② < 75% < ①)	
①②③⊙⊗		Damage / Deterioration	
①②③⊙⊗		Other: Description:	
		Discharge / Water Use	
① ⊙⊗		Missing / Non-Functional	
①②③⊙⊗		Damage / Deterioration	
①②③⊙⊗		Erosion Area:	
①②③⊙⊗		Other: Description:	

Other

SCORE	PHOTO	DESCRIPTION	LOCATION
①②③⊙⊗		Encroachments	
①②③⊙⊗		Modifications	
①②③⊙⊗		Mosquito Habitat	
①②③⊙⊗		Evidence of Possible Illicit Discharge	
		(Email to report: stormwaterpollution@fairfaxcounty.gov)	

INSPECTOR COMMENTS

A-4: Pond/Wetland Inspection Form

Pond / Wetland Inspection Form

Fairfax County Maintenance and Stormwater Management Division

Inspector: Cert ⊙
Inspector: Cert ⊙
Date:

Site ID: Facility ID: Facility Name:
Address: Coordinates / ParID :
Watershed: District:

Functional? Yes No
Score Totals: 1 2 3

Scoring Key
① High Priority / Non-functional
② Moderate Priority / Approaching Non-functional
③ Low Priority / Functional
⊙ No Priority / Continue Routine Maintenance
⊗ Not Applicable

Notes / Specifications: Facility Specific Info:

Facility Type / Addl Facility Info:

Signs			Weather Conditions		
SCORE	PHOTO	DESCRIPTION	Last Rainfall	Date:	Amount:
③⊙⊗		Facility Sign		Data Source:	
③⊙⊗		Facility Labeling	Current weather conditions?		

Accessibility

Access Comments:	ACCESS PROBLEMS (Circle)	NEXT STEP (Circle One)
New Access Comments for EAM:	Locked Gate / Fence	Coordinate with Owner
	Heavy Vegetation	Return for Re-inspection
SCORE PHOTO DESCRIPTION	Stuck / Broken Cover	Request Photos from Owner
①⊙⊗ Overall Facility Access	Equipment Needed: _____	Contact MSMD
①②③⊙⊗ Component Access: _____	Other:_____	Other:_____

Control Structure

Function: Orifice Size: Type (Circle): Riser Structure / Pipe End / Weir / Other:_____

SCORE	PHOTO	DESCRIPTION	COMMENTS / DIMENSIONS
①②③⊙⊗		Damage / Deterioration Description:	
①②③⊙⊗		Vegetation / External Obstructions	
①②③⊙⊗		Other: Description:	
		Low-Flow Orifice and Trash Rack	
①⊙⊗		Orifice Plate Missing / Non-Functional	
①⊙⊗		Trash Rack Missing / Non-Functional	
①②③⊙⊗		Blockage* (③ < 25% < ② < 75% < ①)	
①②③⊙⊗		Damage / Deterioration Description:	
		Top Trash Rack and Anti-Vortex Plate	
①⊙⊗		Pad Lock Missing	
①②③⊙⊗		Blockage* (③ < 25% < ② < 75% < ①)	
①②③⊙⊗		Damage / Deterioration Description:	
		Riser Interior	
①②③⊙⊗		Trash / Debris / Sediment Description / Amount:	
①②③⊙⊗		Ladder / Steps Condition	
①②③⊙⊗		Manhole Condition	
		Principal Spillway Pipe, Upstream End	
①②③⊙⊗		Blockage* (③ < 25% < ② < 75% < ①)	
①②③⊙⊗		Spalling / Deterioration	
①②③⊙⊗		Separation / Misaligned Joints*	

Dam / Berm and Emergency Spillway

Sep Auxillary Spillway:

SCORE	PHOTO	DESCRIPTION	FACE SLOPE Score	FACE SLOPE Comments	TOP OF DAM Score	TOP OF DAM Comments	BACK SLOPE Score	BACK SLOPE Comments	EMERG. SPILLWAY Material: Score	EMERG. SPILLWAY Comments
①②③⊙⊗		Toe Soft Spots*								
①②③⊙⊗		Cave-In*								
①②③⊙⊗		Slope Erosion* Area:								
①②③⊙⊗		Bare Spots Area:								
①②③⊙⊗		Holes* Location / Size:								
①②③⊙⊗		Tree Removal Num/Size:								
①②③⊙⊗		Woody Vegetation								
①②③⊙⊗		Overgrown Non-woody Veg.								
①②③⊙⊗		Trash / Debris / Sediment								
①②③⊙⊗		Alterations: Description:								
①②③⊙⊗		Other: Description:								
①②③⊙⊗		Blockage at Emergency Spillway (③ < 25% < ② < 75% < ①)								
①②③⊙⊗		Damage / Deterioration at Emergency Spillway* Description:								

Outfall Structure / PSP Downstream End

Material: Size: End Type: Pipe Total:

SCORE	PHOTO	DESCRIPTION	COMMENTS / DIMENSIONS
①②③⊙⊗		Blockage* (③ < 25% < ② < 75% < ①)	
①②③⊙⊗		Trash / Debris / Sediment Description / Amount:	
①②③⊙⊗		Erosion / Undermining* Area:	
①②③⊙⊗		Spalling / Deterioration	
①②③⊙⊗		Separation / Misalignment*	
①②③⊙⊗		Overgrown Vegetation / Tree Removal	
①②③⊙⊗		Handrail Status	
①②③⊙⊗		Manhole Condition	
①②③⊙⊗		Ladder / Steps Condition	
①②③⊙⊗		Downstream Channel Condition	
①②③⊙⊗		Other:	

Pond / Wetland Inspection Form Page 2

Site ID: _____ Facility ID: _____ Facility Name: _____

Pond Floor / Pool									
SCORE	PHOTO	DESCRIPTION	COMMENTS / DIMENSIONS						
① ⊙ ⊗		Water Level Inconsistent with Plans							
①②③⊙⊗		Trash / Debris / Sediment *Description / Amount:*							
①②③⊙⊗		Overgrown Vegetation							
①②③⊙⊗		Tree Removal *Number / Size:*							
①②③⊙⊗		Erosion / Bare Spots *Area:*							
①②③⊙⊗		Other: *Description:*							
		Trickle Ditch / Low Flow Channel — Shown on Plans: Yes / No — Ditch Material: — Ditch Total:							
① ⊙ ⊗		Not Found / Completely Covered							
①②③⊙⊗		Trash / Debris / Sediment *Description / Amount:*							
①②③⊙⊗		Blockage *(③ < 25% < ② < 75% < ①)*							
①②③⊙⊗		Erosion / Trenching / Roots *Description:*							
①②③⊙⊗		Detoured Flow Line *Description:*							
①②③⊙⊗		Damage / Deterioration *Description:*							
①②③⊙⊗		Other: *Description:*							
		Sediment Forebay and Micropools	1	2	3	4	5	6	
		Type of Pond Cell (Forebay, Micropool, Wetland Cell, etc.)							
① ⊙ ⊗		Inconsistent with Plans							
①②③⊙⊗		Erosion / Bare Spots *Area:*							
①②③⊙⊗		Trash / Debris / Sediment *Description / Amount:*							
①②③⊙⊗		Overgrown Vegetation							
①②③⊙⊗		Tree Removal *Number / Size:*							
①②③⊙⊗		Displaced Rip Rap							
①②③⊙⊗		Weir Condition *Type:*							
①②③⊙⊗		Other: *Description:*							
		Wetland Habitat — Signs Posted: Yes / No — Plants in Inventory:							
		Type of Wetland (Emergent/Forested)							
①②③⊙⊗		Unhealthy / Damaged							
①②③⊙⊗		Overgrown Vegetation / Tree Removal							
①②③⊙⊗		Submergent Vegetation — Observed: — Specified:							
①②③⊙⊗		Emergent Vegetation — Observed: — Specified:							
①②③⊙⊗		Undesired Vegetation* *(Cattails / Phragmites / Trapa, estimate % of pond cover)*							
① ⊙ ⊗		Inconsistent with Plans							
①②③⊙⊗		Posted Sign Condition							
①②③⊙⊗		Other: *Description:*							

Upstream Inflow(s)												
SCORE	PHOTO	DESCRIPTION	1	2	3	4	5	6	7	8	9	10	11	12
		End Type / Overland:												
		Pipe Material:												
		Pipe Size:												
①②③⊙⊗		Blockage *(③ < 25% < ② < 75% < ①)*												
①②③⊙⊗		Trash / Debris / Sediment *Description / Amount:*												
①②③⊙⊗		Erosion / Undermining *Area:*												
①②③⊙⊗		Spalling / Deterioration												
①②③⊙⊗		Separation / Misalignment												
①②③⊙⊗		Overgrown Vegetation / Tree Removal												
①②③⊙⊗		Handrail Status												
①②③⊙⊗		Downstream Channel Condition												
①②③⊙⊗		Other:												

Other			
SCORE	PHOTO	DESCRIPTION	LOCATION
①②③⊙⊗		Encroachments	
①②③⊙⊗		Modifications	
①②③⊙⊗		Mosquito Habitat	
①②③⊙⊗		Evidence of Possible Illicit Discharge *(Email to report: stormwaterpollution@fairfaxcounty.gov)*	

INSPECTOR COMMENTS

Asterisked items for publicly maintained facility may require early review as critical infrastructure problems. If any of these components are noted at condition "1" (or in combination/sequence represent a need for immediate attention) early county notification is requested.

A-5: Green Roof Inspection Form

Green Roof Inspection Form

Fairfax County Maintenance and Stormwater Management Division

Inspector: Cert ⊙
Inspector: Cert ⊙
Date:

Site ID: Facility ID: Facility Name:
Coordinates / ParID :
Address: Watershed: District:

Functional? Yes No
Score Totals: 1 2 3

Scoring Key

①	High Priority / Non-functional
②	Moderate Priority / Approaching Non-functional
③	Low Priority / Functional
⊙	No Priority / Continue Routine Maintenance
⊗	Not Applicable

Notes / Specifications: Facility Specific Info:

Facility Type / Addl Facility Info:

Signs			Weather Conditions		
SCORE	PHOTO	DESCRIPTION	Last Rainfall	Date:	Amount:
③⊙⊗		Facility Sign		Data Source:	
③⊙⊗		Facility Labeling	Current weather conditions?		

Accessibility				
Access Comments:			ACCESS PROBLEMS (Circle)	NEXT STEP (Circle One)
New Access Comments for EAM:			Locked Access Door	Coordinate with Owner
			Broken / Unsafe Ladder	Return for Re-inspection
SCORE	PHOTO	DESCRIPTION	Too Tall for Standard Ladder	Request Photos from Owner
① ⊙⊗		Overall Facility Access	Equipment Needed: _____	Contact MSMD
①②③⊙⊗		Component Access: _____	Other: _____	Roofing Contractor/Bucket Truck

Roof Surface				
SCORE	PHOTO	DESCRIPTION	COMMENTS / DIMENSIONS	
① ⊙⊗		Change in Roof Design	Observed:	Specified:
①②③⊙⊗		Visible Damage to Surface		
①②③⊙⊗		Erosion / Bare Spots *Area:*		
①②③⊙⊗		Trash / Debris / Sediment *Description / Amount:*		
①②③⊙⊗		Ponding Water (after dry weather) *Area:*		
①②③⊙⊗		Access Path	Observed:	Specified:
①②③⊙⊗		Aluminum Curbing	Observed:	Specified:
①②③⊙⊗		Other: *Description:*		
Plant Material			Plants in Inventory:	
①②③⊙⊗		Trees Missing *(20% < ③ < 40% < ② < 60% < ①)*	Observed: Specified:	Total % of Plant Material Coverage:
①②③⊙⊗		Shrubs Missing *(see above)*	Observed: Specified:	
①②③⊙⊗		Groundcover Plants Missing *(see above)*	Observed: Specified:	
①②③⊙⊗		Unhealthy / Damaged		
①②③⊙⊗		Overgrown / Invasive Vegetation		
①②③⊙⊗		Other: *Description:*		
		For Multi-Level Rooftop Detention Systems, Describe Stormwater Flow:	Notes:	

Roof Drains														
SCORE	PHOTO	DESCRIPTION	1	2	3	4	5	6	7	8	9	10	11	12
① ⊙⊗		Debris Cage Missing												
①②③⊙⊗		Blockage *(③ < 25% < ② < 75% < ①)*												
①②③⊙⊗		Damage / Deterioration												
①②③⊙⊗		Vegetation / External Obstructions												
①②③⊙⊗		Other: *Description:*												

Scupper Ports / Emergency Overflow														
SCORE	PHOTO	DESCRIPTION	1	2	3	4	5	6	7	8	9	10	11	12
①②③⊙⊗		Blockage *(③ < 25% < ② < 75% < ①)*												
①②③⊙⊗		Damage / Deterioration												
①②③⊙⊗		Vegetation / External Obstructions												
①②③⊙⊗		Other: *Description:*												
① ⊙⊗		Insufficient Emergency Overflow	Observed:						Specified:					

Other			
SCORE	PHOTO	DESCRIPTION	LOCATION
①②③⊙⊗		Encroachments	
①②③⊙⊗		Modifications	
①②③⊙⊗		Mosquito Habitat	
①②③⊙⊗		Evidence of Possible Illicit Discharge *(Email to report: stormwaterpollution@fairfaxcounty.gov)*	

INSPECTOR COMMENTS

A-6: Manufactured BMP Inspection Form

Manufactured BMP Inspection Form

Fairfax County Maintenance and Stormwater Management Division

Inspector: Cert ⊙
Inspector: Cert ⊙
Date:

Site ID: Facility ID: Facility Name:
Coordinates / ParID :
Address: Watershed: District:

Functional? Yes No

Score Totals: 1 2 3

Scoring Key	
①	High Priority / Non-functional
②	Moderate Priority / Approaching Non-functional
③	Low Priority / Functional
⊙	No Priority / Continue Routine Maintenance
⊗	Not Applicable

Notes / Specifications: Facility Specific Info:

Facility Type / Addl Facility Info:

Signs			Weather Conditions		
SCORE	PHOTO	DESCRIPTION	Last Rainfall	Date:	Amount:
③⊙⊗		Facility Sign		Data Source:	
③⊙⊗		Facility Labeling	Current weather conditions?		

Accessibility

Access Comments:	ACCESS PROBLEMS (Circle)	NEXT STEP (Circle One)
New Access Comments for EAM:	Locked Gate / Fence	Coordinate with Owner
	Parked Cars	Return for Re-inspection
	Stuck / Broken Cover	Request Photos from Owner
	Equipment Needed: _____	Contact MSMD
	Other: _____	Other: _____

SCORE	PHOTO	DESCRIPTION
⊙⊗		Overall Facility Access
①②③⊙⊗		Component Access: _____

Maintenance Records

YES / NO	PHOTO	DESCRIPTION	COMMENTS
YES / NO		Inspection / Maintenance Conducted Recently	
YES / NO		Maintenance Records Available On-Site	

Manufacturer-Specific Items

Look for these items as you inspect each chamber of the Manufactured BMP facility.

SCORE	PHOTO	DESCRIPTION	COMMENTS / DIMENSIONS
		Cartridge-Type Filters	*including BayFilter, Jellyfish, and StormFilter*
①⊙⊗		Number of Cartridges Inconsistent with Plans	# Observed: / # Specified:
①②③⊙⊗		Cartridge Condition *Description:*	
①②③⊙⊗		Bypass Weir or StormGate	*(Inspect the StormGate structure as it's own 'Chamber' below.)*
①②③⊙⊗		Flow Spreader / Dissipator	
①②③⊙⊗		Trash Separator Condition	
		Hydrodynamic Separators	*including Barracuda, CDS, Downstream Defender, SciCLONE, Stormceptor, and Vortechs*
①②③⊙⊗		Swirl Chamber / Fiberglass Insert / Cylindrical Baffle	
①②③⊙⊗		Orifice Plate(s)	
①②③⊙⊗		Weir(s)	
①②③⊙⊗		Inspection Port	
①②③⊙⊗		Safety Grate	
		Oil/Grit Separators	*including classic non-proprietary oil/grit separators and Baysaver / BaySeparator units*
①②③⊙⊗		CMP Elbow Condition	
①②③⊙⊗		Trash Rack Condition	
①②③⊙⊗		Tee Pipes	
①②③⊙⊗		Bypass Plate	

Inspect Chambers from Upstream to Downstream, Providing Identifying Information for Each

Chamber 1

Chamber Name: Structure #: Sketch Label:

SCORE	PHOTO	DESCRIPTION	COMMENTS / DIMENSIONS
⊙⊗		Inconsistent with Plans	Observed: / Specified:
①②③⊙⊗		Trash / Debris / Sediment *Description / Amount:*	
①②③⊙⊗		Blockage *(Full of water after dry weather, no permanent pool on plans.)*	
①②③⊙⊗		Spalling / Deterioration	
①②③⊙⊗		Connecting Pipes, if any	Pipe Direction: / Problem:
①②③⊙⊗		Manhole / Bilco Door Condition	
①②③⊙⊗		Ladder / Steps Condition	
①②③⊙⊗		Other:	

Chamber 2

Chamber Name: Structure #: Sketch Label:

SCORE	PHOTO	DESCRIPTION	COMMENTS / DIMENSIONS
⊙⊗		Inconsistent with Plans	Observed: / Specified:
①②③⊙⊗		Trash / Debris / Sediment *Description / Amount:*	
①②③⊙⊗		Blockage *(Full of water after dry weather, no permanent pool on plans.)*	
①②③⊙⊗		Spalling / Deterioration	
①②③⊙⊗		Connecting Pipes, if any	Pipe Direction: / Problem:
①②③⊙⊗		Manhole / Bilco Door Condition	
①②③⊙⊗		Ladder / Steps Condition	
①②③⊙⊗		Other:	

Manufactured BMP Inspection Form — Page 2

Site ID: _____ Facility ID: _____ Facility Name: _____

Chamber 3

Chamber Name:	Structure #:	Sketch Label:	

SCORE	PHOTO	DESCRIPTION	COMMENTS / DIMENSIONS	
①	⊙⊗	Inconsistent with Plans	Observed:	Specified:
①②③⊙⊗		Trash / Debris / Sediment	Description / Amount:	
①②③⊙⊗		Blockage	(Full of water after dry weather, no permanent pool on plans.)	
①②③⊙⊗		Spalling / Deterioration		
①②③⊙⊗		Connecting Pipes, if any	Pipe Direction:	Problem:
①②③⊙⊗		Manhole / Bilco Door Condition		
①②③⊙⊗		Ladder / Steps Condition		
①②③⊙⊗		Other:		

Chamber 4

Chamber Name:	Structure #:	Sketch Label:	

SCORE	PHOTO	DESCRIPTION	COMMENTS / DIMENSIONS	
①	⊙⊗	Inconsistent with Plans	Observed:	Specified:
①②③⊙⊗		Trash / Debris / Sediment	Description / Amount:	
①②③⊙⊗		Blockage	(Full of water after dry weather, no permanent pool on plans.)	
①②③⊙⊗		Spalling / Deterioration		
①②③⊙⊗		Connecting Pipes, if any	Pipe Direction:	Problem:
①②③⊙⊗		Manhole / Bilco Door Condition		
①②③⊙⊗		Ladder / Steps Condition		
①②③⊙⊗		Other:		

Chamber 5

Chamber Name:	Structure #:	Sketch Label:	

SCORE	PHOTO	DESCRIPTION	COMMENTS / DIMENSIONS	
①	⊙⊗	Inconsistent with Plans	Observed:	Specified:
①②③⊙⊗		Trash / Debris / Sediment	Description / Amount:	
①②③⊙⊗		Blockage	(Full of water after dry weather, no permanent pool on plans.)	
①②③⊙⊗		Spalling / Deterioration		
①②③⊙⊗		Connecting Pipes, if any	Pipe Direction:	Problem:
①②③⊙⊗		Manhole / Bilco Door Condition		
①②③⊙⊗		Ladder / Steps Condition		
①②③⊙⊗		Other:		

Outfall Structure / Other

Outfall Structure

Material:	Size:	End Type:	Structure # on Plans:

SCORE	PHOTO	DESCRIPTION	COMMENTS / DIMENSIONS
①②③⊙⊗		Blockage	(③ < 25% < ② < 75% < ①)
①②③⊙⊗		Trash / Debris / Sediment	
①②③⊙⊗		Erosion / Undermining	Area:
①②③⊙⊗		Spalling / Deterioration	
①②③⊙⊗		Separation / Misalignment	
①②③⊙⊗		Overgrown Vegetation / Tree Removal	
①②③⊙⊗		Manhole Condition	
①②③⊙⊗		Ladder / Steps Condition	
①②③⊙⊗		Downstream Channel Condition	
①②③⊙⊗		Other:	

Other

SCORE	PHOTO	DESCRIPTION	LOCATION
①②③⊙⊗		Encroachments	
①②③⊙⊗		Modifications	
①②③⊙⊗		Mosquito Habitat	
①②③⊙⊗		Evidence of Possible Illicit Discharge	
		(Email to report: stormwaterpollution@fairfaxcounty.gov)	

INSPECTOR COMMENTS

A-7: Parking Lot Detention Inspection Form

Parking Lot Detention Inspection Form

Fairfax County Maintenance and Stormwater Management Division

Inspector: Cert ⊙
Inspector: Cert ⊙
Date:

Site ID: Facility ID: Facility Name:
Address: Coordinates / ParID :
Watershed: District:

Functional? Yes No

Score Totals: 1 2 3

Scoring Key
① High Priority / Non-functional
② Moderate Priority / Approaching Non-functional
③ Low Priority / Functional
⊙ No Priority / Continue Routine Maintenance
⊗ Not Applicable

Notes / Specifications:
Facility Specific Info:

Facility Type / Addl Facility Info:

Signs		
SCORE	PHOTO	DESCRIPTION
③⊙⊗		Facility Sign
③⊙⊗		Facility Labeling

Weather Conditions		
Last Rainfall	Date:	Amount:
	Data Source:	
Current weather conditions?		

Accessibility

Access Comments:
New Access Comments for EAM:

ACCESS PROBLEMS (Circle)	NEXT STEP (Circle One)
Locked Gate / Fence	Coordinate with Owner
Parked Cars	Return for Re-inspection
Stuck / Broken Cover	Request Photos from Owner
Equipment Needed: _____	Contact MSMD
Other: _____	Other: _____

SCORE	PHOTO	DESCRIPTION
① ⊙⊗		Overall Facility Access
①②③⊙⊗		Component Access: _____

Control Structure

Orifice Size: Emergency Overflow Provided? Yes / No

SCORE	PHOTO	DESCRIPTION	COMMENTS / DIMENSIONS
①②③⊙⊗		Blockage (③ < 25% < ② < 75% < ①)	
①②③⊙⊗		Damaged	
①②③⊙⊗		Spalling / Deterioration	
①②③⊙⊗		Overgrown Vegetation / External Obstruction	
①②③⊙⊗		Other:	
		Restrictor Plate / Trash Rack	
① ⊙⊗		Restrictor Plate Missing	Observed: Specified:
① ⊙⊗		Trash Rack Missing	Observed: Specified:
①②③⊙⊗		Damage / Deterioration	
①②③⊙⊗		Other:	
		Structure Interior	
①②③⊙⊗		Trash / Debris / Sediment (interior)	Description / Amount:
①②③⊙⊗		Manhole Condition	
①②③⊙⊗		Ladder / Steps Condition	
		Outlet Pipe	
①②③⊙⊗		Blockage (③ < 25% < ② < 75% < ①)	
①②③⊙⊗		Spalling / Deterioration	
①②③⊙⊗		Separation / Misalignment	
①②③⊙⊗		Other: Description:	

Parking Lot Surface

SCORE	PHOTO	DESCRIPTION	COMMENTS / DIMENSIONS
①②③⊙⊗		Ponding Water (after dry weather)	
①②③⊙⊗		Trash / Debris / Sediment Description / Amount:	
①②③⊙⊗		Asphalt / Concrete Condition	
①②③⊙⊗		Other: Description:	

Outfall Structure

Material: Size: End Type:

SCORE	PHOTO	DESCRIPTION	COMMENTS / DIMENSIONS
①②③⊙⊗		Blockage (③ < 25% < ② < 75% < ①)	
①②③⊙⊗		Trash / Debris / Sediment	
①②③⊙⊗		Erosion / Undermining Area:	
①②③⊙⊗		Spalling / Deterioration	
①②③⊙⊗		Separation / Misalignment	
①②③⊙⊗		Overgrown Vegetation / Tree Removal	
①②③⊙⊗		Manhole Condition	
①②③⊙⊗		Ladder / Steps Condition	
①②③⊙⊗		Downstream Channel Condition	
①②③⊙⊗		Other:	

Other

SCORE	PHOTO	DESCRIPTION	LOCATION
①②③⊙⊗		Encroachments	
①②③⊙⊗		Modifications	
①②③⊙⊗		Mosquito Habitat	
①②③⊙⊗		Evidence of Possible Illicit Discharge (Email to report: stormwaterpollution@fairfaxcounty.gov)	

INSPECTOR COMMENTS

A-8: Permeable Pavement Inspection Form

Permeable Pavement Inspection Form

Inspector: ____ Cert ⊙

Pervious Pavement, Porous Pavers, and Synthetic Turf

Inspector: ____ Cert ⊙

Fairfax County Maintenance and Stormwater Management Division

Date: ____

Site ID: ____ Facility ID: ____ Facility Name: ____

Address: ____ Coordinates / ParID : ____

Watershed: ____ District: ____

Functional? ☐ Yes ☐ No

Score Totals: ____ (1) ____ (2) ____ (3)

Scoring Key

①	High Priority / Non-functional
②	Moderate Priority / Approaching Non-functional
③	Low Priority / Functional
⊙	No Priority / Continue Routine Maintenance
⊗	Not Applicable

Notes / Specifications:

Facility Specific Info:

Facility Type / Addl Facility Info:

Signs			Weather Conditions		
SCORE	PHOTO	DESCRIPTION	Last Rainfall	Date:	Amount:
③⊙⊗		Facility Sign		Data Source:	
③⊙⊗		Facility Labeling	Current weather conditions?		

Accessibility				
Access Comments:			ACCESS PROBLEMS (Circle)	NEXT STEP (Circle One)
New Access Comments for EAM:			Locked Gate / Fence	Coordinate with Owner
			Stuck / Broken Cover	Return for Re-inspection
SCORE	PHOTO	DESCRIPTION	Equipment Needed: ____	Request Photos from Owner
①⊙⊗		Overall Facility Access	Other:____	Contact MSMD
①②③⊙⊗		Component Access: ____		Other:____

Parking Lot			
SCORE	PHOTO	DESCRIPTION	COMMENTS / DIMENSIONS
①②③⊙⊗		Trash / Debris / Sediment *Description / Amount:*	
①②③⊙⊗		Asphalt / Concrete Condition	
①②③⊙⊗		Other: *Description:*	

Permeable Pavement Surface						
	Type (Paver/Concrete/Asphalt):		Infiltration:		Underdrain:	
SCORE	PHOTO	DESCRIPTION	COMMENTS / DIMENSIONS			
①⊙⊗		Ponding Water (after dry weather)				
①②③⊙⊗		Trash / Debris / Sediment *Description / Amount:*				
①②③⊙⊗		Vegetation				
①②③⊙⊗		Pavement Functionality (Infiltration)	*Test infiltration of system with 5-gallon bucket of water.*			
①②③⊙⊗		Surface Damage (Cracking / Settlement)				
①②③⊙⊗		Broken or Missing Pavers				
①②③⊙⊗		Tree Dripline Over Pavement				
①②③⊙⊗		Evidence of Sand/Salt Application				
①②③⊙⊗		Other:				

Synthetic Turf Surface			
SCORE	PHOTO	DESCRIPTION	COMMENTS / DIMENSIONS
①⊙⊗		Ponding Water (after dry weather)	
①②③⊙⊗		Trash / Debris / Sediment *Description / Amount:*	
①②③⊙⊗		Surface Damage	
①②③⊙⊗		Condition of Synthetic Turf	
①②③⊙⊗		Other: *Description:*	

Observation Well / Cleanout(s)													
SCORE	PHOTO	DESCRIPTION	1	2	3	4	5	6	7	8	9	10	11	12
①⊙⊗		Missing												
①⊙⊗		Cap Missing / Stuck												
①⊙⊗		Water / Sediment Observed in Well												
①②③⊙⊗		Blockage (③ < 25% < ② < 75% < ①)												
①②③⊙⊗		Damaged												
①②③⊙⊗		Other: *Description:*												

Emergency Overflow / Outfall Structure				
			Emergency Overflow Provided?	Yes / No
SCORE	PHOTO	DESCRIPTION	COMMENTS / DIMENSIONS	
①②③⊙⊗		Blockage (③ < 25% < ② < 75% < ①)		
①②③⊙⊗		Trash / Debris / Sediment *Description / Amount:*		
①②③⊙⊗		Damage / Deterioration		
①②③⊙⊗		Overgrown Vegetation / External Obstruction		
①②③⊙⊗		Manhole Condition		
①②③⊙⊗		Ladder / Steps Condition		
①②③⊙⊗		Downstream Pipe Condition		
①②③⊙⊗		Other: *Description:*		
	Underdrain Pipe		Required by Plans?	Yes / No
①⊙⊗		Missing / Not Found		
①⊙⊗		Flow-Reduction Orifice Missing (if required)		
①②③⊙⊗		Blockage (③ < 25% < ② < 75% < ①)		
①②③⊙⊗		Damage / Deterioration		
①②③⊙⊗		Other: *Description:*		

Permeable Pavement Inspection Form Page 2

Site ID: _____ Facility ID: _____ Facility Name: _____

Other			
SCORE	PHOTO	DESCRIPTION	LOCATION
①②③☉⊗		Encroachments	
①②③☉⊗		Modifications	
①②③☉⊗		Mosquito Habitat	
①②③☉⊗		Evidence of Possible Illicit Discharge *(Email to report: stormwaterpollution@fairfaxcounty.gov)*	

INSPECTOR COMMENTS

A-9: Rooftop Disconnection Inspection Form

Rooftop Disconnection Inspection Form

Fairfax County Maintenance and Stormwater Management Division

Inspector: Cert ⊙
Inspector: Cert ⊙
Date:

Site ID: Facility ID: Facility Name:
Address: Coordinates / ParID :
Watershed: District:

Functional? Yes No
Score Totals: 1 2 3

Scoring Key

①	High Priority / Non-functional
②	Moderate Priority / Approaching Non-functional
③	Low Priority / Functional
⊙	No Priority / Continue Routine Maintenance
⊗	Not Applicable

Notes / Specifications: Facility Specific Info:

Facility Type / Addl Facility Info:

Signs

SCORE	PHOTO	DESCRIPTION
③⊙⊗		Facility Sign
③⊙⊗		Facility Labeling

Weather Conditions

Last Rainfall	Date:	Amount:
	Data Source:	
Current weather conditions?		

Accessibility

Access Comments:
New Access Comments for EAM:

ACCESS PROBLEMS (Circle): Locked Gate / Fence; Heavy Vegetation; Other:_____

NEXT STEP (Circle One): Coordinate with Owner; Return for Re-inspection; Request Photos from Owner; Contact MSMD; Other:_____

SCORE	PHOTO	DESCRIPTION
① ⊙⊗		Overall Facility Access
①②③⊙⊗		Component Access: _____

Rooftop Disconnection

SCORE	PHOTO	DESCRIPTION	1	2	3	4	5	6
		Downspouts						
① ⊙⊗		Not Disconnected						
①②③⊙⊗		Trash / Debris / Sediment *Description / Amount:*						
①②③⊙⊗		Blockage *(③ < 25% < ② < 75% < ①)*						
①②③⊙⊗		Damaged *Description:*						
①②③⊙⊗		Outflow Obstruction *Description:*						
①②③⊙⊗		Other: *Description:*						
		Downstream Treatment / Receiving Area *Type:*						
① ⊙⊗		Functioning as Designed						
①②③⊙⊗		Trash / Debris / Sediment *Description / Amount:*						
①②③⊙⊗		Erosion / Bare Spots *Area:*						
①②③⊙⊗		Other: *Description:*						
		Total Number of Downspouts	Observed:			Specified:		
		Total Number of Disconnected Downspouts	Observed:			Specified:		

Other

SCORE	PHOTO	DESCRIPTION	LOCATION
①②③⊙⊗		Encroachments	
①②③⊙⊗		Modifications	
①②③⊙⊗		Mosquito Habitat	
①②③⊙⊗		Evidence of Possible Illicit Discharge	
		(Email to report: stormwaterpollution@fairfaxcounty.gov)	

INSPECTOR COMMENTS

A-10: Reforestation/Floating Treatment Wetland Inspection Form

Reforestation / Floating Treatment Wetland Inspection Form

Fairfax County Maintenance and Stormwater Management Division

Inspector: Cert ⊙
Inspector: Cert ⊙
Date:

Site ID: Facility ID: Facility Name:
Coordinates / ParID :
Address: Watershed: District:

Functional? Yes No
Score Totals: 1 2 3

Scoring Key

①	High Priority / Non-functional
②	Moderate Priority / Approaching Non-functional
③	Low Priority / Functional
⊙	No Priority / Continue Routine Maintenance
⊗	Not Applicable

Notes / Specifications: Facility Specific Info:

Facility Type / Addl Facility Info:

Signs

SCORE	PHOTO	DESCRIPTION
③⊙⊗		Facility Sign
③⊙⊗		Facility Labeling

Weather Conditions

Last Rainfall Date: Amount:
Data Source:
Current weather conditions?

Accessibility

Access Comments:
New Access Comments for EAM:

ACCESS PROBLEMS (Circle)	NEXT STEP (Circle One)
Locked Gate / Fence	Coordinate with Owner
Other:_____	Return for Re-inspection
	Request Photos from Owner
	Contact MSMD
	Other:_____

SCORE	PHOTO	DESCRIPTION
① ⊙⊗		Overall Facility Access
①②③⊙⊗		Component Access: _____

Reforestation / Floating Treatment Wetland Area

SCORE	PHOTO	DESCRIPTION	COMMENTS / DIMENSIONS		
① ⊙⊗		Reforestation	Observed:	Specified:	
① ⊙⊗		Floating Treatment Wetland Placement	*Scoring should be based on the location of the raft per approved plan*		
①②③⊙⊗		Trash / Debris / Sediment *Description / Amount:*			
①②③⊙⊗		Erosion / Bare Spots *Area:*			
		Plant Material	Plants in Inventory:		
①②③⊙⊗		Trees Missing *(20% < ③< 40% < ②< 60% < ①)*	Observed:	Specified:	Total % of Plant Material Coverage:
①②③⊙⊗		Shrubs Missing *(see above)*	Observed:	Specified:	
①②③⊙⊗		Groundcover Plants Missing	Observed:	Specified:	
		FTW: See plans. RF: No mowing. Reforestation areas should convert naturally to forest.			
①②③⊙⊗		Unhealthy / Damaged			
①②③⊙⊗		Unauthorized Planting			
①②③⊙⊗		Overgrown / Invasive Vegetation			
		FTW: Large trees can damage floating wetland islands. RF: Identify invasives. Reforestation areas convert naturally to forest.			
①②③⊙⊗		Other: *Description:*			

Other

SCORE	PHOTO	DESCRIPTION	LOCATION
①②③⊙⊗		Encroachments	
①②③⊙⊗		Modifications	
①②③⊙⊗		Mosquito Habitat	
①②③⊙⊗		Evidence of Possible Illicit Discharge	
		(Email to report: stormwaterpollution@fairfaxcounty.gov)	

INSPECTOR COMMENTS

A-11: Rooftop Detention Inspection Form

Rooftop Detention Inspection Form

Fairfax County Maintenance and Stormwater Management Division

Inspector: Cert ⊙
Inspector: Cert ⊙
Date:

Site ID: Facility ID: Facility Name:
Address: Coordinates / ParID :
Watershed: District:

Functional? Yes No
Score Totals: 1 2 3

Scoring Key

①	High Priority / Non-functional
②	Moderate Priority / Approaching Non-functional
③	Low Priority / Functional
⊙	No Priority / Continue Routine Maintenance
⊗	Not Applicable

Notes / Specifications: Facility Specific Info:

Facility Type / Addl Facility Info:

Signs

SCORE	PHOTO	DESCRIPTION
③⊙⊗		Facility Sign
③⊙⊗		Facility Labeling

Weather Conditions

Last Rainfall Date: Amount:
Data Source:
Current weather conditions?

Accessibility

Access Comments:
New Access Comments for EAM:

SCORE	PHOTO	DESCRIPTION
① ⊙⊗		Overall Facility Access
①②③⊙⊗		Component Access: _____

ACCESS PROBLEMS (Circle)	NEXT STEP (Circle One)
Locked Access Door	Coordinate with Owner
Broken / Unsafe Ladder	Return for Re-inspection
Too Tall for Standard Ladder	Request Photos from Owner
Equipment Needed: _____	Contact MSMD
Other: _____	Roofing Contractor/Bucket Truck

Roof Surface

SCORE	PHOTO	DESCRIPTION	COMMENTS / DIMENSIONS
① ⊙⊗		Change in Roof Design	Observed: Specified:
①②③⊙⊗		Visible Damage to Surface	
①②③⊙⊗		Trash / Debris / Sediment	*Description / Amount:*
①②③⊙⊗		Ponding Water (after dry weather)	*Area:*
①②③⊙⊗		Other:	*Description:*
		Parapet Wall	
① ⊙⊗		Missing	
①②③⊙⊗		Damaged	*Description:*
①②③⊙⊗		Other:	*Description:*
		For Multi-Level Rooftop Detention Systems, Describe Stormwater Flow:	Notes:

Roof Drains and Detention Devices

SCORE	PHOTO	DESCRIPTION	1	2	3	4	5	6	7	8	9	10	11	12
		Detention Device Type:												
		Opening Size:												
		No. of Openings:												
		Adjustable Device Setting:												
① ⊙⊗		Missing												
①②③⊙⊗		Blockage (◑ < 25% < ◒ < 75% < ●)												
①②③⊙⊗		Damage / Deterioration												
①②③⊙⊗		Unapproved Alteration / Setting												
①②③⊙⊗		Other: *Description:*												
		Debris Cage												
① ⊙⊗		Missing												
①②③⊙⊗		Blockage (◑ < 25% < ◒ < 75% < ●)												
①②③⊙⊗		Damage / Deterioration												
①②③⊙⊗		Other: *Description:*												
		Roof Drain Pipe Pipe Diameter:												
①②③⊙⊗		Blockage (◑ < 25% < ◒ < 75% < ●)												
①②③⊙⊗		Damage / Deterioration												
①②③⊙⊗		Other: *Description:*												

Detention Summary — Number of Roof Drains: Observed: Specified:
Number of Detention Devices: Observed: Specified:
(may be completed in office) Total Area of Openings, < 3" Height: Observed: Specified:
① ⊙⊗ Insufficient Detention

Scupper Ports / Emergency Overflow

SCORE	PHOTO	DESCRIPTION	1	2	3	4	5	6	7	8	9	10	11	12
① ⊙⊗		< 3" Above Roof Surface												
①②③⊙⊗		Blockage (◑ < 25% < ◒ < 75% < ●)												
①②③⊙⊗		Damage / Deterioration												
①②③⊙⊗		Other: *Description:*												
		Detention Devices at Scuppers (When Applicable)												
① ⊙⊗		Missing												
①②③⊙⊗		Blockage (◑ < 25% < ◒ < 75% < ●)												
①②③⊙⊗		Damage / Deterioration												
①②③⊙⊗		Unapproved Alteration												
①②③⊙⊗		Other: *Description:*												

Emergency Overflow Summary — Plans Approved:
Number of Scuppers: Observed: Specified:
① ⊙⊗ Insufficient Emergency Overflow

Rooftop Detention Inspection Form Page 2

Site ID: _____ Facility ID: _____ Facility Name: _____

Other			
SCORE	PHOTO	DESCRIPTION	LOCATION
①②③☉⊗		Encroachments	
①②③☉⊗		Modifications	
①②③☉⊗		Mosquito Habitat	
①②③☉⊗		Evidence of Possible Illicit Discharge *(Email to report: stormwaterpollution@fairfaxcounty.gov)*	

INSPECTOR COMMENTS

A-12: Sand Filter Inspection Form

Sand Filter Inspection Form

Fairfax County Maintenance and Stormwater Management Division

Inspector: Cert ⊙
Inspector: Cert ⊙
Date:

Site ID: Facility ID: Facility Name:
Address: Coordinates / ParID :
Watershed: District:

Functional? Yes No

Score Totals: 1 2 3

Scoring Key
① High Priority / Non-functional
② Moderate Priority / Approaching Non-functional
③ Low Priority / Functional
⊙ No Priority / Continue Routine Maintenance
⊗ Not Applicable

Notes / Specifications: Facility Specific Info:

Facility Type / Addl Facility Info:

Signs

SCORE	PHOTO	DESCRIPTION
③⊙⊗		Facility Sign
③⊙⊗		Facility Labeling

Weather Conditions

Last Rainfall Date: Amount:
Data Source:
Current weather conditions?

Accessibility

Access Comments:
New Access Comments for EAM:

ACCESS PROBLEMS (Circle)	NEXT STEP (Circle One)
Locked Gate / Fence	Coordinate with Owner
Parked Cars	Return for Re-inspection
Stuck / Broken Cover	Request Photos from Owner
Equipment Needed: _____	Contact MSMD
Other: _____	Other: _____

SCORE	PHOTO	DESCRIPTION
① ⊙⊗		Overall Facility Access
①②③⊙⊗		Component Access: _____

Maintenance Records

YES / NO	PHOTO	DESCRIPTION	COMMENTS
YES / NO		Inspection / Maintenance Conducted Recently	
YES / NO		Maintenance Records Available On-Site	

D.C. / Delaware Sand Filter

Sediment Chamber

SCORE	PHOTO	DESCRIPTION	COMMENTS / DIMENSIONS
① ⊙⊗		Water Level Too Low	
①②③⊙⊗		Trash / Debris / Sediment *Description / Amount:*	
①②③⊙⊗		Spalling / Deterioration	
①②③⊙⊗		Manhole / Bilco Door Condition	
①②③⊙⊗		Ladder / Steps Condition	
①②③⊙⊗		Other: *Description:*	
		Bypass Pipe / Overflow Weir	
① ⊙⊗		Missing	
①②③⊙⊗		Blockage *(① < 25% < ② < 75% < ③)*	
①②③⊙⊗		Damage / Deterioration	
		Inflows	
①②③⊙⊗		Spalling / Deterioration	
①②③⊙⊗		Separation / Misalignment	
①②③⊙⊗		Blockage *(① < 25% < ② < 75% < ③)*	
①②③⊙⊗		Other: *Description:*	

Filter Chamber

SCORE	PHOTO	DESCRIPTION	COMMENTS / DIMENSIONS
①②③⊙⊗		Ponding Water (after dry weather) *Area:*	
①②③⊙⊗		Spalling / Deterioration	
①②③⊙⊗		Cleanout(s) Condition	
①②③⊙⊗		Emergency Overflow *Type:*	
①②③⊙⊗		Manhole / Bilco Door Condition	
①②③⊙⊗		Ladder / Steps Condition	
①②③⊙⊗		Other: *Description:*	
		Filter Bed	
①②③⊙⊗		Filter Media Level	
①②③⊙⊗		Erosion of Filter Media / Exposed Filter Fabric	
①②③⊙⊗		Trash / Debris / Sediment *Description / Amount:*	
		Observation Well / Cleanout(s)	
① ⊙⊗		Missing / Not Found	
①②③⊙⊗		Damage / Deterioration	
①②③⊙⊗		Other: *Description:*	

Clearwell

SCORE	PHOTO	DESCRIPTION	COMMENTS / DIMENSIONS
①②③⊙⊗		Trash / Debris / Sediment *Description / Amount:*	
①②③⊙⊗		Spalling / Deterioration	
①②③⊙⊗		Underdrain(s) Condition	
①②③⊙⊗		Emergency Overflow *Type:*	
①②③⊙⊗		Manhole / Bilco Door Condition	
①②③⊙⊗		Ladder / Steps Condition	
①②③⊙⊗		Other:	
		Dewatering Drain Valve	
① ⊙⊗		Missing	
① ⊙⊗		Not Fully Closed	
①②③⊙⊗		Damage / Deterioration	
①②③⊙⊗		Other:	

Sand Filter Inspection Form — Page 2

Site ID: _____ Facility ID: _____ Facility Name: _____

Austin Sand Filter

Control Structure

SCORE	PHOTO	DESCRIPTION	COMMENTS / DIMENSIONS
①②③☉⊗		Damage / Deterioration Description:	
①②③☉⊗		Vegetation / External Obstructions	
①②③☉⊗		Other: Description:	
		Low-Flow Orifice and Trash Rack	Orifice Size:
① ☉⊗		Orifice Plate Missing / Non-Functional	
① ☉⊗		Trash Rack Missing / Non-Functional	
①②③☉⊗		Blockage (③ < 25% < ② < 75% < ①)	
①②③☉⊗		Damage / Deterioration Description:	
		Top Trash Rack and Anti-Vortex Plate	
① ☉⊗		Pad Lock Missing	
①②③☉⊗		Blockage (③ < 25% < ② < 75% < ①)	
①②③☉⊗		Damage / Deterioration Description:	
		Riser Interior	
①②③☉⊗		Trash / Debris / Sediment Description / Amount:	
①②③☉⊗		Ladder / Steps Condition	
		Principal Spillway Pipe, Upstream End	
①②③☉⊗		Blockage (③ < 25% < ② < 75% < ①)	
①②③☉⊗		Spalling / Deterioration	
①②③☉⊗		Separation / Misaligned Joints	

Dam / Berm and Emergency Spillway

Sep Auxillary Spillway:

SCORE	PHOTO	DESCRIPTION	FACE SLOPE Score	FACE SLOPE Comments	TOP OF DAM Score	TOP OF DAM Comments	BACK SLOPE Score	BACK SLOPE Comments	EMERG. SPILLWAY Material: Score	EMERG. SPILLWAY Comments
①②③☉⊗		Toe Soft Spots / Cave-In								
①②③☉⊗		Slope Erosion / Bare Spots								
①②③☉⊗		Animal Holes								
①②③☉⊗		Tree Removal Num/Size:								
①②③☉⊗		Overgrown Vegetation								
①②③☉⊗		Other: Description:								
①②③☉⊗		Blockage at Emergency Spillway (③ < 25% < ② < 75% < ①)								
①②③☉⊗		Damage / Deterioration at Emergency Spillway Description:								

Ponding Area

SCORE	PHOTO	DESCRIPTION	COMMENTS / DIMENSIONS
①②③☉⊗		Erosion / Bare Spots Area:	
①②③☉⊗		Trash / Debris / Sediment Description / Amount:	
①②③☉⊗		Overgrown Vegetation	
①②③☉⊗		Tree Removal Number / Size:	
①②③☉⊗		Gabion Wall Condition	
①②③☉⊗		Other: Description:	

Inflow(s)

SCORE	PHOTO	DESCRIPTION	1	2	3	4	5	6
		End Type / Material / Size:						
①②③☉⊗		Blockage (③ < 25% < ② < 75% < ①)						
①②③☉⊗		Trash / Debris / Sediment Description / Amount:						
①②③☉⊗		Erosion / Undermining Area:						
①②③☉⊗		Spalling / Deterioration						
①②③☉⊗		Separation / Misalignment						
①②③☉⊗		Overgrown Vegetation / Tree Removal						
①②③☉⊗		Other:						

Outfall Structure / Other

Outfall Structure

Material: | Size: | End Type:

SCORE	PHOTO	DESCRIPTION	COMMENTS / DIMENSIONS
①②③☉⊗		Blockage (③ < 25% < ② < 75% < ①)	
①②③☉⊗		Trash / Debris / Sediment	
①②③☉⊗		Erosion / Undermining Area:	
①②③☉⊗		Spalling / Deterioration	
①②③☉⊗		Separation / Misalignment	
①②③☉⊗		Overgrown Vegetation / Tree Removal	
①②③☉⊗		Manhole Condition	
①②③☉⊗		Ladder / Steps Condition	
①②③☉⊗		Downstream Channel Condition	
①②③☉⊗		Other:	

Other

SCORE	PHOTO	DESCRIPTION	LOCATION
①②③☉⊗		Encroachments	
①②③☉⊗		Modifications	
①②③☉⊗		Mosquito Habitat	
①②③☉⊗		Evidence of Possible Illicit Discharge (Email to report: stormwaterpollution@fairfaxcounty.gov)	

INSPECTOR COMMENTS

A-13: Tree Filter Inspection Form

Tree Filter Inspection Form

Fairfax County Maintenance and Stormwater Management Division

Inspector: Cert ⊙
Inspector: Cert ⊙
Date:

Site ID: Facility ID: Facility Name:
Coordinates / ParID :
Address: Watershed: District:

Functional? Yes No

Score Totals: 1 2 3

Scoring Key
① High Priority / Non-functional
② Moderate Priority / Approaching Non-functional
③ Low Priority / Functional
⊙ No Priority / Continue Routine Maintenance
⊗ Not Applicable

Notes / Specifications:

Facility Specific Info:

Facility Type / Addl Facility Info:

Signs			Weather Conditions		
SCORE	PHOTO	DESCRIPTION	Last Rainfall	Date:	Amount:
③⊙⊗		Facility Sign		Data Source:	
③⊙⊗		Facility Labeling	Current weather conditions?		

Accessibility				
Access Comments:			ACCESS PROBLEMS (Circle)	NEXT STEP (Circle One)
New Access Comments for EAM:			Locked Gate / Fence	Coordinate with Owner
			Parked Cars	Return for Re-inspection
SCORE	PHOTO	DESCRIPTION	Stuck / Broken Cover	Request Photos from Owner
①	⊙⊗	Overall Facility Access	Equipment Needed: _____	Contact MSMD
①②③⊙⊗		Component Access: _____	Other:_____	Other:_____

Filter Box / Control Structure			
①	⊙⊗	Surge Stone / Energy Dissipator Missing	
①②③⊙⊗		Blockage at Throat (③ < 25% < ② < 75% < ①)	
①②③⊙⊗		Trash / Debris / Sediment Description / Amount:	
①②③⊙⊗		Damage / Deterioration of the Grate	
①②③⊙⊗		Damage / Deterioration of the Structure	
①②③⊙⊗		Overgrown Vegetation / External Obstruction	
①②③⊙⊗		Other:	
Plant Material			Plants in Inventory:
①	⊙⊗	Missing / Dead	Observed: Specified:
①②③⊙⊗		Unhealthy / Damaged	
①②③⊙⊗		Overgrown / Invasive Vegetation	
①②③⊙⊗		Other: Description:	
Mulch			
①	⊙⊗	Missing	
①②③⊙⊗		Not at Design Thickness	
①②③⊙⊗		Other: Description:	
Observation Well / Cleanout(s)			
①	⊙⊗	Missing / Not Found	
①②③⊙⊗		Damage / Deterioration	
①②③⊙⊗		Other: Description:	

Emergency Overflow / Outfall Structure				
			Emergency Overflow Provided?	Yes / No
SCORE	PHOTO	DESCRIPTION	COMMENTS / DIMENSIONS	
①②③⊙⊗		Blockage (③ < 25% < ② < 75% < ①)		
①②③⊙⊗		Trash / Debris / Sediment Description / Amount:		
①②③⊙⊗		Damage / Deterioration		
①②③⊙⊗		Overgrown Vegetation / External Obstruction		
①②③⊙⊗		Manhole Condition		
①②③⊙⊗		Ladder / Steps Condition		
①②③⊙⊗		Downstream Pipe Condition		
①②③⊙⊗		Other: Description:		
Underdrain Pipe				
①	⊙⊗	Missing / Not Found		
①②③⊙⊗		Blockage (③ < 25% < ② < 75% < ①)		
①②③⊙⊗		Damage / Deterioration		
①②③⊙⊗		Other: Description:		

Other			
SCORE	PHOTO	DESCRIPTION	LOCATION
①②③⊙⊗		Encroachments	
①②③⊙⊗		Modifications	
①②③⊙⊗		Mosquito Habitat	
①②③⊙⊗		Evidence of Possible Illicit Discharge	
		(Email to report: stormwaterpollution@fairfaxcounty.gov)	

INSPECTOR COMMENTS

A-14: Infiltration Trench Inspection Form

Infiltration Trench Inspection Form

Fairfax County Maintenance and Stormwater Management Division

Inspector: Cert ⊙
Inspector: Cert ⊙
Date:

Site ID: Facility ID: 2055TR Facility Name:
Coordinates / ParID :
Address: Watershed: District:

Functional? Yes No

Score Totals: 1 2 3

Scoring Key
① High Priority / Non-functional
② Moderate Priority / Approaching Non-functional
③ Low Priority / Functional
⊙ No Priority / Continue Routine Maintenance
⊗ Not Applicable

Notes / Specifications: | Facility Specific Info:

Facility Type / Addl Facility Info:

Signs

SCORE	PHOTO	DESCRIPTION
③⊙⊗		Facility Sign
③⊙⊗		Facility Labeling

Weather Conditions

Last Rainfall — Date: Amount: — Data Source:
Current weather conditions?

Accessibility

Access Comments:
New Access Comments for EAM:

ACCESS PROBLEMS (Circle)	NEXT STEP (Circle One)
Locked Gate / Fence	Coordinate with Owner
Parked Cars	Return for Re-inspection
Stuck / Broken Cover	Request Photos from Owner
Equipment Needed: _____	Contact MSMD
Other:_____	Other:_____

SCORE	PHOTO	DESCRIPTION
①	⊙⊗	Overall Facility Access
①②③⊙⊗		Component Access: _____

Surface Trench Components

Gravel Bed Surface

Surface Cover: Gravel / Grass / Both / Other:_____

SCORE	PHOTO	DESCRIPTION	COMMENTS / DIMENSIONS
①	⊙⊗	Trench Eliminated	
①	⊙⊗	Gravel Not Found Under Turf	Depth to Gravel (if applicable):
①	⊙⊗	Gravel Footprint	Area Observed: / Area Specified:
①②③⊙⊗		Trash / Debris / Sediment	*Description / Amount:*
①②③⊙⊗		Unauthorized Planting	*Description:*
①②③⊙⊗		Bare Spots / Erosion	*Area:*
①②③⊙⊗		Condition of Grass or Gravel	*Overgrown / Inconsistent wth Plans*
①②③⊙⊗		Repair Filter Fabric	
①②③⊙⊗		Other:	*Description:*

Observation Well / Cleanout(s)

SCORE	PHOTO	DESCRIPTION	COMMENTS / DIMENSIONS
①	⊙⊗	Missing / Not Found	Observed: / Specified:
①	⊙⊗	Cap Missing / Stuck	
①②③⊙⊗		Water / Sediment Observed in Well?	
①②③⊙⊗		Damaged	
①②③⊙⊗		Other:	*Description:*

Dam / Berm and Emergency Spillway

Required by Plans? Yes / No

SCORE	PHOTO	DESCRIPTION	COMMENTS / DIMENSIONS
①	⊙⊗	Missing	Observed: / Specified:
①②③⊙⊗		Erosion / Bare Spots	*Area:*
①②③⊙⊗		Cave-In	
①②③⊙⊗		Animal Holes	
①②③⊙⊗		Overgrown Vegetation / Tree Removal	
①②③⊙⊗		Trash / Debris / Sediment	*Description / Amount:*
①②③⊙⊗		Other:	*Description:*

Surface Inflows and Roof Drains

SCORE	PHOTO	DESCRIPTION	1	2	3	4	5	6
		Inflow Type (Sheet Flow, Curb Cut, Roof Downspout, Pipe, etc.):						
		Pipe Material:						
		Pipe Size:						
①	⊙⊗	Roof Drain Downspout Disconnected						
①②③⊙⊗		Blockage *(③ < 25% < ② < 75% < ①)*						
①②③⊙⊗		Spalling / Deterioration						
①②③⊙⊗		Erosion / Undermining						
①②③⊙⊗		Trash / Debris / Sediment Removal						
①②③⊙⊗		Overgrown Vegetation / Tree Removal						
①②③⊙⊗		Other:						
		Inflow Summary						
①	⊙⊗	Curb Cuts Missing / Inconsistent with Plans	Observed:			Specified:		
①	⊙⊗	Inflow Diverted Away From Trench	Observed:			Specified:		
①②③⊙⊗		Other:						

Pre-Treatment / Energy Dissipators

Type(s): Gravel diaphragm / Grass filter strip / Grass channel / Leaf screen / Level spreader / Plunge pool / Sediment trap / Sump pit / Other:_____

SCORE	PHOTO	DESCRIPTION	COMMENTS / DIMENSIONS
①	⊙⊗	Missing / Non-Functional	*Description:*
①	⊙⊗	Inconsistent with Plans *(Area, Vertical Drop, etc.)*	Observed: / Specified:
①②③⊙⊗		Damage / Deterioration	*Description:*
①②③⊙⊗		Trash / Debris / Sediment	*Description / Amount:*
①②③⊙⊗		Other:	

Infiltration Trench Inspection Form Page 2

Site ID: _____ Facility ID: _____ Facility Name: _____

Underground Trench Components

Control Structure

Function:	Orifice Size:	Structure # on Plans:		Label(s) on Sketch:	

SCORE	PHOTO	DESCRIPTION	COMMENTS / DIMENSIONS
①②③☉⊗		**Standing Water** (after dry weather)	
①②③☉⊗		**Trash / Debris / Sediment** *Description / Amount:*	
①②③☉⊗		**Spalling / Deterioration**	
①②③☉⊗		**Manhole / Bilco Door Condition**	
①②③☉⊗		**Ladder / Steps Condition**	
①②③☉⊗		**Other:** *Description:*	
		Low-Flow Orifice and Trash Rack	
① ☉⊗		**Orifice Plate Missing / Non-Functional**	
① ☉⊗		**Trash Rack Missing / Non-Functional**	
①②③☉⊗		**Blockage** *(① < 25% < ② < 75% < ③)*	
①②③☉⊗		**Damage / Deterioration** *Description:*	
		Higher-Flow Orifice / Weir	
① ☉⊗		**Missing / Not Found** Observed:	Specified:
①②③☉⊗		**Blockage** *(① < 25% < ② < 75% < ③)*	
①②③☉⊗		**Other:** *Description:*	
		Outlet Pipe	
①②③☉⊗		**Blockage** *(① < 25% < ② < 75% < ③)*	
①②③☉⊗		**Spalling / Deterioration**	
①②③☉⊗		**Separation / Misalignment**	

Detention Pipe / Vault

SCORE	PHOTO	DESCRIPTION	1	2	3	4	5	6
		Structure # on Plans:						
		Label on Sketch:						
①②③☉⊗		**Standing Water** (after dry weather)						
①②③☉⊗		**Trash / Debris / Sediment** *Description / Amount:*						
①②③☉⊗		**Spalling / Deterioration**						
①②③☉⊗		**Separation / Misalignment**						
①②③☉⊗		**Inflow Pipes, if any** *Pipe Direction / Problem:*						
①②③☉⊗		**Manhole / Bilco Door Condition**						
①②③☉⊗		**Ladder / Steps Condition**						
①②③☉⊗		**Blockage** *(① < 25% < ② < 75% < ③)*						
①②③☉⊗		**Other:** *Description:*						

Outfall Structure / Other

Outfall Structure

Material:		Size:		End Type:	

SCORE	PHOTO	DESCRIPTION	COMMENTS / DIMENSIONS
①②③☉⊗		**Blockage** *(① < 25% < ② < 75% < ③)*	
①②③☉⊗		**Trash / Debris / Sediment**	
①②③☉⊗		**Erosion / Undermining** *Area:*	
①②③☉⊗		**Spalling / Deterioration**	
①②③☉⊗		**Separation / Misalignment**	
①②③☉⊗		**Overgrown Vegetation / Tree Removal**	
①②③☉⊗		**Manhole Condition**	
①②③☉⊗		**Ladder / Steps Condition**	
①②③☉⊗		**Downstream Channel Condition**	
①②③☉⊗		**Other:**	

Other

SCORE	PHOTO	DESCRIPTION	LOCATION
①②③☉⊗		**Encroachments**	
①②③☉⊗		**Modifications**	
①②③☉⊗		**Mosquito Habitat**	
①②③☉⊗		**Evidence of Possible Illicit Discharge** *(Email to report: stormwaterpollution@fairfaxcounty.gov)*	

INSPECTOR COMMENTS

A-15: Underground Detention Inspection Form

Underground Detention Inspection Form

Fairfax County Maintenance and Stormwater Management Division

Inspector: Cert ⊙
Inspector: Cert ⊙
Date:

Site ID: Facility ID: Facility Name:
Coordinates / ParID :
Address: Watershed: District:

Functional? Yes No

Score Totals: 1 2 3

Scoring Key
① High Priority / Non-functional
② Moderate Priority / Approaching Non-functional
③ Low Priority / Functional
⊙ No Priority / Continue Routine Maintenance
⊗ Not Applicable

Notes / Specifications:
Facility Specific Info:

Facility Type / Addl Facility Info:

Signs			Weather Conditions		
SCORE	PHOTO	DESCRIPTION	Last Rainfall	Date:	Amount:
③⊙⊗		Facility Sign		Data Source:	
③⊙⊗		Facility Labeling	Current weather conditions?		

Accessibility				
Access Comments:			ACCESS PROBLEMS (Circle)	NEXT STEP (Circle One)
New Access Comments for EAM:			Locked Gate / Fence	Coordinate with Owner
			Parked Cars	Return for Re-inspection
SCORE	PHOTO	DESCRIPTION	Stuck / Broken Cover	Request Photos from Owner
①⊙⊗		Overall Facility Access	Equipment Needed: _____	Contact MSMD
①②③⊙⊗		Component Access: _____	Other:_____	Other:_____

Control Structure					
Function:		Orifice Size:	Structure # on Plans:	Label(s) on Sketch:	
SCORE	PHOTO	DESCRIPTION		COMMENTS / DIMENSIONS	
①②③⊙⊗		Standing Water (after dry weather)			
①②③⊙⊗		Trash / Debris / Sediment *Description / Amount:*			
①②③⊙⊗		Spalling / Deterioration			
①②③⊙⊗		Manhole / Bilco Door Condition			
①②③⊙⊗		Ladder / Steps Condition			
①②③⊙⊗		Other: *Description:*			
		Low-Flow Orifice and Trash Rack			
①⊙⊗		Orifice Plate Missing / Non-Functional			
①⊙⊗		Trash Rack Missing / Non-Functional			
①②③⊙⊗		Blockage *(③ < 25% < ② < 75% < ①)*			
①②③⊙⊗		Damage / Deterioration *Description:*			
		Higher-Flow Orifice / Weir			
①⊙⊗		Missing / Not Found	Observed:	Specified:	
①②③⊙⊗		Blockage *(③ < 25% < ② < 75% < ①)*			
①②③⊙⊗		Other: *Description:*			
		Outlet Pipe			
①②③⊙⊗		Blockage *(③ < 25% < ② < 75% < ①)*			
①②③⊙⊗		Spalling / Deterioration			
①②③⊙⊗		Separation / Misalignment			

Detention Pipe / Vault									
SCORE	PHOTO	DESCRIPTION	1	2	3	4	5	6
		Structure # on Plans:						
		Label on Sketch:						
①②③⊙⊗		Standing Water (after dry weather)						
①②③⊙⊗		Trash / Debris / Sediment *Description / Amount:*						
①②③⊙⊗		Spalling / Deterioration						
①②③⊙⊗		Separation / Misalignment						
①②③⊙⊗		Inflow Pipes, if any *Pipe Direction / Problem:*						
①②③⊙⊗		Manhole / Bilco Door Condition						
①②③⊙⊗		Ladder / Steps Condition						
①②③⊙⊗		Blockage *(③ < 25% < ② < 75% < ①)*						
①②③⊙⊗		Other: *Description:*						

Outfall Structure				
Material:		Size:	End Type:	
SCORE	PHOTO	DESCRIPTION	COMMENTS / DIMENSIONS	
①②③⊙⊗		Blockage *(③ < 25% < ② < 75% < ①)*		
①②③⊙⊗		Trash / Debris / Sediment		
①②③⊙⊗		Erosion / Undermining *Area:*		
①②③⊙⊗		Spalling / Deterioration		
①②③⊙⊗		Separation / Misalignment		
①②③⊙⊗		Overgrown Vegetation / Tree Removal		
①②③⊙⊗		Manhole Condition		
①②③⊙⊗		Ladder / Steps Condition		
①②③⊙⊗		Downstream Channel Condition		
①②③⊙⊗		Other:		

Underground Detention Inspection Form Page 2

Site ID: _____ Facility ID: _____ Facility Name: _____

Other			
SCORE	PHOTO	DESCRIPTION	LOCATION
①②③⊙⊗		Encroachments	
①②③⊙⊗		Modifications	
①②③⊙⊗		Mosquito Habitat	
①②③⊙⊗		Evidence of Possible Illicit Discharge *(Email to report: stormwaterpollution@fairfaxcounty.gov)*	

INSPECTOR COMMENTS

A-16: Vegetated Filter Strip/Open Space Inspection Form

Vegetated Filter Strip / Open Space Inspection Form

Inspector: Cert ⊙

Inspector: Cert ⊙

Date:

Fairfax County Maintenance and Stormwater Management Division

Site ID: Facility ID: Facility Name:

Coordinates / ParID :

Address: Watershed: District:

Functional? Yes No

Score Totals: 1 2 3

Scoring Key

①	High Priority / Non-functional
②	Moderate Priority / Approaching Non-functional
③	Low Priority / Functional
⊙	No Priority / Continue Routine Maintenance
⊗	Not Applicable

Notes / Specifications:

Facility Specific Info:

Facility Type / Addl Facility Info:

Signs			Weather Conditions	
SCORE	PHOTO	DESCRIPTION	Last Rainfall Date:	Amount:
③⊙⊗		Facility Sign	Data Source:	
③⊙⊗		Facility Labeling	Current weather conditions?	

Accessibility

Access Comments:	ACCESS PROBLEMS (Circle)	NEXT STEP (Circle One)
New Access Comments for EAM:	Locked Gate / Fence	Coordinate with Owner
	Other:_____	Return for Re-inspection
		Request Photos from Owner
		Contact MSMD
		Other:_____

SCORE	PHOTO	DESCRIPTION
① ⊙⊗		Overall Facility Access
①②③⊙⊗		Component Access: _____

Energy Dissipator

Type: Gravel Diaphragm / Engineered Level Spreader / Other:_____ Required by Plans? Yes / No

SCORE	PHOTO	DESCRIPTION		COMMENTS / DIMENSIONS	
① ⊙⊗		Missing / Non-Functional	Description:		
① ⊙⊗		Inconsistent with Plans	(Area, Vertical Drop, etc.)	Observed:	Specified:
①②③⊙⊗		Damage / Deterioration	Description:		
①②③⊙⊗		Trash / Debris / Sediment	Description / Amount:		
①②③⊙⊗		Other:	Description:		

Vegetated Filter Strip / Open Space

SCORE	PHOTO	DESCRIPTION		COMMENTS / DIMENSIONS		
① ⊙⊗		Ponding Water (after dry weather)				
①②③⊙⊗		Bare Spots / Erosion	Area:			
①②③⊙⊗		Trash / Debris / Sediment	Description / Amount:			
①②③⊙⊗		Other:	Description:			
Plant Material				Plants in Inventory:		
①②③⊙⊗		Trees Missing	(20% < ③ < 40% < ② < 60% < ①)	Observed:	Specified:	Total % of Plant Material Coverage:
①②③⊙⊗		Shrubs Missing	(see above)	Observed:	Specified:	
①②③⊙⊗		Groundcover Plants Missing		Observed:	Specified:	
		VF: Turf grass is normal. OS: No mowing, maintain original forest understory.				
①②③⊙⊗		Unhealthy / Damaged				
①②③⊙⊗		Overgrown / Invasive Vegetation				
		VF: Mowtwice/year or more to maintain turf grass. OS: Identify invasives, maintain original forest with understory.				
①②③⊙⊗		Unauthorized Planting	Description:			
①②③⊙⊗		Other:	Description:			

Permeable Berm

Required by Plans? Yes / No

SCORE	PHOTO	DESCRIPTION		COMMENTS / DIMENSIONS
① ⊙⊗		Missing / Non-Functional	Description:	
①②③⊙⊗		Bare Spots / Erosion	Area:	
①②③⊙⊗		Damaged	Description:	
①②③⊙⊗		Trash / Debris / Sediment	Description / Amount:	
①②③⊙⊗		Overgrown Vegetation		
①②③⊙⊗		Other:	Description:	

Upstream Inflow(s)

SCORE	PHOTO	DESCRIPTION	1	2	3	4	5	6
		End Type / Overland:						
		Pipe Material:						
		Pipe Size:						
①②③⊙⊗		Trash / Debris / Sediment Removal						
①②③⊙⊗		Blockage (③ < 25% < ② < 75% < ①)						
①②③⊙⊗		Spalling / Deterioration						
①②③⊙⊗		Erosion / Undermining						
①②③⊙⊗		Overgrown Vegetation / Tree Removal						
①②③⊙⊗		Other:						

Vegetated Filter Strip / Open Space Inspection Form Page 2

Site ID: _____ Facility ID: _____ Facility Name: _____

Outfall Structure			
Material:	Size:	End Type:	
SCORE PHOTO	DESCRIPTION		COMMENTS / DIMENSIONS
①②③☉⊗	Blockage	(③ < 25% < ② < 75% < ①)	
①②③☉⊗	Trash / Debris / Sediment		
①②③☉⊗	Erosion / Undermining	Area:	
①②③☉⊗	Spalling / Deterioration		
①②③☉⊗	Separation / Misalignment		
①②③☉⊗	Overgrown Vegetation / Tree Removal		
①②③☉⊗	Manhole Condition		
①②③☉⊗	Ladder / Steps Condition		
①②③☉⊗	Downstream Channel Condition		
①②③☉⊗	Other:		

Other		
SCORE PHOTO	DESCRIPTION	LOCATION
①②③☉⊗	Encroachments	
①②③☉⊗	Modifications	
①②③☉⊗	Mosquito Habitat	
①②③☉⊗	Evidence of Possible Illicit Discharge	
	(Email to report: stormwaterpollution@fairfaxcounty.gov)	

INSPECTOR COMMENTS

A-17: Vegetated Swale Inspection Form

Vegetated Swale Inspection Form

Grass Channel, Dry Swale, Wet Swale, and Regenerative Stormwater Conveyance

Fairfax County Maintenance and Stormwater Management Division

Inspector: ____ Cert ⊙
Inspector: ____ Cert ⊙
Date: ____

Site ID: ____ Facility ID: ____ Facility Name: ____
Address: ____ Coordinates / ParID : ____
Watershed: ____ District: ____

Functional? ☐ Yes ☐ No

Score Totals: ____ (1) ____ (2) ____ (3)

Scoring Key

①	High Priority / Non-functional
②	Moderate Priority / Approaching Non-functional
③	Low Priority / Functional
⊙	No Priority / Continue Routine Maintenance
⊗	Not Applicable

Notes / Specifications: ____ Facility Specific Info: ____

Facility Type / Addl Facility Info: ____

Signs			Weather Conditions		
SCORE	PHOTO	DESCRIPTION	Last Rainfall	Date:	Amount:
③⊙⊗		Facility Sign		Data Source:	
③⊙⊗		Facility Labeling	Current weather conditions?		

Accessibility

Access Comments:	ACCESS PROBLEMS (Circle)	NEXT STEP (Circle One)
New Access Comments for EAM:	Locked Gate / Fence	Coordinate with Owner
	Heavy Vegetation	Return for Re-inspection
	Equipment Needed: _____	Request Photos from Owner
	Other:_____	Contact MSMD
		Other:_____

SCORE	PHOTO	DESCRIPTION
① ⊙⊗		Overall Facility Access
①②③⊙⊗		Component Access: _____

Vegetated Swale

SCORE	PHOTO	DESCRIPTION		COMMENTS / DIMENSIONS	
①②③⊙⊗		Trash / Debris / Sediment	Description / Amount:		
①②③⊙⊗		Bare Spots / Erosion	Area:		
①②③⊙⊗		Ponding Water	(where not part of design)		
①②③⊙⊗		Other:			
		Check Dams			
① ⊙⊗		Missing / Inconsistent with Plans		Observed:	Specified:
①②③⊙⊗		Damaged			
①②③⊙⊗		Other:			
		Observation Well / Cleanout(s)			
① ⊙⊗		Missing / Not Found		# Observed:	# Specified:
① ⊙⊗		Cap Missing / Stuck			
①②③⊙⊗		Water / Sediment Observed in Well?			
①②③⊙⊗		Vegetation / External Obstructions			
①②③⊙⊗		Damaged			
①②③⊙⊗		Other:			
		Plant Material		Plants in Inventory:	
①②③⊙⊗		Trees Missing	(20% < ② < 40% < ③ < 60% < ④)	Observed:	Specified:
①②③⊙⊗		Shrubs Missing	(see above)	Observed:	Specified:
①②③⊙⊗		Groundcover Plants Missing	(see above)	Observed:	Specified:
①②③⊙⊗		Wetland Vegetation		Observed:	Specified:
①②③⊙⊗		Unhealthy / Damaged			
①②③⊙⊗		Unauthorized Planting	Description:		
①②③⊙⊗		Overgrown / Invasive Vegetation			
①②③⊙⊗		Other:			
		Wet Swale Components			
①②③⊙⊗		Water Level Inconsistent with Plans			
①②③⊙⊗		Other:			
		Regenerative Stormwater Conveyance Components			
①②③⊙⊗		Step Pool Condition			
①②③⊙⊗		Riffle Condition			
①②③⊙⊗		Displaced Stones			
①②③⊙⊗		Root Wads and Other Woody Habitat Structures			
①②③⊙⊗		Other:			

Total % of Plant Material Coverage: ____

Upstream Inflow(s)

SCORE	PHOTO	DESCRIPTION	1	2	3	4	5	6
		End Type / Overland:						
		Pipe Material:						
		Pipe Size:						
①②③⊙⊗		Trash / Debris / Sediment Removal						
①②③⊙⊗		Blockage (② < 25% < ③ < 75% < ④)						
①②③⊙⊗		Spalling / Deterioration						
①②③⊙⊗		Erosion / Undermining						
①②③⊙⊗		Overgrown Vegetation / Tree Removal						
①②③⊙⊗		Other:						

Pre-Treatment / Energy Dissipators

Type(s): Flow spreader / Forebay / Gravel diaphragm / Grass filter strip / Grass channel / Leaf screen / Level spreader / Other:_____

SCORE	PHOTO	DESCRIPTION		COMMENTS / DIMENSIONS	
① ⊙⊗		Missing / Non-Functional	Description:		
① ⊙⊗		Inconsistent with Plans	(Area, Vertical Drop, etc.)	Observed:	Specified:
①②③⊙⊗		Damage / Deterioration	Description:		
①②③⊙⊗		Trash / Debris / Sediment	Description / Amount:		
①②③⊙⊗		Other:			

Vegetated Swale Inspection Form — Page 2

Site ID: _____ Facility ID: _____ Facility Name: _____

Underdrain(s)

		Specified on Approved Plans?	
SCORE	PHOTO	DESCRIPTION	COMMENTS / DIMENSIONS
① ⊙ ⊗		Missing	
①②③⊙⊗		Blockage	(ⓐ < 25% < ⓑ < 75% < ⓒ)
①②③⊙⊗		Spalling / Deterioration	
①②③⊙⊗		Separation / Misaligned Joints	
①②③⊙⊗		Other:	

Outfall Structure

Material:		Size:	End Type:	
SCORE	PHOTO	DESCRIPTION		COMMENTS / DIMENSIONS
①②③⊙⊗		Blockage	(ⓐ < 25% < ⓑ < 75% < ⓒ)	
①②③⊙⊗		Trash / Debris / Sediment		
①②③⊙⊗		Erosion / Undermining	Area:	
①②③⊙⊗		Spalling / Deterioration		
①②③⊙⊗		Separation / Misalignment		
①②③⊙⊗		Overgrown Vegetation / Tree Removal		
①②③⊙⊗		Manhole Condition		
①②③⊙⊗		Ladder / Steps Condition		
①②③⊙⊗		Downstream Channel Condition		
①②③⊙⊗		Other:		

Other

SCORE	PHOTO	DESCRIPTION	LOCATION
①②③⊙⊗		Encroachments	
①②③⊙⊗		Modifications	
①②③⊙⊗		Mosquito Habitat	
①②③⊙⊗		Evidence of Possible Illicit Discharge	
		(Email to report: stormwaterpollution@fairfaxcounty.gov)	

INSPECTOR COMMENTS

Appendix B-Reporting Forms

B-1: Notice of Inspection (NOI)

The NOI is the full inspection report sent to a private facility owner, and it includes a cover letter, CAR, photos with orientation sketch, any applicable site plans, a copy of the PMA (if applicable), GIS map, a copy of the County Maintenance guidelines, and a blank MAR (for the owner to complete and return). As most components of the NOI are already described or attached in the Appendices, we will include samples of six cover letters, covering:

- Facilities without required maintenance and with an established PMA
- Facilities with recommended maintenance and with an established PMA
- Facilities with required maintenance and with an established PMA
- Facilities without required maintenance and without an established PMA
- Facilities with recommended maintenance and without an established PMA
- Facilities with required maintenance and without an established PMA

Cover Letter with PMA (No required maintenance)

County of Fairfax, Virginia

To protect and enrich the quality of life for the people, neighborhoods and diverse communities of Fairfax County

CERTIFIED LETTER

The Owner
1234 Everywhere Street
Fairfax, VA 22033

Subject: Notice of Inspection of Privately Maintained Stormwater Management Facility

Reference: Site ID / Facility ID: **S1234 / BR0056**
Project / Plan No.: The Owner / 0102-SD-03-4
Location: 1234 Everywhere Street
Tax Map No: 023.4 ((56)) () 0007

Dear Facility Owner:

As part of Fairfax County's stormwater management program, Maintenance and Stormwater Management Division (MSMD) inspects stormwater management facilities to ensure proper maintenance is performed and that the facility is functioning according to the approved design. The County performs maintenance inspections of stormwater management facilities to meet state and federal regulatory requirements and practice good environmental stewardship. As the owner of the above referenced facility, you are responsible for ensuring proper maintenance and functionality of the stormwater facility that serves your property.

On 10/16/2013, Fairfax County conducted a visual condition assessment of the above-referenced stormwater management facility. The purpose of this letter is to inform you of the inspection findings and any required maintenance activities that must be performed. The following are enclosed with this letter:

- Condition Assessment Report (CAR), including photos
- Copy of Approved Facility Plan Sheets
- Copy of Private Maintenance Agreement (Deed Book / Page: 12304 / 5607)
- Copy of Tax Map
- Copy of GIS Aerial Site Photo
- Maintenance Guidelines
- Maintenance Contractor List

The following observation was made during the 10/16/2013 inspection: **Other than your normal routine maintenance, no additional maintenance activity appears to be needed at this time (see enclosed Condition Assessment Report).** We thank you for maintaining this facility in good condition and look forward to your continued cooperation in protecting the waters of Fairfax County and the Chesapeake Bay.

The enclosed Private Maintenance Agreement ("PMA") governs the maintenance requirements for the stormwater management facility located on your property. The PMA was executed by the site developer/owner and the County to ensure proper functionality and regular maintenance for the life of the facility. This agreement runs with the land as part of the recorded deed and is binding upon all subsequent landowners of the property.

Department of Public Works and Environmental Services
Maintenance and Stormwater Management Division
10635 West Drive, Fairfax, VA 22030-4229
Phone: 703-877-2800, TTY: 711
Email: DPWES-MSMD-Inspections@fairfaxcounty.gov
www.fairfaxcounty.gov/dpwes/stormwater/maintenance

Plan No: 0102-SD-03-4
Facility ID: BR0056
Page 2 of 2

Under the Fairfax County Stormwater Management Ordinance, the County is authorized to pursue enforcement against anyone who fails to maintain their stormwater management facility in accordance with the terms of the recorded PMA (Code of Fairfax County § 124-8-3(B)(vii)). Specifically, the County may seek civil penalties in an amount up to $32,500 for each day that a violation exists (Code of Fairfax County § 124-8-3). Additionally, the County can take legal action to enforce the terms of the PMA.

Your cooperation is greatly appreciated and will help the County meet its regulatory requirements and achieve its goal of protecting its streams, rivers and the Chesapeake Bay. If you have any questions regarding the Condition Assessment Report, please contact **Warren O'Hara** or me at (703) 877-2800. For additional information on maintaining stormwater management facilities, please visit our Website at: www.fairfaxcounty.gov/dpwes/stormwater/maintenance.

Sincerely,

Todd Nelson, Chief
Inspections and Enforcement Section

TLN/Company Initials
Encl.: As Stated
cc: Chron Files & Facility Files

Cover Letter with PMA (with recommended maintenance)

County of Fairfax, Virginia

To protect and enrich the quality of life for the people, neighborhoods and diverse communities of Fairfax County

CERTIFIED LETTER

The Owner
1234 Universal Drive
Chantilly, VA 20151

Subject: Notice of Inspection of Privately Maintained Stormwater Management Facility

Reference: Site ID / Facility ID: **S1234 / WP0058**
Project / Plan No.: The Owner / 2345-SP-06-7
Location: 1234 Universal Drive
Tax Map No: 012.3 ((45)) () 0006

Dear Facility Owner:

As part of Fairfax County's stormwater management program, Maintenance and Stormwater Management Division (MSMD) inspects stormwater management facilities to ensure proper maintenance is performed and that the facility is functioning according to the approved design. The County performs maintenance inspections of stormwater management facilities to meet state and federal regulatory requirements and practice good environmental stewardship. As the owner of the above-referenced facility, you are responsible for ensuring proper maintenance and functionality of the stormwater facility that serves your property.

On 10/22/2014, Fairfax County conducted a visual condition assessment of the above-referenced stormwater management facility. The purpose of this letter is to inform you of the inspection findings and any required maintenance activities that must be performed. The following are enclosed with this letter:

- Condition Assessment Report (CAR), including photos
- Copy of Approved Facility Plan Sheets
- Copy of Private Maintenance Agreement (Deed Book / Page: 12345 / 0006)
- Copy of Tax Map
- Copy of GIS Aerial Site Photo
- Maintenance Guidelines
- Maintenance Contractor List
- Maintenance Activity Report (MAR)

The following observation was made during the 10/22/2014 inspection: **Maintenance is recommended to ensure continued functionality of the facility (see enclosed Condition Assessment Report). Failure to perform timely maintenance may lead to greater expense in the future.**

The enclosed Private Maintenance Agreement ("PMA") governs the maintenance requirements for the stormwater management facility located on your property. The PMA was executed by the site developer/owner and the County to ensure proper functionality and regular maintenance for the life of the facility. This agreement runs with the land as part of the recorded deed and is binding upon all subsequent landowners of the property.

Department of Public Works and Environmental Services
Maintenance and Stormwater Management Division
10635 West Drive, Fairfax, VA 22030-4229
Phone: 703-877-2800, TTY: 711
Email: DPWES-MSMD-Inspections@fairfaxcounty.gov
www.fairfaxcounty.gov/dpwes/stormwater/maintenance

Plan No: 2345-SP-06-7
Facility ID: WP0058
Page 2 of 2

Under the Fairfax County Stormwater Management Ordinance, the County is authorized to pursue enforcement against anyone who fails to maintain their stormwater management facility in accordance with the terms of the recorded PMA (Code of Fairfax County § 124-8-3(B)(vii)). Specifically, the County may seek civil penalties in an amount up to $32,500 for each day that a violation exists (Code of Fairfax County § 124-8-3). Additionally, the County can take legal action to enforce the terms of the PMA.

The enclosed stormwater management guidelines are provided to you as a courtesy and are based on general knowledge of maintenance required for these types of facilities. The guidelines are not meant to replace or supersede any specific recommendations offered by a qualified professional. **MSMD requests that a responsible party perform the recommended maintenance to ensure continued functionality of the facility. Should you choose to perform the recommended maintenance, please complete the attached Maintenance Activity Report form and submit it to this office.**

Your cooperation is greatly appreciated and will help the County meet its regulatory requirements and achieve its goal of protecting its streams, rivers and the Chesapeake Bay. If you have any questions regarding the Condition Assessment Report, please contact **Warren O'Hara** or me at (703) 877-2800. For additional information on maintaining stormwater management facilities, please visit our Website at: www.fairfaxcounty.gov/dpwes/stormwater/maintenance.

Sincerely,

Todd Nelson, Chief
Inspections and Enforcement Section

TLN/Company Initials
Encl.: As Stated
cc: Chron Files & Facility Files

Cover Letter with PMA (with required maintenance)

County of Fairfax, Virginia

To protect and enrich the quality of life for the people, neighborhoods and diverse communities of Fairfax County

CERTIFIED LETTER

The Owner
1234 Main Street
Alexandria, VA 22306

Subject: Notice of Inspection of Privately Maintained Stormwater Management Facility

Reference: Site ID / Facility ID: **S1234 / BR0012**
Project / Plan No.: The Owner / 1234-SP-05-6
Location: 1234 Main Street
Tax Map No: 012.3 ((45)) () 0006

Dear Facility Owner:

As part of Fairfax County's stormwater management program, Maintenance and Stormwater Management Division (MSMD) inspects stormwater management facilities to ensure proper maintenance is performed and that the facility is functioning according to the approved design. The County performs maintenance inspections of stormwater management facilities to meet state and federal regulatory requirements and practice good environmental stewardship. As the owner of the above-referenced facility, you are responsible for ensuring proper maintenance and functionality of the stormwater facility that serves your property.

On 10/4/2016, Fairfax County conducted a visual condition assessment of the above-referenced stormwater management facility. The purpose of this letter is to inform you of the inspection findings and any required maintenance activities that must be performed. The following are enclosed with this letter:

- Condition Assessment Report (CAR), including photos
- Copy of Approved Facility Plan Sheets
- Copy of Private Maintenance Agreement (Deed Book / Page: 12345 / 6000)
- Copy of Tax Map
- Copy of GIS Aerial Site Photo
- Maintenance Guidelines
- Maintenance Contractor List
- Maintenance Activity Report (MAR)

The following observation was made during the 10/4/2016 inspection: **Immediate maintenance is required to restore proper functionality of the facility. Failure to comply will result in a Notice of Violation (Article 8 of the Stormwater Management Ordinance).**

The enclosed Private Maintenance Agreement ("PMA") governs the maintenance requirements for the stormwater management facility located on your property. The PMA was executed by the site developer/owner and the County to ensure proper functionality and regular maintenance for the life of the facility. This agreement runs with the land as part of the recorded deed and is binding upon all subsequent landowners of the property.

Department of Public Works and Environmental Services
Maintenance and Stormwater Management Division
10635 West Drive, Fairfax, VA 22030-4229
Phone: 703-877-2800, TTY: 711
Email: DPWES-MSMD-Inspections@fairfaxcounty.gov
www.fairfaxcounty.gov/dpwes/stormwater/maintenance

Plan No: 1234-SP-05-6
Facility ID: BR0012
Page 2 of 2

Under the Fairfax County Stormwater Management Ordinance, the County is authorized to pursue enforcement against anyone who fails to maintain their stormwater management facility in accordance with the terms of the recorded PMA (Code of Fairfax County § 124-8-3(B)(vii)). Specifically, the County may seek civil penalties in an amount up to $32,500 for each day that a violation exists (Code of Fairfax County § 124-8-3). Additionally, the County can take legal action to enforce the terms of the PMA.

The enclosed stormwater management guidelines are provided to you as a courtesy and are based on general knowledge of maintenance required for these types of facilities. The guidelines are not meant to replace or supersede any specific recommendations offered by a qualified professional. **MSMD requests that a responsible party respond to this letter in writing within 45 days of your receipt of this letter using the attached Maintenance Activity Report form (Attn: Private Inspection & Enforcement Program).**

To ensure that your response is complete, please note the following:

- Reference your Site ID and Facility ID in all verbal and written correspondence
- The MAR must be completed and signed for the facility listed above
- The MAR must address each maintenance issue described in the CAR
- Please include **photos**, invoices, contracts, proposals, and/or work plans with the MAR
- Relaying this information via phone does not substitute for completion of the form
- No extensions will be granted
- **All work must be completed in order to be closed**

Your cooperation is greatly appreciated and will help the County meet its regulatory requirements and achieve its goal of protecting its streams, rivers and the Chesapeake Bay. If you have any questions regarding the Condition Assessment Report, please contact **Warren O'Hara** or me at (703) 877-2800. For additional information on maintaining stormwater management facilities, please visit our Website at: www.fairfaxcounty.gov/dpwes/stormwater/maintenance.

Sincerely,

Todd Nelson, Chief
Inspections and Enforcement Section

TLN/Company Initials
Encl.: As Stated
cc: Chron Files & Facility Files

Cover Letter without PMA (No required maintenance)

County of Fairfax, Virginia

To protect and enrich the quality of life for the people, neighborhoods and diverse communities of Fairfax County

CERTIFIED LETTER

Owner HOA
1230 Beta Court
Chantilly, VA 20151

Subject: Notice of Inspection of Privately Maintained Stormwater Management Facility

Reference: Site ID / Facility ID: **S2345 / WP0123**
Project / Plan No.: Owner Sec. 1 / 1234-SD-05-6
Location: 1230 Beta Court
Tax Map No: 034.5 ((67)) () F1

Dear Facility Owner:

As part of Fairfax County's stormwater management program, Maintenance and Stormwater Management Division (MSMD) inspects stormwater management facilities to ensure proper maintenance is performed and that the facility is functioning according to the approved design. The County performs maintenance inspections of stormwater management facilities to meet state and federal regulatory requirements and practice good environmental stewardship. As the owner of the above referenced facility, you are responsible for ensuring proper maintenance and functionality of the stormwater facility that serves your property.

On 4/22/2016, Fairfax County conducted a visual condition assessment of the above-referenced stormwater management facility. The purpose of this letter is to inform you of the inspection findings and any required maintenance activities that must be performed. The following are enclosed with this letter:

- Condition Assessment Report (CAR), including photos
- Copy of Approved Facility Plan Sheets
- Copy of Tax Map
- Copy of GIS Aerial Site Photo
- Maintenance Guidelines
- Maintenance Contractor List

The following observation was made during the 4/22/2016 inspection: **Other than your normal routine maintenance, no additional maintenance activity appears to be needed at this time (see enclosed Condition Assessment Report).** We thank you for maintaining this facility in good condition and look forward to your continued cooperation in protecting the waters of Fairfax County and the Chesapeake Bay.

The above-referenced stormwater management facility was constructed as part of a site plan approved by Fairfax County, the approval of which was contingent upon compliance with site development requirements related to the management of stormwater. Under Fairfax County Zoning Ordinance ("Zoning Ordinance") §§ 18-901(1) and 17-108(6) you are required to maintain the stormwater management facility in a condition that is consistent with the approved site plan. Failure to do so is a violation of the Zoning Ordinance.

Department of Public Works and Environmental Services
Maintenance and Stormwater Management Division
10635 West Drive, Fairfax, VA 22030-4229
Phone: 703-877-2800, TTY: 711
Email: DPWES-MSMD-Inspections@fairfaxcounty.gov
www.fairfaxcounty.gov/dpwes/stormwater/maintenance

Plan No: 1234-SP-05-6
Facility ID: WP0123
Page 2 of 2

Your cooperation is greatly appreciated and will help the County meet its regulatory requirements and achieve its goal of protecting its streams, rivers and the Chesapeake Bay. If you have any questions regarding the Condition Assessment Report, please contact **Warren O'Hara** or me at (703) 877-2800. For additional information on maintaining stormwater management facilities, please visit our Website at: www.fairfaxcounty.gov/dpwes/stormwater/maintenance.

Sincerely,

Todd Nelson, Chief
Inspections and Enforcement Section

TLN/Company Initials
Encl.: As Stated
cc: Chron Files & Facility Files

Cover Letter without PMA (with recommended maintenance)

County of Fairfax, Virginia

To protect and enrich the quality of life for the people, neighborhoods and diverse communities of Fairfax County

CERTIFIED LETTER

The Owner
1234 Everywhere Street
Fairfax, VA 22030

Subject: Notice of Inspection of Privately Maintained Stormwater Management Facility

Reference: Site ID / Facility ID: **S3456 / TR0789**
Project / Plan No.: The Owner/ 1234-INF-05
Location: 1234 Everywhere Street
Tax Map No: 045.6 ((07)) () 0008

Dear Facility Owner:

As part of Fairfax County's stormwater management program, Maintenance and Stormwater Management Division (MSMD) inspects stormwater management facilities to ensure proper maintenance is performed and that the facility is functioning according to the approved design. The County performs maintenance inspections of stormwater management facilities to meet state and federal regulatory requirements and practice good environmental stewardship. As the owner of the above-referenced facility, you are responsible for ensuring proper maintenance and functionality of the stormwater facility that serves your property.

On 11/24/2015, Fairfax County conducted a visual condition assessment of the above-referenced stormwater management facility. The purpose of this letter is to inform you of the inspection findings and any required maintenance activities that must be performed. The following are enclosed with this letter:

- Condition Assessment Report (CAR), including photos
- Copy of Approved Facility Plan Sheets
- Copy of Tax Map
- Copy of GIS Aerial Site Photo
- Maintenance Guidelines
- Maintenance Contractor List
- Maintenance Activity Report (MAR)

The following observation was made during the 11/24/2015 inspection: **Maintenance is recommended to ensure continued functionality of the facility (see enclosed Condition Assessment Report). Failure to perform timely maintenance may lead to greater expense in the future.**

The above-referenced stormwater management facility was constructed as part of a site plan approved by Fairfax County, the approval of which was contingent upon compliance with site development requirements related to the management of stormwater. Under Fairfax County Zoning Ordinance ("Zoning Ordinance") §§ 18-901(1) and 17-108(6) you are required to maintain the stormwater management facility in a condition that is consistent with the approved site plan. Failure to do so is a violation of the Zoning Ordinance.

Department of Public Works and Environmental Services
Maintenance and Stormwater Management Division
10635 West Drive, Fairfax, VA 22030-4229
Phone: 703-877-2800, TTY: 711
Email: DPWES-MSMD-Inspections@fairfaxcounty.gov
www.fairfaxcounty.gov/dpwes/stormwater/maintenance

Plan No: 1234-INF-05
Facility ID: TR0789
Page 2 of 2

The enclosed stormwater management guidelines are provided to you as a courtesy and are based on general knowledge of maintenance required for these types of facilities. The guidelines are not meant to replace or supersede any specific recommendations offered by a qualified professional. **MSMD requests that a responsible party perform the recommended maintenance to ensure continued functionality of the facility. Should you choose to perform the recommended maintenance, please complete the attached Maintenance Activity Report form and submit it to this office.**

Your cooperation is greatly appreciated and will help the County meet its regulatory requirements and achieve its goal of protecting its streams, rivers and the Chesapeake Bay. If you have any questions regarding the Condition Assessment Report, please contact **Warren O'Hara** or me at (703) 877-2800. For additional information on maintaining stormwater management facilities, please visit our Website at: www.fairfaxcounty.gov/dpwes/stormwater/maintenance.

Sincerely,

Todd Nelson, Chief
Inspections and Enforcement Section

TLN/Company Initials
Encl.: As Stated
cc: Chron Files & Facility Files

Cover Letter without PMA (with required maintenance)

County of Fairfax, Virginia

To protect and enrich the quality of life for the people, neighborhoods and diverse communities of Fairfax County

CERTIFIED LETTER

The Owner
2345 Beta Drive
Annandale, VA 22003

Subject: Notice of Inspection of Privately Maintained Stormwater Management Facility

Reference: Site ID / Facility ID: **S1234 / DP0789**
Project / Plan No.: The Owner / 4567-PI-08
Location: 2345 Beta Drive
Tax Map No: 012.3 ((45)) () A

Dear Facility Owner:

As part of Fairfax County's stormwater management program, Maintenance and Stormwater Management Division (MSMD) inspects stormwater management facilities to ensure proper maintenance is performed and that the facility is functioning according to the approved design. The County performs maintenance inspections of stormwater management facilities to meet state and federal regulatory requirements and practice good environmental stewardship. As the owner of the above-referenced facility, you are responsible for ensuring proper maintenance and functionality of the stormwater facility that serves your property.

On 11/13/2013, Fairfax County conducted a visual condition assessment of the above-referenced stormwater management facility. The purpose of this letter is to inform you of the inspection findings and any required maintenance activities that must be performed. The following are enclosed with this letter:

- Condition Assessment Report (CAR), including photos
- Copy of Approved Facility Plan Sheets
- Copy of Tax Map
- Copy of GIS Aerial Site Photo
- Maintenance Guidelines
- Maintenance Contractor List
- Maintenance Activity Report (MAR)

The following observation was made during the 11/13/2013 inspection: **Immediate maintenance is required to restore proper functionality of the facility. Failure to comply will result in a Notice of Violation (17-108(6) and 18-901(1) of the Zoning Ordinance).**

The above-referenced stormwater management facility was constructed as part of a site plan approved by Fairfax County, the approval of which was contingent upon compliance with site development requirements related to the management of stormwater. Under Fairfax County Zoning Ordinance ("Zoning Ordinance") §§ 18-901(1) and 17-108(6) you are required to maintain the stormwater management facility in a condition that is consistent with the approved site plan. Failure to do so is a violation of the Zoning Ordinance.

Department of Public Works and Environmental Services
Maintenance and Stormwater Management Division
10635 West Drive, Fairfax, VA 22030-4229
Phone: 703-877-2800, TTY: 711
Email: DPWES-MSMD-Inspections@fairfaxcounty.gov
www.fairfaxcounty.gov/dpwes/stormwater/maintenance

Plan No: 4567-PI-08
Facility ID: DP0456
Page 2 of 2

The enclosed stormwater management guidelines are provided to you as a courtesy and are based on general knowledge of maintenance required for these types of facilities. The guidelines are not meant to replace or supersede any specific recommendations offered by a qualified professional. MSMD requests that a responsible party respond to this letter in writing within 45 days of your receipt of this letter using the attached Maintenance Activity Report form (Attn: Private Inspection & Enforcement Program).

To ensure that your response is complete, please note the following:

- Reference your Site ID and Facility ID in all verbal and written correspondence
- The MAR must be completed and signed for the facility listed above
- The MAR must address each maintenance issue described in the CAR
- Please include **photos**, invoices, contracts, proposals, and/or work plans with the MAR
- Relaying this information via phone does not substitute for completion of the form
- No extensions will be granted
- **All work must be completed in order to be closed**

Your cooperation is greatly appreciated and will help the County meet its regulatory requirements and achieve its goal of protecting its streams, rivers and the Chesapeake Bay. If you have any questions regarding the Condition Assessment Report, please contact **Warren O'Hara** or me at (703) 877-2800. For additional information on maintaining stormwater management facilities, please visit our Website at: www.fairfaxcounty.gov/dpwes/stormwater/maintenance.

Sincerely,

Todd Nelson, Chief
Inspections and Enforcement Section

TLN/Company Initials
Encl.: As Stated
cc: Chron Files & Facility Files

B-2: Condition Assessment Report (CAR)-this is an example using a Bioretention BMP

BIORETENTION AREA
CONDITION ASSESSMENT REPORT (CAR)

Site ID / Facility ID:

☐ No deficiencies were noted during the assessment. Thank you for maintaining your stormwater management facility in good working order. Please continue routine maintenance.

☐ Maintenance is requested to *ensure continued functionality* of the facility. Failure to perform timely maintenance may lead to greater expense in the future.

☐ Immediate maintenance is required to *restore proper functionality* of the facility. Failure to comply will result in a Notice of Violation (Article 8 of the Stormwater Management Ordinance).

Summary of Condition Assessment

Continue Routine Maintenance	Deficiencies Noted	
☐	☐	Facility Overall
☐	☐	Inflow(s)
☐	☐	Ponding Area
☐	☐	Control Structure
☐	☐	Overflow Berm
☐	☐	Underdrain(s) and Principal Spillway Pipe
☐	☐	Outfall

This stormwater management Condition Assessment Report (CAR) offers a "point-in-time" representation of observed conditions at the facility and is not intended to provide any information regarding the functional integrity of the structure nor provide warranty as to present or future structure condition or performance. The CAR is not meant to replace or supersede any specific recommendation offered by a qualified professional.

B-3: Maintenance and Activity Report (MAR)

MAINTENANCE ACTIVITY REPORT

(Response requested within 45 days of receipt)

According to County records you are the current owner of a privately maintained stormwater management facility that had deficiencies at the time of an inspection on _____. This standard Maintenance Activity Report is requested as part of the private inspection/enforcement process. Failure to complete this form in a timely manner could result in a non-compliance status which could lead to enforcement activities.

Complete this form legibly in ink and mail or email to the following address within 45 days of receipt.

Please reference your Site ID and Facility ID in all correspondence

Attn: Visual Condition Assessment Program
Department of Public Works and Environmental Services
Maintenance and Stormwater Management Division
10635 West Drive
Fairfax, Virginia 22030
TEL: 703-877-2800
Email: DPWES-MSMD-Inspections@fairfaxcounty.gov

Facility Information (as shown on plan of record):
Project:
Plan No:
Location:
Tax Map:
Site ID / Facility ID:
Watershed:

Ownership and Contact Information

Current Owner:

Name: _____
Company: _____
Address: _____
_____
Phone: _____
Fax: _____
Email: _____

Owner's Agent for Maintenance:

Name: _____
Company: _____
Address: _____
_____
Phone: _____
Fax: _____
Email: _____

Description of Work Completed **Attach any invoices, photos or other information relative to maintenance performed or planned**	**Date Completed**	**Cost**
See other side for additional space.		

I, _____, hereby certify that the statements above are true to the best of my knowledge.
Printed Name

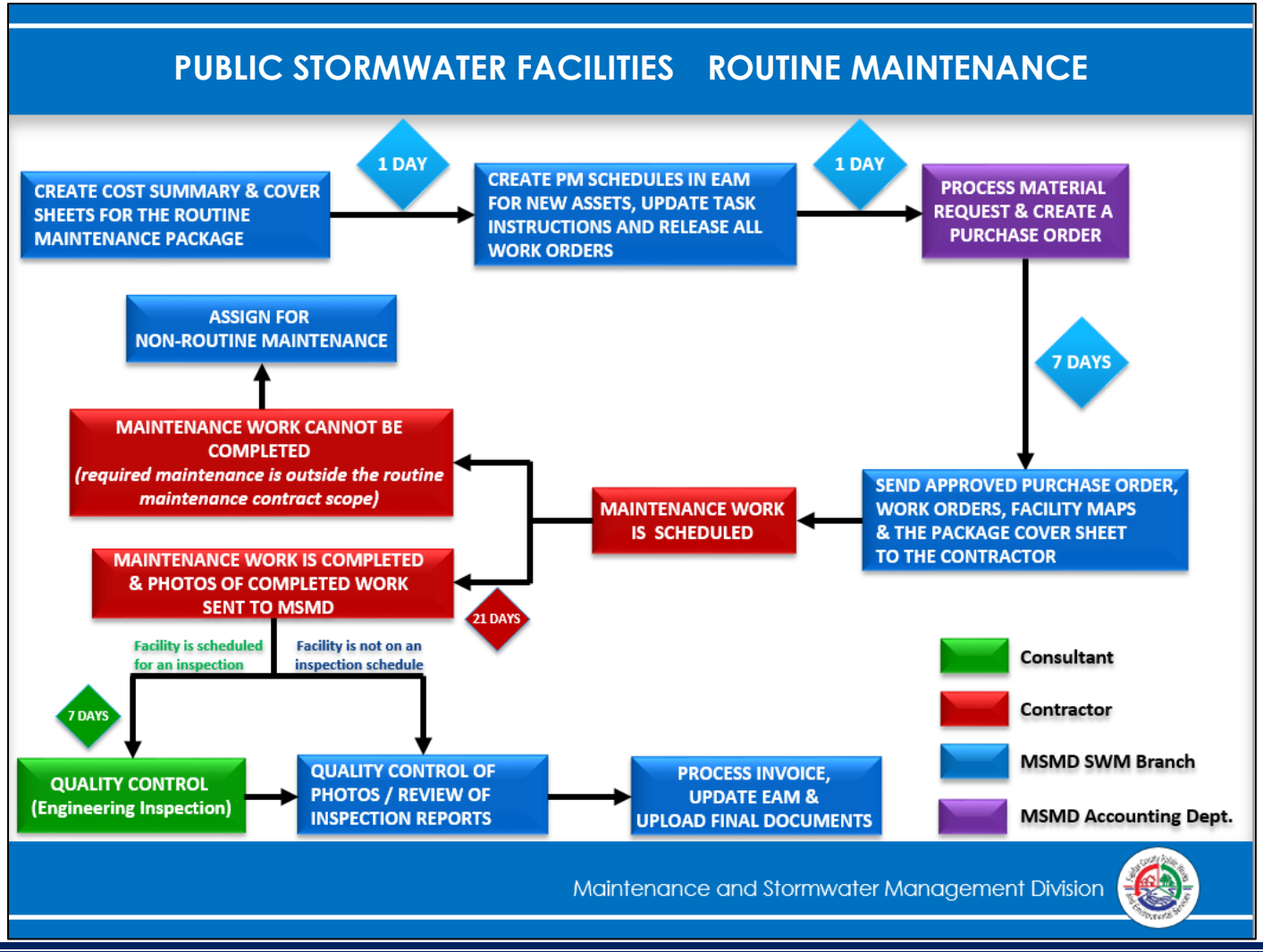
_____ _____ _____
Signature (Owner or Owner's Agent) Title Date

Legislation/Regulations/Permitting/Guidelines:

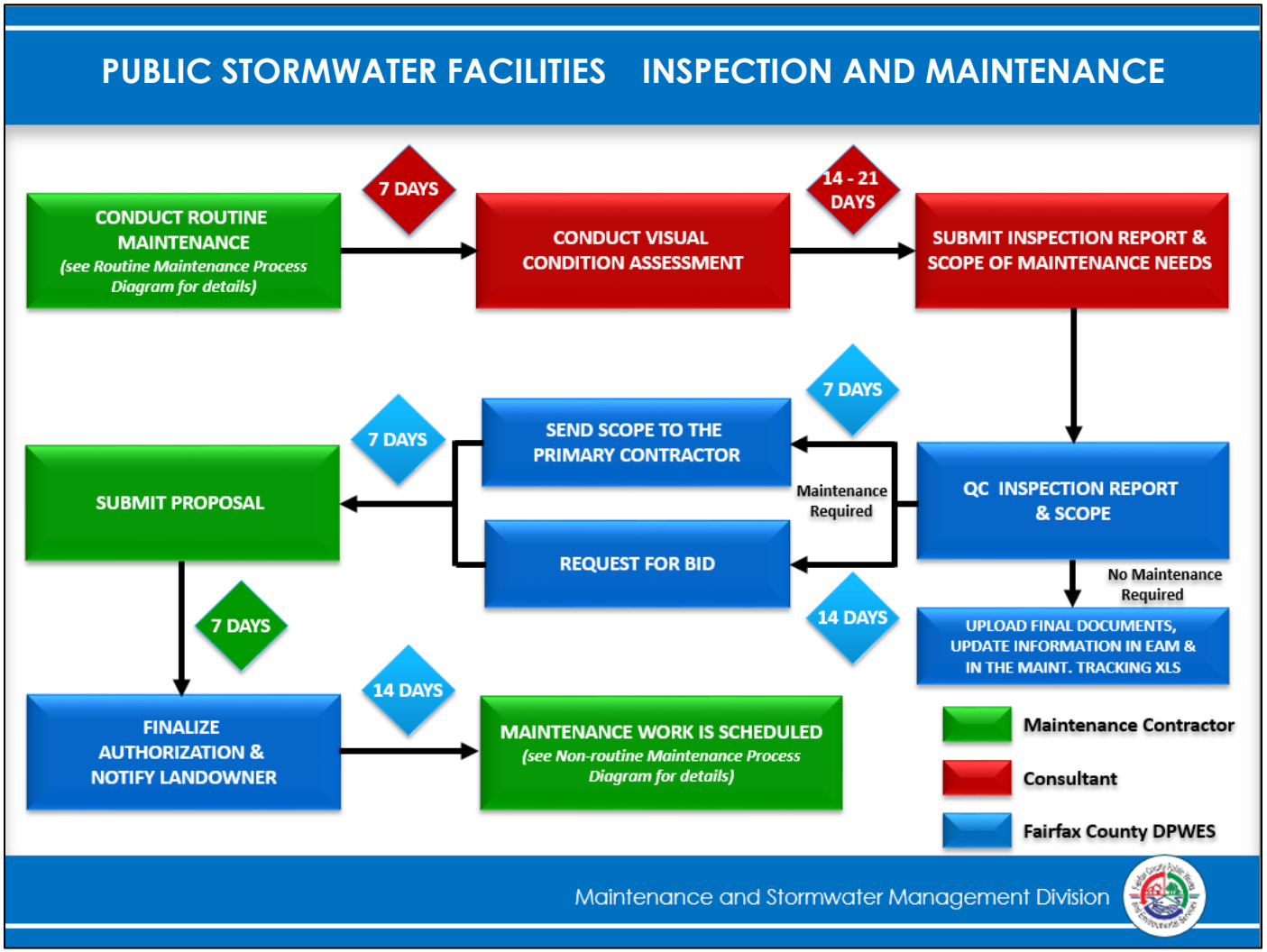
- Fairfax County Codified Ordinances – Chapters 104, 112, 118 & 124
- Fairfax County Public Facilities Manual (PFM), Chapter 6: Storm Drainage
- Virginia Stormwater Management Program (VSMP) (§9VAC25-870)
- Virginia Chesapeake Bay Preservation Act (§9VAC25-830)
- Federal Clean Water Act/Section 402-(P) enabling the National Pollution Discharge Elimination System under which Fairfax County is required to meet Federal mandates as required by the Municipal Separate Storm Sewer System (MS4) Permit #: VA0088587

Appendix C-Work Flow Process Charts

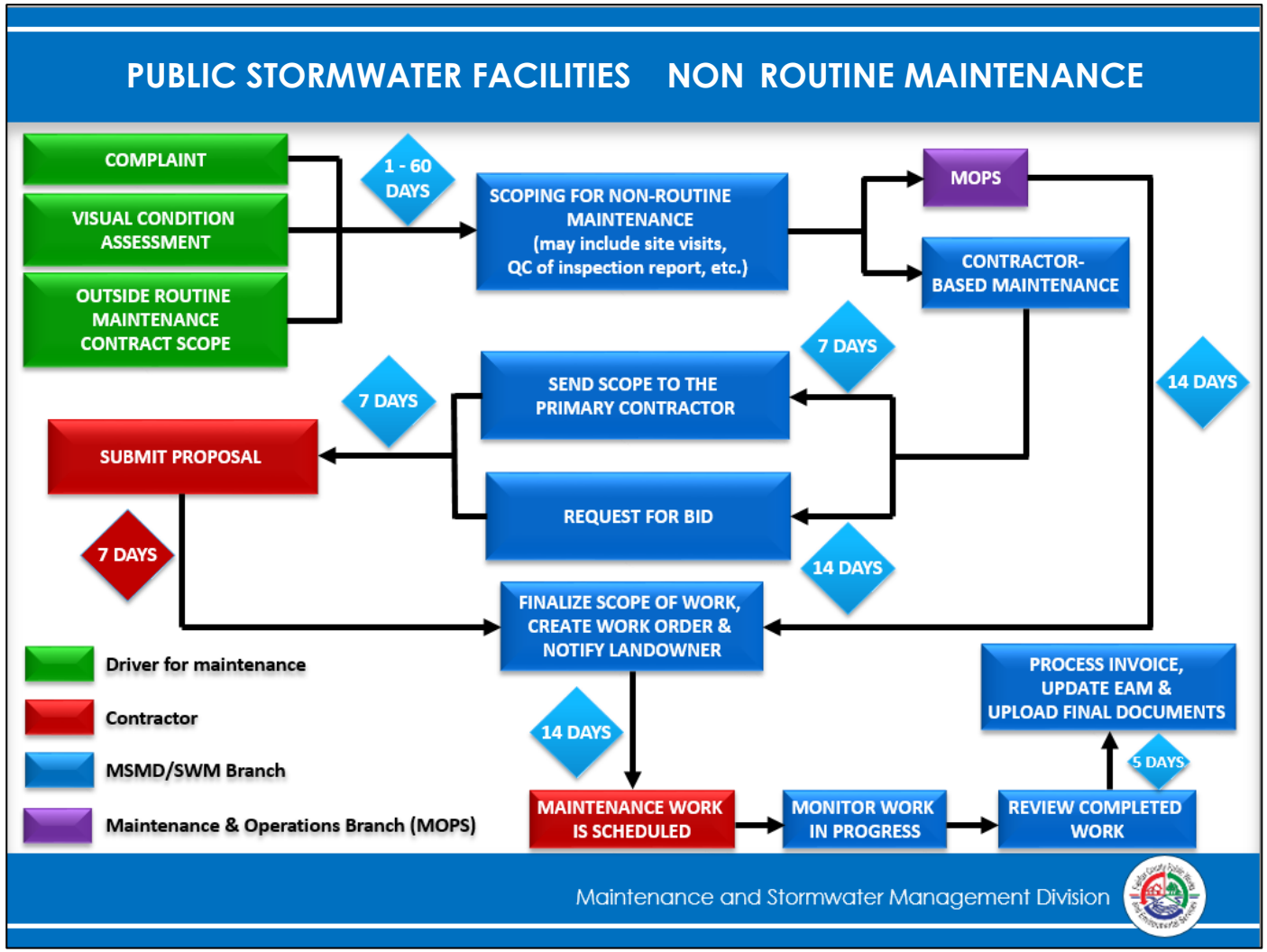
C-1: Public Stormwater Facilities-Routine Maintenance



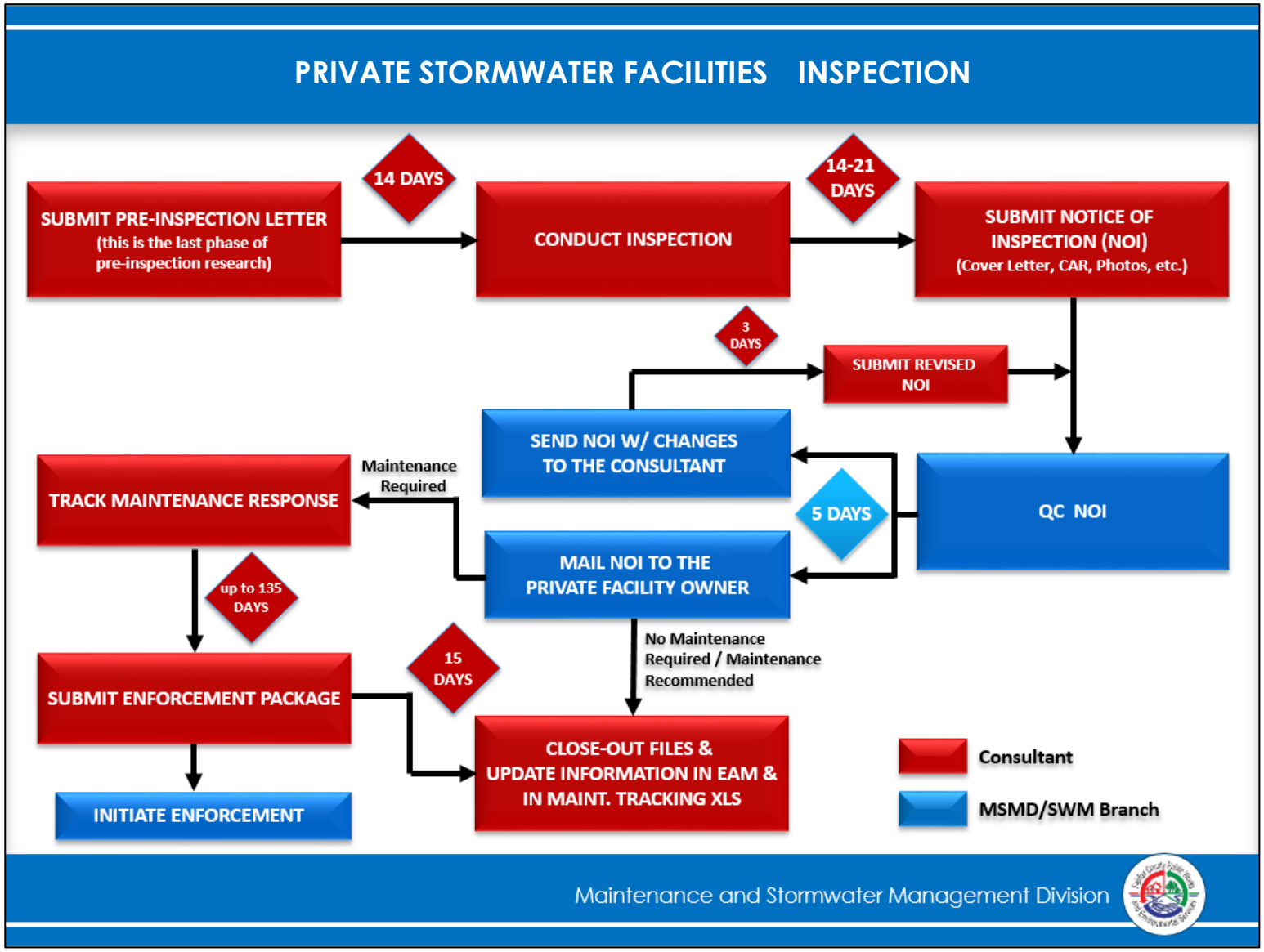
C-2: Public Stormwater Facilities-Inspection and Maintenance



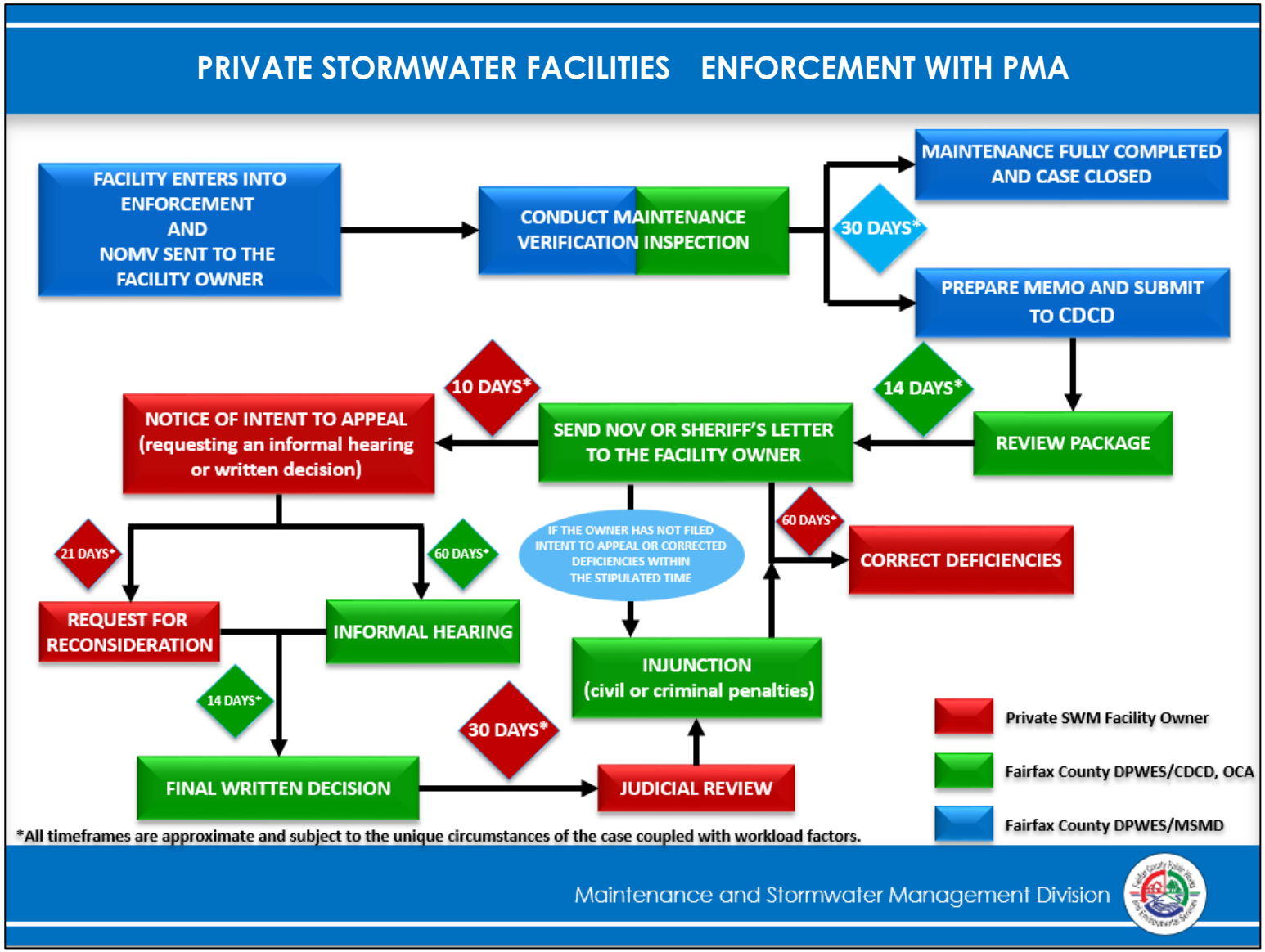
C-3: Public Stormwater Facilities-Non-routine Maintenance



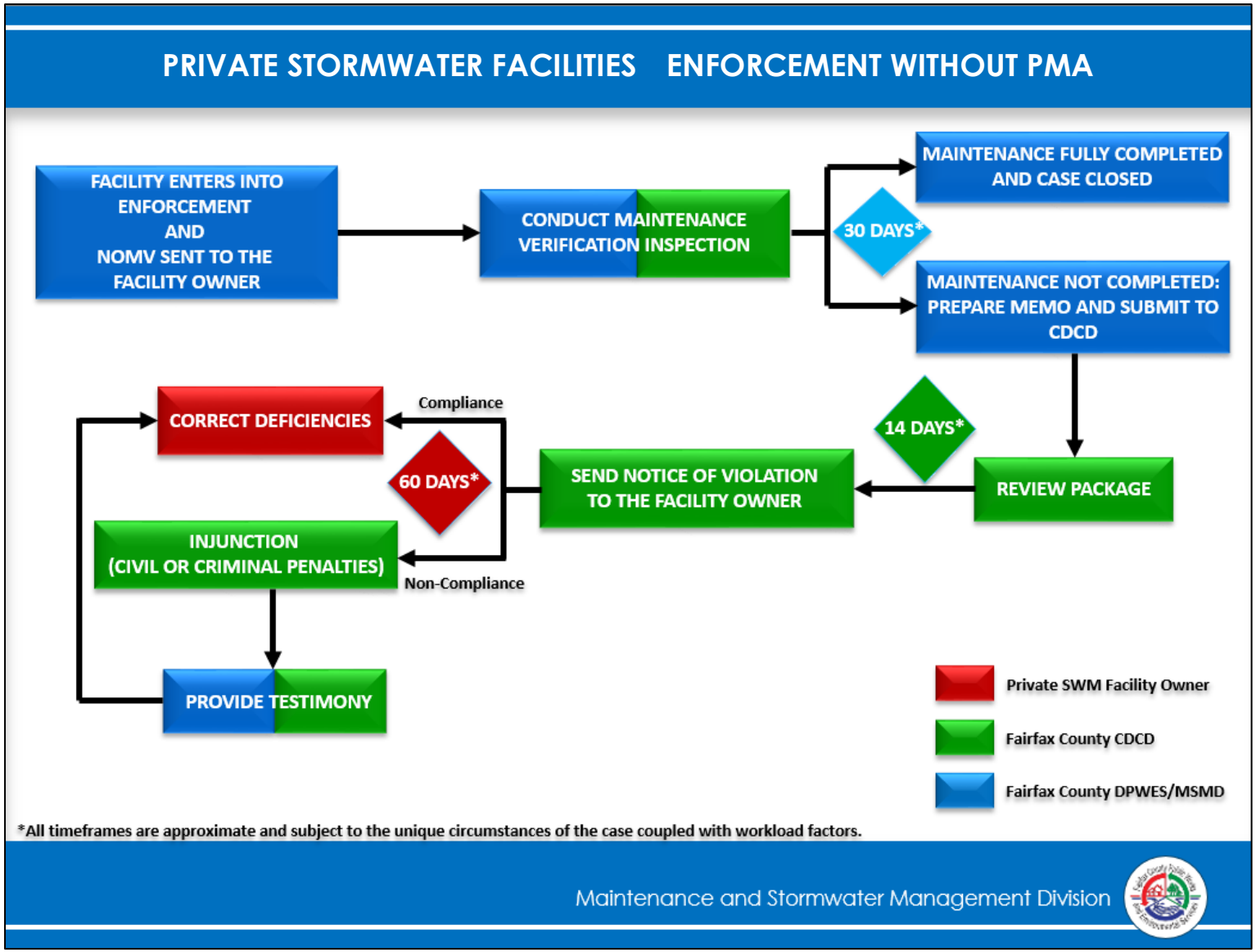
C-4: Private Stormwater Facilities-Inspection



C-5: Private Stormwater Facilities-Enforcement with PMA



C-6: Private Stormwater Facilities-Enforcement without PMA



Appendix D1

Field Inspections and Reporting Policies and Procedures

January 2016
Revised April 2017
Revised April 2020
Revised June 2021

Prepared by:

Fairfax County Department of Public Works and Environmental Services (DPWES)
Maintenance and Stormwater Management Division (MSMD)
10635 West Drive
Fairfax, Virginia 22030

In consultation with:

GKY & Associates, Inc.
4229 Lafayette Center Drive
Suite 1850
Chantilly, VA 20151

Table of Contents

1 Introduction

Field inspections and reporting compiles information about the operational health and maintenance needs for a stormwater control measure (SCM), i.e. facility(ies). SCMs may include a stormwater management facility or best management practice (BMP). The goal of this document is to provide a standardized approach to conducting field inspections and reporting to ensure consistency amongst all inspectors and contractors.

The field inspection and reporting task has two main purposes:

1. To record the current condition of the facility as compared to the design condition, and
2. To report that condition clearly to the facility owner, either public or private.

Please note that public facility inspections may also require taking measurements of specific maintenance items and preparing a scope of work narrative. Those items are discussed in the Field Measurements and Work Order Preparation guide.

1.1 Time Estimates

The following time estimates may be considered as averages for use in generating estimates for field inspection tasks (i.e., preparation time, field time requirements per facility type, and reporting and submittal); individual facilities may take more or less time than what is noted here.

Table 1a-Time estimates for Public Facility Field Inspections and Reporting

In Office Prep Time		
Maintenance Responsibility		**Prep Time Estimate** (per facility)
Public Facilities		10 min.
Field Time		
Facility Type		**Field Time Estimate** (person-hours)[1]
AS	Amended Soil	1.5
BR	Bioretention Area	2.0
CS	Cistern	1.5
FTW	Floating Treatment Wetland	2.0
DP	Regional Dry Pond	3.5
	Non-Regional Dry Pond	3.5
GR	Green Roof	2.0
MB	Manufactured BMP	2.5
OS	Open Space Areas	2.0
PL	Parking Lot Detention	2.0
PP	Permeable Pavement	2.0
RF	Reforestation	2.0
RT	Rooftop Detention	3.0
SF	Sand Filter	2.5
TF	Tree Filter	2.0
TR	Infiltration Trench	2.0
UG	Underground Storage/Detention	2.5
VS	Vegetated Swale	2.0
WL	Constructed Wetland	3.0
WP	Wet Pond	4.0
WS	Wet Swales	2.0
Reporting and Submittal Time		
Maintenance Responsibility		**Reporting and Submittal Time Estimate** (per facility)[2]
Public Facilities		0.5 - 1 hr.

[1] This time includes time to perform the inspection plus 0.5 hours per facility to QC the actual inspection results.

[2] For ponds, the one hour includes 0.5 hours to develop the report and 0.5 hours to QC the report; for non-ponds, the 0.5 hours includes 0.25 hours to develop the report and 0.25 hours to QC the report.

Table 1b-Time estimates for Private Facility Field Inspections and Reporting

In Office Prep Time		
Maintenance Responsibility		**Prep Time Estimate** (per facility)
Private Facilities		10 min.
Field Time		
Facility Type		**Field Time Estimate** (person-hours)[1]
BR	Bioretention Area	2.5
CS	Cistern	2.0
DP	Regional Dry Pond	3.0
	Non-Regional Dry Pond	3.0
GR	Green Roof	2.5
MB	Manufactured BMP	3.0
PL	Parking Lot	2.5
PP	Permeable Pavement	2.5
RF	Reforestation	2.5
RT	Rooftop	3.5
SF	Sand Filter	3.0
TF	Tree Filter	2.5
TR	Infiltration Trench	2.5
UG	Underground Detention	3.0
VF	Vegetated Filter Strip	2.5
VS	Vegetated Swale	2.5
WL	Constructed Wetland	3.5
WP	Wet Pond	3.5
Reporting and Submittal Time		
Maintenance Responsibility		**Reporting and Submittal Time Estimate** (per facility)[2]
Private Facilities		3 hours

[1] This time includes time to perform the inspection plus 0.5 hours per facility to QC the actual inspection results.

[2] The three hours includes 2.5 hours to develop the report and 0.5 hour to QC the report. Includes creating the envelope and postal tracking material.

2 Field Equipment and Documentation

The following tables outline recommended field equipment, safety related equipment, and field documentation necessary for conducting inspections of facilities. Though not intended to be all-inclusive or limiting, these lists may be used as a reference when assembling an inspection 'field kit'.

The following field equipment is recommended for conducting inspections of facilities:

Table 2-General Field Equipment

Field Equipment	Qty / Team	Purpose
Digital camera (with flash and timer)	1	Document facility conditions, potential maintenance issues and the inspection process
Extra batteries for digital camera	2+ sets	Replacement for depleted batteries
Telescoping monopole (6')	1	Inspect interior of underground facilities, riser structures and other stormwater structures
Painter's pole with camera adapter (16')	1	Inspect interior of deep underground facilities and stormwater structures, as well as large riser structures
Manhole hook and/or magnetic manhole puller	1	Remove manhole covers
Crowbar (prybar)	1	Assist in removing large manhole covers
3 lb. hammer	1	Loosen stuck manhole covers
Bilco door key	1	Open Bilco access doors
Flat Head screwdriver	1	Remove Bilco door screws
Socket set with ratchet	1	Remove non-standard Bilco door screws and bolts on access doors
Channel Locks (Large)	1	Open observation / cleanout wells, and assists in opening Bilco access doors
Fiberglass probing rod	1	Determine the presence (or absence) of subsurface gravel, especially for soil-topped trenches
Tape measure (25')	1	Confirm facility dimensions (overall size, orifice/pipe diameters, etc.) and measure areas of maintenance concern (erosion, bare spots)
Open reel tape measure (100')	1	
Flash light with extra batteries	1	Illuminate interior of underground facilities and stormwater structures
Machete (optional)	1	Clear vegetation to permit facility access
Ladder (for some rooftops)	1	Reaching rooftops externally
Writing utensils (pens suggested)	2-3	Record facility conditions, potential maintenance issues and document inspection process
Clipboard	1	
Flagging tape	2 rolls	Clearly identify maintenance issues and areas of concern (bare spots, erosion, potential hazards, etc.)
Survey flags	50	
Wood survey stakes	20	
GPS navigation device, or GPS-enabled smartphone	1	Assist with navigation and the location of facilities

The safety equipment contained in Table 3 below is recommended for conducting inspections of facilities. Additional information on safety equipment and procedures can be found in Section 3 of this document.

Table 3-Important Safety Equipment

Safety Equipment	Qty / Team	Purpose
Hard hats	1 / person	To be used when inspecting facilities in the vicinity of light construction activity, utility work or tree trimming
Steel toe boots	1 pair / person	Protect feet and toes from manhole lids; also slips, trips and falls
Class 3 high-visibility vests	1 / person	Visibility in high-traffic areas
Work gloves (optional)	1 pair / person	Protect hands from cuts/abrasions when opening manholes and other access doors, as well as insects
Traffic cones	2+	Cordon off areas surrounding facilities where vehicular traffic is a concern (i.e. parking lots, travel ways)
Insect repellent	1	Protect against ticks, mosquitos, flies and other insects encountered during field inspections
Tick-repellent clothing		
Sunscreen	1	Protect against sunburn
First aid kit	1	Emergency situations and addressing minor injuries
Fairfax County emergency services contact info	1	Contact information for use in the event of an emergency
Cellphone	1	Calling contractor office, MSMD, or emergency services

The documentation contained in Table 4 and Table 5 below outline the general and facility specific documents that should also be carried at all times while in the field.

Table 4-General Documentation

General Documentation	Qty / Team	Purpose
Fairfax County identification	1+	Identify inspectors when engaging property owners/managers and other citizens
Fairfax County vehicle, or 'Stormwater Inspection' vehicle magnet	1	Identify vehicles used for field inspections
Fairfax County MSMD business cards	50	Provide MSMD contact information to property owners/managers and other citizens upon request
Contractor 'Field Inspector' business cards (if applicable)	50	Provide contractor contact information to property owners/managers and other citizens upon request (if applicable)
Fairfax County MSMD pamphlets	50	Provide MSMD program information to property owners/managers and other citizens upon request
Generic pre-inspection letter (for privately-maintained facilities)	20	Inform property owners and tenants of our purposes on the site. The facility-specific pre-inspection letter should also be available in the inspection folder.
Blank forms for “Non-Entry Confined Space Photographic Assessment”	50	Document atmospheric testing at confined spaces. Use 1 form for each facility where confined spaces are opened, and remember **not** to bodily enter the confined space.

Observations made during field inspections are recorded using standard inspection forms developed for each type of facility. In order to conduct comprehensive facility inspections and complete these forms, it may be necessary to utilize documentation (including approved plan sets and previous inspection reports) obtained during the pre-inspection phase of the process outlined in the Pre-Inspection Research guide. Hard copy documentation obtained in Pre-Inspection Research should accompany inspection teams on all site visits.

Table 5-Facility-Specific Documentation

Facility Specific Documentation	Qty / team	Purpose
Inspection folder	1 / facility	Prepared during Phase 1 for privately-maintained facilities, or following the steps below for publicly-maintained facilities
Facility inspection route map	1	Provide turn-by-turn directions to facilities scheduled for inspection each day

2.1 Public Facility Inspection Folders

Hard copy inspection folders for public facilities are for short-term use only, holding only the documentation needed by or generated by the inspector. Legal-size manila folders are recommended, in order to fit the legal-size inspection forms, with labels containing both site ID and facility ID. The following documents should be included in the hard copy inspection folders prior to going out for inspection:

- **Inspector-Plans.pdf and GIS.pdf.** These documents may be found in the Fixed_References folder for each site. Both documents are generated as part of the public facility pre-inspection and should be available for every site. If they are not available, a GIS print may be made from ArcGIS for inspection purposes only, and individual plan sheets may be selected for printing from the plan scans that are available.
- Infor-EAM™ **Database Print.** A print of the facility's information from Infor-EAM™, including from the Infor-EAM™ Comments tab.
- **Inspection Form and Photo Log.** Inspection form and photo log templates may be found on the county server, *J:\STW\SWM_Branch_Assets\Main\Private\Templates\Inspection Forms*. There is a choice whether to use the linked inspection forms or copy the templates to a different location and process them as a batch. Please note that Infor-EAM™ comments, which can be very helpful, are not automatically shown on the linked inspection form.

For sites with multiple facilities, documents shared by those multiple facilities only need to be printed once and stored in any one of the facility folders taken out to the field that day.

3 Safety, Training, and Public Relations

Safety, proper training and good public relations are vital parts of stormwater fieldwork, including the inspections. Although they may not appear to contribute directly to the final report and submittal, these three items help ensure the safety of the inspectors and the cooperation of the public.

3.1 Safety

Field teams should be conscious of health and safety policies and procedures, and mindful of the potential hazards associated with the inspection of facilities. Field teams must consist of at least two people, for safety reasons. While this section offers a summary of the principal safety hazards that may be encountered in the field, other hazards do exist that are not listed here. In all cases inspectors should use common sense and strive to keep themselves and their partner(s) out of harm's way.

3.2 Confined Spaces

Confined spaces should not be physically entered for these inspections. The inspectors should not enter any manholes, underground chambers, or pipes as part of this work, nor allow any part of their bodies to enter. Any confined space entry that may be required shall be performed by properly qualified and permitted county staff or contractor. Short training sessions are available online to help inspectors identify and avoid entering confined spaces; one example is at https://www.hazmatschool.com/osha-confined-space-safety-training-1289/.

Photographs may be taken in confined spaces by attaching the camera to a standard monopole or longer painter's pole with camera attachment .

3.3 Environmental Factors

During field activities inspectors may encounter the following environmental factors that pose health and safety issues:

Ticks: Ticks can transmit several serious illnesses such as Lyme disease. Tick-repellent spray and/or clothing is strongly recommended. Inspectors should also regularly check themselves for ticks and remove any that are found. Information is available online on tick identification, removal, and related disease symptoms and treatment, see http://www.fairfaxcounty.gov/hd/westnile/lyme-disease.htm.

Spiders: Black widow and other spiders have been found inside several facilities located throughout Fairfax County, including inside Bilco doors near the handles. Extra care, and the use of gloves and tools, should be used during the opening of manholes and Bilco doors.

Insects: Mosquitos and other insects may be encountered during field activities. Insect repellent is recommended to help prevent West Nile Virus.

Snakes and other Wild Animals: Copperheads and other species of poisonous snakes live in the wild in this area. Inspectors should keep an eye out during field activities and avoid contact with snakes and all other wild animals and seek medical attention in the case of any bites. Some wild mammals may carry rabies; information about rabies may be found at https://www.fairfaxcounty.gov/health/rabies.

Unleashed Pets: Always check for dogs and other pets before entering fenced yards. If pets are present, ask the owner to remove or leash the animal and do not enter until pets are secure. Use extra care upon entering and exiting properties to ensure that you do not leave a gate open or allow pets to escape.

Poison Ivy: Some people are highly allergic to poison ivy, which is a common weed found in Fairfax County. Any inspector who is allergic should know how to identify the plant and avoid contact with it.

3.4 Traffic Hazards

All team members must wear high-visibility (Class 3) vests at all times during inspections.

Many facilities are located in and under parking lots or near roadways. Cones, and the inspection vehicle itself, may be used to keep traffic away from parking lot manholes and Bilco doors. Inspectors must consider parking lot traffic patterns before setting up the cones, and avoid blocking the main drive aisles if traffic has no other way to go. Local shop managers can be helpful in advising on traffic patterns, sometimes suggesting coming in the early morning when the lot is less busy. When inspecting facilities near parking lots and roads, at least one of the team members should be on the lookout and ready to warn the others about traffic hazards. Facility inspections should not involve crossing multiple lanes of traffic, especially during high-traffic times and main arteries. If a facility is located in a dangerous area, consult with your supervisor and with MSMD staff for special instruction before proceeding with a possibly-hazardous inspection.

3.5 Active Construction Zones

If the facility is located in an active construction zone, take a couple of overall photos and call your supervisor before proceeding. Most likely the site is under bond and will not be within the jurisdiction of MSMD until the project is completed and the bond is released.

3.6 Slip / Trip / Fall Hazards

Many facilities require inspectors to do multiple activities at once and traverse difficult terrain. Inspectors must be aware of their surroundings and the terrain. Step carefully, watching out for holes, steep slopes, uneven terrain, and other fall and trip hazards while performing inspections.

3.7 Lifting Technique

Many facilities require inspectors to remove manhole covers, open Bilco Doors, and lift other heavy items. All lifting of these items must be done with the legs, not the back. In addition, the use of a manhole hook and other tools should be considered to assist in the lifting process. It is important to remember to not place fingers or toes under the manhole lid or other heavy items at any time during the inspection.

3.8 Heat / Cold Stress

Stormwater inspections occur at all times throughout the year. Inspectors should be aware of the weather conditions and wear the proper work attire for the weather, taking into consideration the potential for sudden changes. Extreme heat or cold is dangerous; inspectors should limit the amount of time exposed to extreme temperatures, be sure to stay hydrated, and monitor their physical condition and that of their teammate(s).

3.9 Training

State regulations require at least one of the inspectors on an inspection team to be certified by the Virginia Department of Environmental Quality (DEQ) as a Stormwater Management Inspector. Taking the Virginia DEQ Inspector for Stormwater Management course is required to gain the eventual certification. MSMD annually offers its own inspection training geared specifically to this program.

3.10 Public Relations

Although not usually a safety hazard, public relations are extremely important. **Inspectors must remember that while in the field they are representatives of the County; courtesy and politeness are required.**

Upon arrival at each facility, the inspectors should check in with the owner or other on-site personnel whenever feasible and present their County provided credentials. Copies of the facility documents may be left with facility owners or managers if requested. If no one is available, leave business cards and a copy of the generic pre-inspection letter at the door and proceed with the inspection. **Note: For facilities with Private Maintenance Agreements (PMA), the inspectors are simply providing the owner/operator with notification of the inspection, not necessarily asking permission to perform the inspection. For facilities without a PMA or to access areas behind a "No Trespassing" sign, the inspection team shall gain permission to perform an inspection of the facility from a responsible person.** Take note of the person who gave permission to access. In both cases, if the owner objects or threatens the inspection team, leave the property and report the problem to your supervisor. The County has other ways of gaining access to the site; there is no need for the inspectors to put themselves at risk trying to force the issue. If assistance from a non-threatening owner is needed to access the

facility, for example with moving equipment that may be parked over the access doors, be polite and courteous in requesting that assistance.

4 Inspection Procedure

Upon arriving at a given site, the field team should inspect each facility following the procedure outlined below:

1. Read the facility comments included in the Infor-EAM™ printout and provided in the inspection folder. The comments may include special site-specific notes regarding location of the facility on the property, access, ownership and/or maintenance notes.
2. Check in with the property owner, manager, or tenant.
    a. Introduce yourselves as County representatives, inform them of the inspection and explain the purpose of the visit. Ask for permission to perform the inspection and take note of the person allowing access. If requested, inspectors should provide a copy of the pre-inspection letter and business cards with MSMD contact information, as well as contractor business cards if applicable.
    b. **Fairfax County Contractor identification should be plainly displayed at all times during the inspection.** All inspection equipment (e.g., manhole hook, crowbar, etc.) should remain in the vehicle until after interaction with property owners, property managers, residents, or security. Inspection teams should be mindful of interaction with the general public and should be polite, courteous and professional at all times.
    c. If there is objection from property owners, property managers, residents or security, inspectors should leave the property, record details of the interaction and report the problem to their supervisor and MSMD.
    d. Check-in is required for school sites, child care centers, and assisted living communities. Check-out may also be required, depending on the site.
        i. Fairfax County Public Schools (FCPS) requires **each** inspector to enter through Door #1 and proceed to the main office. There, they should request the "Maintenance Log" and sign in with proper ID. Inspection staff may need the assistance of FCPS staff to unlock gates or other points of entry. If so, they should request their assistance at that time. Prior to leaving the school, inspectors should proceed back to the main office to sign out of the Maintenance Log.
    e. Always knock on the door or ring the doorbell for private residential lot inspections. If no one is available, inspectors should leave the generic pre-inspection letter and business cards at the door and proceed with the inspection only if a PMA exists and there is not a posted "No Trespassing" sign visible.
    f. High-security sites may require advance notification and background checks. Those sites may also prohibit photography at the site; in such cases they usually provide their own photographer and send the pictures to the inspectors digitally after the inspection. Special site security arrangements should be noted in the Infor-EAM™ access comments.
    g. For privately-maintained facilities, attempt to confirm the mailing address with the owner or property manager, either from the Infor-EAM™ printout or the signed pre-inspection letter. Address verification is especially important in cases when the mailing address was not successfully identified during the pre-inspection research.
3. Visually locate the facility, checking for any hazards or conditions that prohibit full access to the facility. Use the plan sheets and aerial imagery in the inspection folder to help identify the facility.
    a. Check for overall facility accessibility.
        i. If the facility is inaccessible due to overgrown vegetation, locked gates, parked cars, or is otherwise unable to be reached, photograph the obstacles and record them on the inspection form.
        ii. The owner or other on-site personnel, if available, may be able to help open gates or move parked cars.
    b. Survey the surrounding area for any potential hazards, including those mentioned in Section 3 - Safety.
        i. Proceed with the inspection to the extent that it is safe to do so. If conditions exist such that the team is not confident an inspection can be conducted without risk of injury, fully document and photograph those conditions and end the inspection.

   ii. Any condition that presents an active hazard to the public should be immediately communicated to MSMD so that the hazard may be remedied as soon as practicable. Examples include missing manhole covers and dams that appear to be actively failing. In addition, the inspection team should mark off the area as best as possible using stakes and flagging to discourage entry by the public.
   iii. If the facility is located in an active construction zone, take a couple of overall photos and then call your supervisor before proceeding. Construction activities usually lead to research as discussed in Anomalies section of the Pre-Inspection Research SOP.
   iv. Potentially hazardous conditions, even if they do not prevent inspection at this time, should be added either to the Access Comments field or to the Comments tab in Infor-EAM™.
   c. Fully document any and all conditions that prevent full inspection of the facility.
4. Complete required documentation
   a. Document inspectors' last names, inspection date, and weather information on the form.
   b. Complete a rough (not-to-scale, but legible) sketch that identifies the pertinent components of the facility.
   c. Photograph the facility sign (for publicly-maintained facilities) or the inspection form. Write that photo number down as the first photo in the photo log; it serves as an easy way to sort photos by facility later.
5. Continue taking photos of the facility and completing the Photo Log, as discussed further in the Section 4.2.
6. Note and score any maintenance items on the inspection form.
7. Take any measurements required by the inspection form, such as inflow pipe diameters or the sizes of detention device openings. These required measurements vary by facility type; follow what is required for each particular form.
8. For public facilities, take any additional measurements needed to generate the work order, as specified in the Field Measurements and Work Order Preparation document.
9. Make sure all documents are complete before moving on to the next facility.

4.1 Inspection Form

MSMD has created an inspection form for each facility type, with unique sections and maintenance items. A sample inspection form for bioretention is included in Section 7 of this document. Inspection form templates for each facility type can be found at *J:\STW\SWM_Branch_Assets\Main\Private\Templates\Inspection Forms.*

All inspection forms include the following sections:

Header

The form Header holds the site ID, facility ID, plan name, address, and other identifying information. Inspectors must add their last name, certification information and the inspection date.

Facility Functionality

The Facility Functionality rating scores the facility as a whole as either functional (with or without maintenance required, as indicated by the score totals) or as non-functional.

Score Totals

The Score Total boxes are for counting how many maintenance items were given each score. The Score Totals are filled out last, after quality control of the inspection has been performed in the office.

Notes / Specifications

The Notes / Specifications at the top of the form may be filled out in the office before the inspection to include information from the Infor-EAM™ Comments tab or any other information identified as valuable for the inspection team.

Signs

The Signs sections is intended for publicly-maintained facilities, especially ponds, which should have a warning sign and a facility sign identifying the facility ID, watershed, and phone number for the public to call with questions or complaints. This section may be skipped or marked N/A for privately-maintained facilities.

Weather Conditions

Weather Conditions, listed in a section near the top of the form, are important for judging whether water ponding within the facility is indicative of a blockage or other problem, or is just the temporary result of recent rainfall.

Maintenance Items

Facility-specific Maintenance Items, organized into sections based on location within that type of facility. Maintenance item scores range from **1** (①, severe, high priority) to **3** (③, relatively minor, lower priority) with a ⊙ being used for items that do not currently need maintenance, i.e. "Continue Routine Maintenance". Some maintenance items may be only ① or ⊙; for example either the well cap is missing (①) or it is not (⊙).

Other

Non-Location-Specific "Other" items include problems that may be noted with Encroachments, Facility Modifications, Mosquito Habitat, or any Evidence of a suspect flow that may indicate a Possible Illicit Discharge. Information is included on the form to remind the inspectors who to **contact if a possible illicit discharge is observed**.

Inspector Comments

Inspector Comments may be added at the bottom of the sheet or for specific maintenance items. ***More text is better than not enough.*** Anything that may be questioned later should be clarified further on the inspection form. Space for writing is available for all maintenance items, and its use is encouraged.

General Notes Regarding Form Completion:

It should be noted that there will be times that non-standard maintenance problems that don't fit elsewhere, general access notes, information provided by the owner while on-site, and anything else of interest should be written in the generic Inspector Comments box at the bottom of the form.

Not all form sections apply to all facilities of that type; if a section does not apply, then you may write "N/A" in the comments for that section. Otherwise every maintenance item should be marked either with a score number or with the ⊙.

Inflows, roof drains, and scuppers have **multiple columns** for their maintenance items. Because each facility is likely to have more than one inflow, or for a rooftop more than one roof drain, these columns allow for the individual components to be scored separately. Space is also provided for each inflow's pipe size and type, to help identify the inflow from just the inspection form without needing an orientation sketch.

4.2 Photo Log

A photo log should be completed in the field for each facility. Photo numbers from the camera and corresponding to the file names for the JPG photos are to be written on the left side of the photo log. In addition, a caption or description of each photo; location of the photo; direction the camera is pointing (North (N), South (S), East (E), West (W), upstream (U/S), downstream (D/S), toward the orifice, etc.); and any maintenance problems visible in that photo should be documented. A sketch of the facility should be drawn in the area at the bottom of the photo log. Structures in the sketch should be labeled based on the structure numbers shown on the plans, if that can be done

conveniently, or given other identifying labels by the inspectors. For example, the inspectors may label Roof Drain 1 (RD1), Manhole 2 (MH2), Bilco 3, and Inflow 4 on the sketch. Structure labeling by function (e.g., control structure, outfall, riser, etc.) is also helpful. Overland inflows should also be included in the sketch, as non-facility-specific maintenance items. These may include an animal hole on the dam embankment or sediment on only part of the pond floor; items whose location is important but not confined to specific structure point.

General guidelines, for all facility types…

- Inspectors should take an 'overall' photo of the facility. This photo should show the extent of the facility in perspective to the residence(s) or building(s) located on the property. For large facilities, taking occasional overall photos between closer photos can help orient the owner when they later read the report. Another "overall" photo may be taken last, looking in the opposite direction as the initial overall photo.
- Inspect all facility components. Following the sections on the inspection form may be helpful to ensure that all components are reviewed.
- Each deficiency noted on the inspection form should be documented by at least one supporting photo.
- Any access problems, even if they are not considered maintenance deficiencies, also need to be documented by one or more photos to adequately show the problem.
- For complex facilities, consider labeling photo numbers and the direction the photo was taken in the facility sketch. Photo log captions should describe any identified issues, any problem(s) with the structure, and the direction/orientation of the photo, where appropriate.

Following are lists of the items that shall be photographed at each type of facility. The lists should serve as a starting point and are not intended to be all-inclusive as additional photos may be useful in many cases.

BR: Bioretention

- Access.
- Overall view(s), preferably from multiple vantage points.
- Close-up of mulch condition.
- Count the plants and compare to the landscape plan.
- Check the ponding depth and area; photograph the overflow berm.
- Observation well(s) or cleanout(s): overall and looking inside. (Note if the cap cannot be removed.)
- All inflows.
- Control structure / outfall structure, if specified in the plans.

DP / WP: Ponds

- Access.
- Overall view(s), preferably from multiple vantage points.
- Riser / Control structure: overall, orifice and lower trash rack close-ups, looking down into the structure, U/S toward the low-flow orifice, and D/S along the PSP, as well as any other problems noted directly around the structure.
- Dam Embankment: overall views of the entire dam, and closer photos of any problems such as erosion or animal holes.
- Emergency Spillway.
- Outfall: as seen from the top of the dam embankment, structure exterior, inside the outfall looking along the PSP, and D/S from the outfall. Get a close-up of any undermining problems.
- Pond trickle ditch and any sediment build-up on the pond floor.
- All inflows, both piped and overland. Take an overall photo of each inflow looking U/S, inside the pipe, and D/S.

MB: Manufactured BMPs

Manufactured BMP inspections will vary depending on the exact facility type. Refer to the plans or to information from the manufacturer for more details about each specific facility.

- Access.
- Overall view(s).
- Open any other available access ports to the underground chamber or detention pipes: photograph overall, down, U/S, D/S.
- Outfall structure: overall, down, U/S, D/S.

PP: Permeable Pavement

- Access.
- Overall view(s).
- Photograph the infiltration test infiltration (5-gallon bucket of water poured over facility).
- Any problems noted.

PL: Parking Lot Detention

- Access.
- Overall view(s).
- Control structure overall.
- Control structure close-up, emphasizing the control orifice, weir, or other flow control device.
- Looking inside the control structure and along all attached underground pipes.
- Outfall structure: overall, down, U/S, D/S.

RT: Rooftop Detention

- Access.
- Overall view(s).
- Each roof drain. While overall and down-the-pipe photos may occasionally be useful for roof drains, the most important photo for each roof drain is a close-up of the detention device. The picture is clearer if the debris cage can be temporarily removed.
- Each scupper, viewed from near the roof surface to see scupper height off the surface. A tape measure may be included in these photos.

SF: Sand Filters

- Access.
- Overall view(s).
- Open any available access ports: photograph overall, down, U/S, D/S.
    - Note the chamber where each photo is taken: sedimentation chamber, filter chamber, or clearwell.
- Dewatering drain in the clearwell chamber; it should be closed.
- Outfall structure: overall, down, U/S, D/S.

TF: Tree Filters

- Access.
- Overall view(s).
- Inside the throat. Trash and debris should be clearly documented on the inspection form; they do not always show up well in the photos.
- Inside the top grate.

- Overflow structure / outfall: overall, down, U/S, D/S.

TR: Trenches

This list applies to most infiltration trench facilities. A trench facility with larger perforated pipes and no surface gravel may be inspected as an UG (Underground Detention) facility, discussed next. Such underground infiltration trenches are sometimes abbreviated to as "TRUG" facilities in County documentation, as they combine aspects of both underground detention and gravel trench infiltration. For surface trenches and small on-site residential trenches:

- Access.
- Overall view(s).
- Any surface gravel; scratch or bore to check for sediment build-up below the top layer of gravel.
- Test for gravel below grassed surfaces using the probing rod; photograph this and note the depth at which gravel was detected.
- Observation well(s) or cleanout(s): overall and looking inside. (Note if the cap cannot be removed.)

- For trenches on residential lots; photograph all easily-accessible roof downspouts. Often the trench is designed to receive flow underground through perforated extensions of the roof downspouts; if the downspouts exit on the ground surface then the trench may not be functioning properly. Compare each facility to its individual design plans.
- Control structure and/or outfall structure: photograph fully if specified on plans.

UG: Underground Detention

- Access.
- Overall view(s).
- Control structure, both the U/S and D/S sides. Get photos overall, looking down, upstream, and downstream, from both sides of the weir wall, if one exists. Especially attempt a close-up of the low-flow orifice, usually at the base of the weir wall.
- Open any other available access ports to the underground chamber or detention pipes: photograph overall, down, U/S, D/S.
- Outfall structure: overall, down, U/S, D/S.

VS: Vegetated Swales

- Access.
- Overall view(s).
- Swale, looking U/S and D/S.
- Check dams, as specified on plans.
- Curb cuts or other inflows.
- Plantings.
- Outfall and control structures, if specified.

WL: Constructed Wetlands

- All items listed for ponds.
- Photograph and note wetland vegetation as compared to the facility planting plan and detail enhanced maintenance features (micropools, forebays, etc.) within the pond floor.

4.3 Possible Illicit Discharges / Public Hazards

While in the field inspectors may notice indication of possible illicit discharges. Illicit discharges are flows that look or smell unusual, oil or grease stains, or human activities such as dumping. If the inspectors notice something indicative of an illicit discharge, or something otherwise unusual that they think warrants special investigation, then they should use the online reporting form (https://fairfaxcounty-639180.workflowcloud.com/forms/fc87b0ec-aaa6-4a34-b06d-a88398672eb2) to notify the Stormwater Planning Division. They may also be notified via email at DPWESSTWStormwaterPollution@fairfaxcounty.gov from the field to report what they see.

The inspectors may also notice conditions that represent public safety hazards: actively failing dam embankments, fall hazards, or missing/loose manhole covers. **Any condition that presents an active hazard to the public should be immediately phoned in to MSMD.** The area should also be marked off with stakes and flagging, if possible.

4.4 Field Documentation

The inspector should always plan to spend a few minutes per facility at the end of the day to review documentation for possible omissions.

At the completion of each field day the inspectors should download and process the photos for all facilities:

1. Download the photos from the camera to your computer.
2. Rotate and lighten the photos as needed.
    a. All photos should appear upright on the computer screen.
    b. Proper lightening using photo-editing software can bring out a lot of details that may not otherwise be visible in under-lit underground photos.
3. Sort the photos by site and facility ID.

Then the inspectors should check and complete the documentation for each facility as follows:

1. Go through the photos for each facility, comparing them to the photo log.
    a. Delete blank or duplicate photos, updating the photo log as needed.
    b. Look for deficiencies that were not visible or missed in the field, such as spalling on the interior of structures or pipe separation on the inside of a pipe, scoring them on the inspection form accordingly.
2. Review all marked inspection items, checking that the photo numbers on the inspection form are correct.
3. Count the number of deficiencies scored “1”, “2”, and “3” and fill in the appropriate space(s) at the top of the inspection form.
4. Score the facility as a whole as “Functional” or “Non-Functional.”

5 Public Report Submittal

The public facility report is intended to provide the MSMD with an understanding of maintenance items for each facility. The following submittal items are required for publicly owned and operated facility inspections:

- Electronic document submittal on the J:\ drive.
- Infor-EAM™ updates.
- Work order scope of work narrative.

Refer to the Field Measurements and Work Order Preparation document for more detailed information on developing and delivering the work order narrative. The other public submittal components are detailed below. No hardcopy submittal is required for regular inspections of publicly-maintained facilities.

5.1 Public Facility Electronic documents

The electronic documents, listed below, should be grouped into a folder named by the facility ID and the date. For example, the inspection for 1492DP from 4/15/2013 would be filed in a folder named 1492DP_2013-04-15_Inspection. The folder will *eventually* be saved under the Photos & Inspections folder for that facility, as shown below in Figure 1, but for submittal should be filed in the photo dropbox, *J:\STW\SWM_Branch_Assets\Main\!PublicInspections_DropBox*.

- Scanned inspection form.
- Scanned photo log.
- JPG photo files.

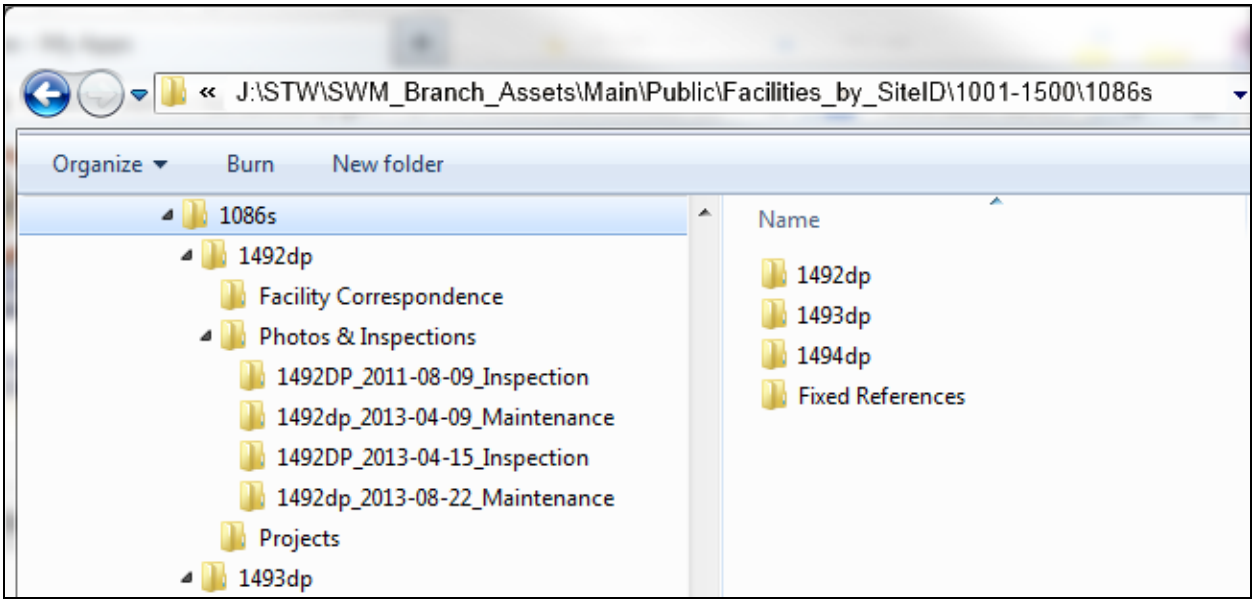


Figure 1-Illustration of folder naming conventions for public inspections, using facility 1086S / 1492DP as an example.

5.2 EAM updates

Update the following fields in Infor-EAM™ as detailed below for each inspected facility:

- Last Inspection Date: date of the inspection.
- Previous Inspection: cut the value that was in the Last Inspection Date field and paste here.
- Inspection Team: county inspectors enter their initials; contractors enter their company's initials.

Occasionally the Infor-EAM™ Comments tab or the Access Comments field may need to be updated as well, based on special conditions that the inspectors find in the field.

6 Private Inspection Reporting

Report development is a lengthier process for the privately owned and operated facilities than for the public facilities. The private facility report is intended to make the maintenance issues clearly understandable to a layperson, the facility owner, and at the same time adequately convey to that person that maintenance of that facility is required. The most important parts of the private inspection report are the condition assessment report (CAR) and the related photos with captions, as these are where the inspection results are directly shown. Other documents will be attached later to fill out the report; the entire completed bundle must be consistent in conveying the facility's maintenance needs to the owner.

6.1 Photos, with Orientation Sketch and Captions

A photo log for each facility inspected must be prepared and submitted with the reports and includes a facility sketch and applicable photos as described above in Section 4.2 - 4.2 Photo **LOG**. This photo log is the same for both public and private inspections. However, the photo log for private inspections is not sent to the private facility owner. Instead, the photos with their captions are presented in a clearly readable format that will help guide the owner to a clear understanding of the facility layout and maintenance items.

A sketch and photos taken of the facility are inserted into a Microsoft PowerPoint template which is found at *J:\STW\SWM_Branch_Assets\Main\Private\Templates\Standard Photos Template with sketch.ppt.* Copy the template from the location above and paste it into the facility specific folder and edit it there; **do not make changes directly to the template**. The final document should be named with the naming convention: SiteID_FacilityID_PHOTOS.ppt.

The template is formatted to allow for a facility sketch on the first page and four (4) photos to fit on each subsequent page with a caption for each photo as depicted below in Figure 0- and Figure 3-. Upon completing this activity the following should be modified for each facility:

- Update the header on each slide to show the correct site ID, facility ID, and inspection date (using Find / Replace All can help with ensuring that all headers throughout the document are updated).
- Create or insert an Orientation Sketch of the facility on the first page of the PowerPoint.
- Add a caption to each photo providing a complete description of each photograph's subject, the general direction in which the photo was taken, and a description of any observed deficiencies. Deficiencies may be circled or otherwise highlighted on the photos if they are not easily visible to a layperson.

As provided above, the first page of the PowerPoint template is reserved for the facility sketch. The sketch must be easily-read, with enough surrounding details (e.g., buildings, roads, parking lots) to orient the reader. All facility components referred to in the later photo captions must be so labeled on the sketch. The facility itself must also be clearly outlined and labeled. The sketch format is flexible; popular options range from using the sketch tools within PowerPoint to using GIS points and labels with aerial Pictometry imagery as the background. For some small facilities you may even use one of the inspection overall photos, if it shows the whole facility and the facility components are easily visible.

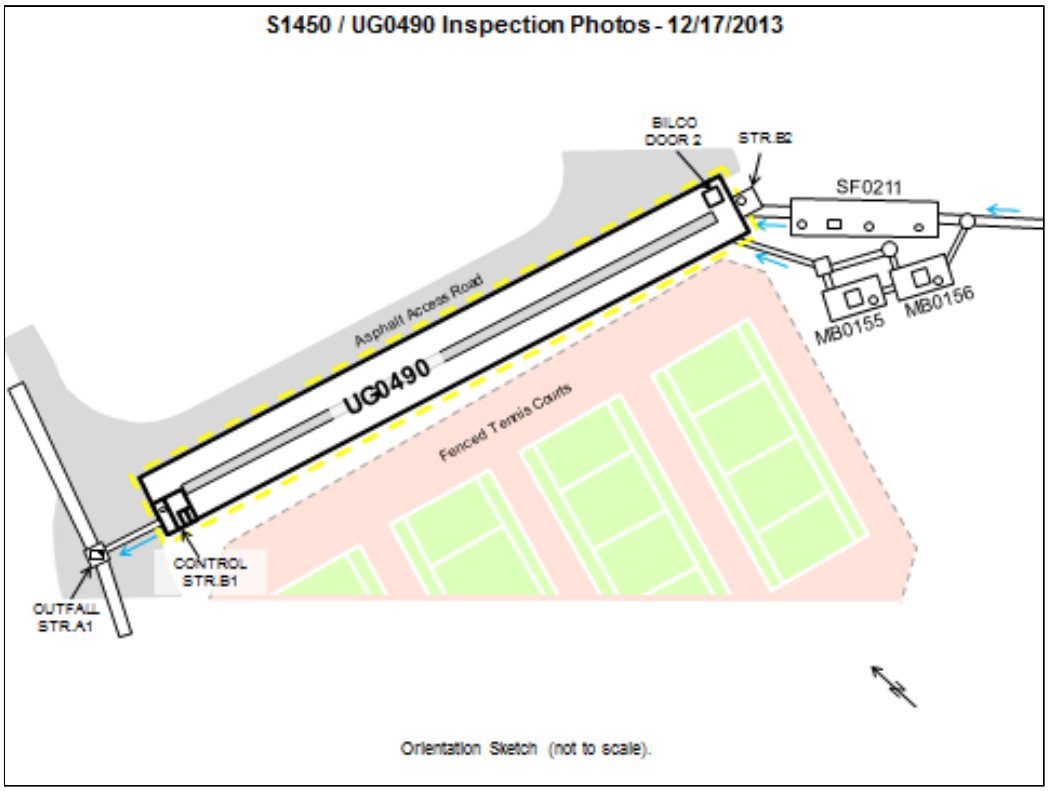


Figure 0-Orientation sketch example generated with the PowerPoint sketch tools.

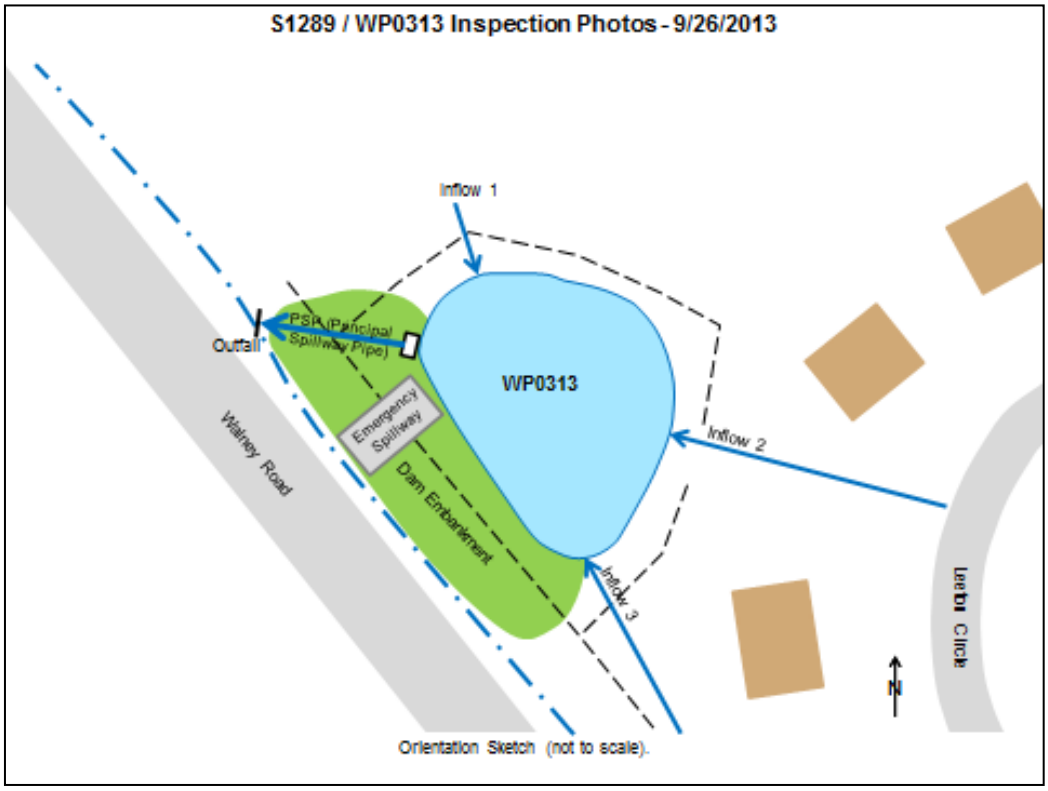


Figure 3-Orientation sketch example generated with the PowerPoint sketch tools.

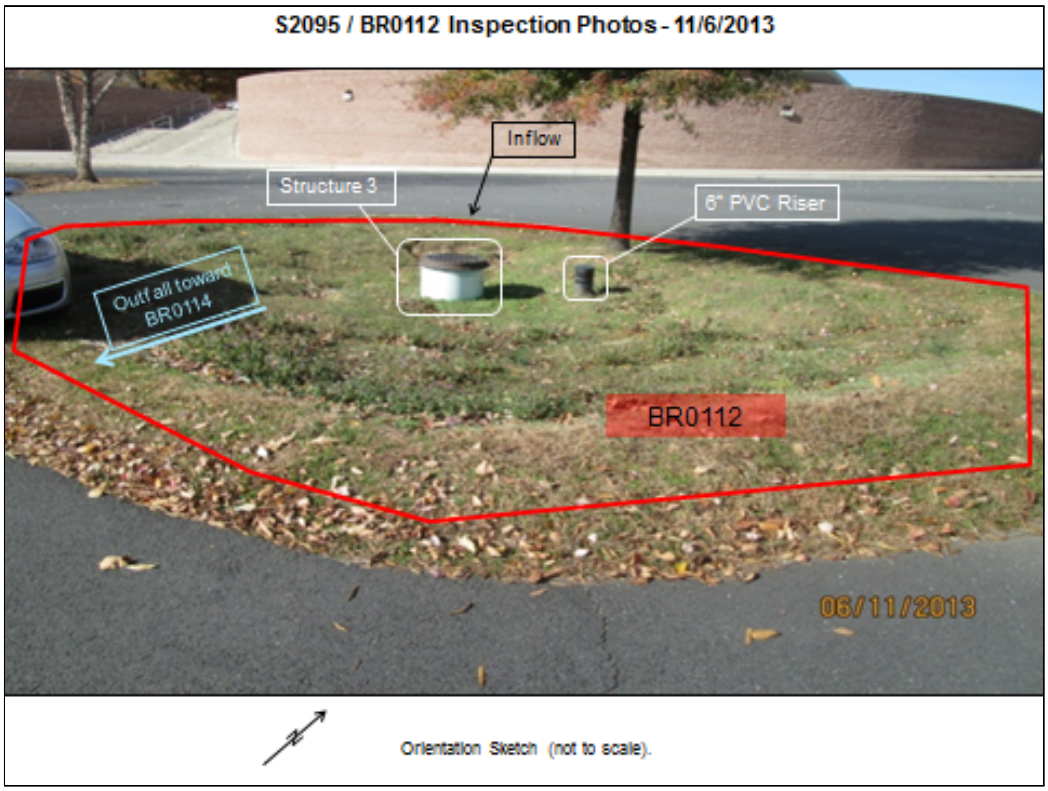


Figure 4-Orientation sketch example using an overall photo of the facility.

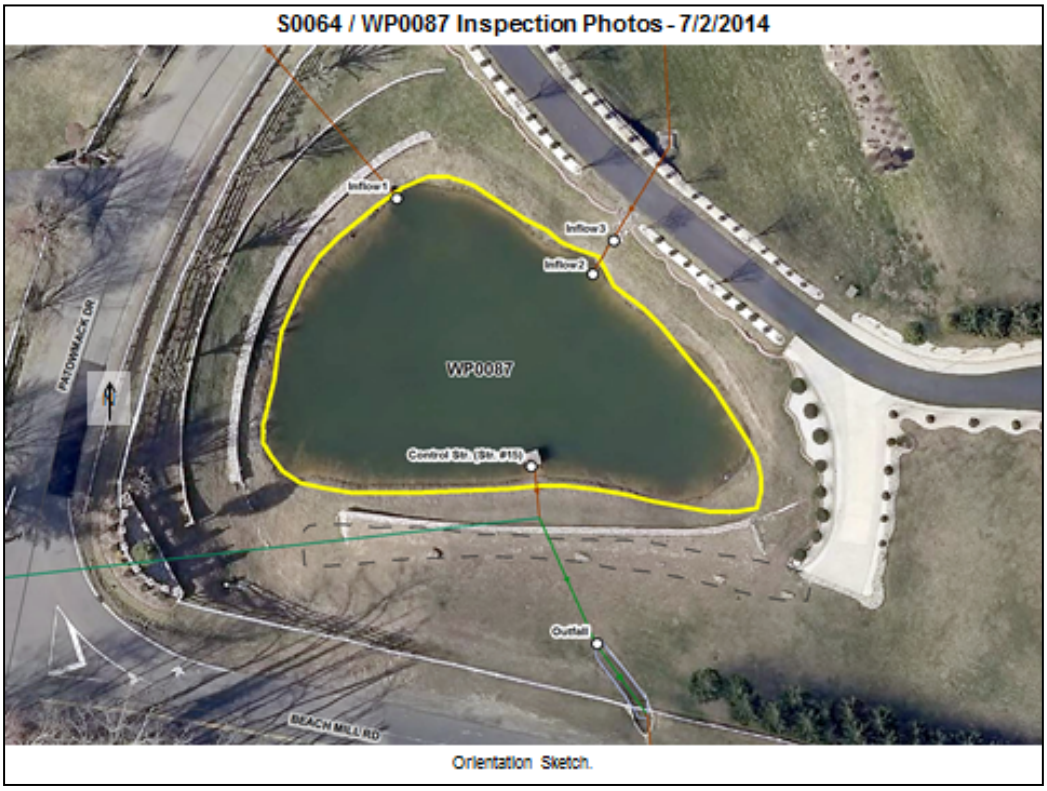


Figure 1-Orientation sketch example generated from GIS.

Here is an example layout showing the standard template of four photos with captions, slide header, and optional highlighting and labeling added.

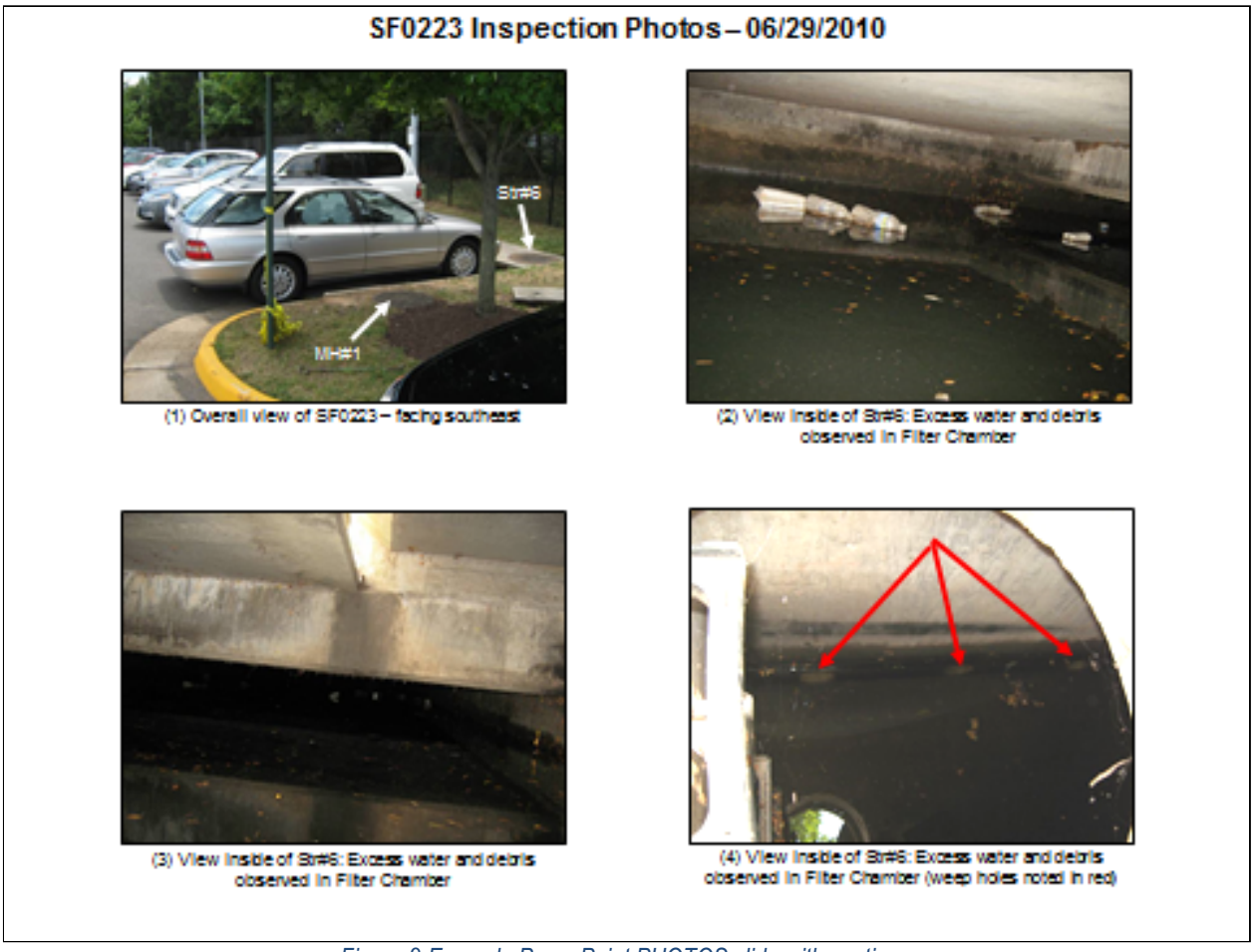


Figure 2-Example PowerPoint PHOTOS slide with captions.

6.2 Condition Assessment Report (CAR)

Standard CAR forms (based on the facility type) can be found at *J:\STW\SWM_Branch_Assets\Main\Private\Templates\Condition Assessment Reports*. Each facility type has its own CAR template. Follow the same procedure as for the PHOTOS.ppt template and copy and paste the template to the facility's folder and edit it there. Take care not to make changes to the original template. The final document should be named with the following naming convention: SiteID_FacilityID_CAR.docx. An example completed CAR in shown in Figure 3.

For each facility the following should be completed in the CAR:

1. Fill out the site ID and facility ID at the top each page.
2. For items that require maintenance within each section …
    a. Check the box by double-clicking. (NOTE: Hidden text may be viewed using the Show/Hide (¶) button on the toolbar. When Show All is turned on then the hidden text will appear with a dotted underline. Select the bullet-point / paragraph that you want to un-hide, and open the Font dialog box, either from the toolbar or by pressing Control + D. Uncheck the 'Hidden' box to un-hide that text and make it visible for printing.).

b. Add the photo number from the PowerPoint presentation (not the JPG number from the photo log), either with italics or with yellow highlighting to make it stand out more. For example: **See photo #2**.

c. Add any additional text needed to clarify the problem. Custom text added by the inspectors should be made Italics to differentiate it from standard CAR template text. For example, for missing plants: ***Three (3) trees were specified in the approved facility plan but only one (1) was found on site.***

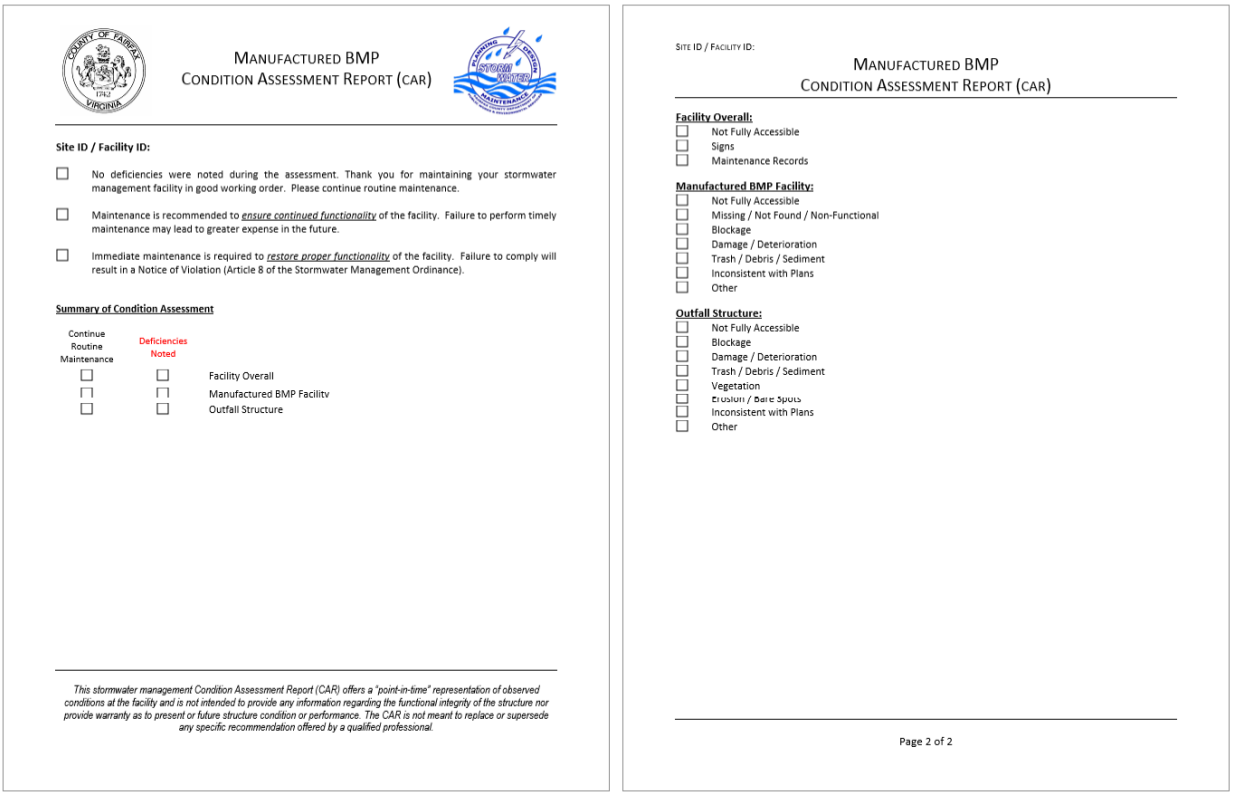
d. Bold the whole item.

3. Some older CAR templates include a "no additional maintenance is needed" item within each section. Check this box if it applies for the section, but do not bold it.

4. For the first-page summary section, check the boxes summarizing whether maintenance is needed or not for each facility section.

5. Within the overall facility summary, check the box indicating whether the facility is functional or not and whether maintenance is needed. Bold that entire checked item.

All maintenance items noted on the inspection form should be either included in the CAR or noted as "minor" problems in the photo captions. For example, if some sediment was noted but it was not judged by the inspectors to require cleaning, they may choose to include it in the photo caption: "Minor sediment build-up was noted on some portions of the pond floor."



MANUFACTURED BMP
CONDITION ASSESSMENT REPORT (CAR)

Site ID / Facility ID:

☐ No deficiencies were noted during the assessment. Thank you for maintaining your stormwater management facility in good working order. Please continue routine maintenance.

☐ Maintenance is recommended to *ensure continued functionality* of the facility. Failure to perform timely maintenance may lead to greater expense in the future.

☐ Immediate maintenance is required to *restore proper functionality* of the facility. Failure to comply will result in a Notice of Violation (Article 8 of the Stormwater Management Ordinance).

Summary of Condition Assessment

Continue Routine Maintenance	Deficiencies Noted	
☐	☐	Facility Overall
☐	☐	Manufactured BMP Facility
☐	☐	Outfall Structure

This stormwater management Condition Assessment Report (CAR) offers a "point-in-time" representation of observed conditions at the facility and is not intended to provide any information regarding the functional integrity of the structure nor provide warranty as to present or future structure condition or performance. The CAR is not meant to replace or supersede any specific recommendation offered by a qualified professional.

SITE ID / FACILITY ID:

MANUFACTURED BMP
CONDITION ASSESSMENT REPORT (CAR)

Facility Overall:
☐ Not Fully Accessible
☐ Signs
☐ Maintenance Records

Manufactured BMP Facility:
☐ Not Fully Accessible
☐ Missing / Not Found / Non-Functional
☐ Blockage
☐ Damage / Deterioration
☐ Trash / Debris / Sediment
☐ Inconsistent with Plans
☐ Other

Outfall Structure:
☐ Not Fully Accessible
☐ Blockage
☐ Damage / Deterioration
☐ Trash / Debris / Sediment
☐ Vegetation
☐ Erosion / Bare Spots
☐ Inconsistent with Plans
☐ Other

Page 2 of 2

Figure 3-Example Condition Assessment Report.

6.3 Assembling the Report Bundle

Additional items, listed below, need to be attached to the CAR and PHOTOS.ppt to complete the mailing bundle for each site. Note that several of the additional attachments are only needed once per site (rather than for each facility). Those attachments should be included with only the first facility of the site, and then not listed at all on subsequent cover letters. The approved site plan, PMA, tax map, and GIS are usually only needed once per site. One copy of the maintenance guidelines is needed for each type of facility on the site, and should be included with the first facility of that type.

The following are the additional attachments that need to be attached to the report in accordance with the directions provided:

1. *Cover letter*: Standard templates for the cover letter (depending on whether a facility has a PMA or not and whether maintenance is required or not) can be found at *J:\STW\SWM_Branch_Assets\Main\Private\Templates\Cover Letter*. Be sure to include the facility ID in both places where it's called for, and check that the header on the second page, and all mail merge fields on the first page are properly updated. The *Cover Letter* should be date stamped once the electronic review is complete as discussed in section 6.6.
2. *CAR*: discussed in Section 6.2.
3. *Photos with orientation sketch*: discussed in Section 6.1.
4. *Copy of Approved Plans*: found in the electronic Fixed References folder. A discussion of which sheets should be included can be found in the Pre-Inspection Research guide.
5. *Copy of PMA* (if available): found in the electronic Fixed References folder. The PMA and the Maintenance Guidelines are the only documents in the bundle that should be stapled.
6. *Tax Map*: found in the electronic Fixed References folder.
7. *GIS Aerial Photo*: found in the electronic Fixed References folder.
8. *Maintenance Guidelines*: Standard maintenance guidelines for different facility types are saved in *J:\STW\SWM_Branch_Assets\Main\Private\Templates\Maintenance Guidelines.* Print these double-sided and staple. Proprietary devices will require manufacturer-provided guidelines which can be found on the manufacturer's website.
9. *Maintenance Activity Report (MAR):* The MAR should only be included for facilities with required or recommended maintenance. A MAR can be found at *J:\STW\SWM_Branch_Assets\Main\Private\Templates\Maintenance Activity Report.* The MAR should be printed double-sided; check that the mail merge fields are all updated accurately before printing.
10. *Envelope for Certified Mail*: Each report will require one large mailing envelope, three address labels to the facility owner, two return address labels from MSMD, one certified mail receipt, and one stiff 'green card'. The certified mail receipt and the green card may be obtained from the post office. Figure 8 below shows how to attach the labels to the green card and where to write the site ID and the contractor initials (for contractor reports) so that the card can be properly sorted when it comes back to MSMD. The green card provides proof of delivery. The large envelope should be fully addressed and have both the certified mail receipt and the green card attached prior to submittal.
11. *Brochure*: Include one standard "Owners Guide: Maintaining Your Stormwater Management Facility" brochure in each inspection report envelope.

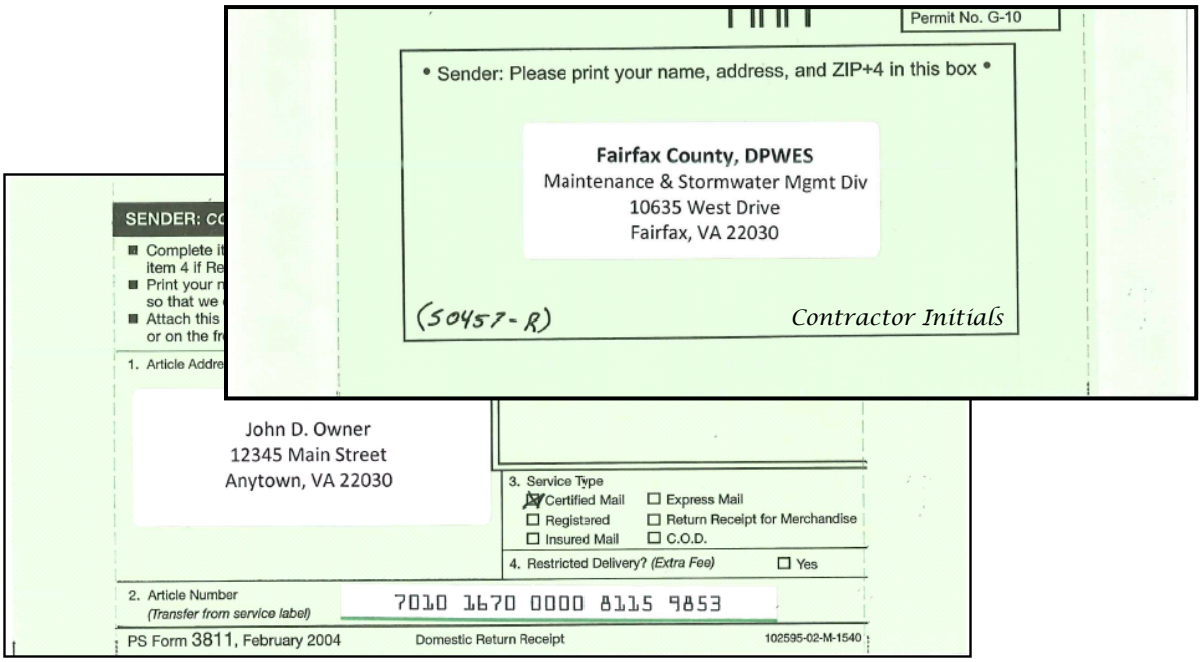


Figure 4-Filling out the green card for a certified mailing.

All items for each facility should be clipped together in the order stated on the cover letter for that facility, and then the facilities for each site clipped together to the envelope. Clips for the reports should be kept to the top and left of the bundle, allowing for easy flipping through the pages to stamp and sign the cover letters.

6.4 Inaccessible Facilities

In some instances the inspection will not be able to be completed due to access issues or for other reasons that may not be able to be worked out with the owner verbally or through email prior to the inspection. In those cases a special cover letter should be used, following the "COVER LETTER – No Inspection" template. The completed letter should include the reason why the inspection could not be performed and any additional information needed, such as meeting the inspectors on site with a key or removing heavy vegetation that is blocking access to the facility.

Most report attachments are optional for the special no-access reports. A CAR is generally not included, but any available photos should be included. Including the GIS print and/or tax map may also be helpful.

6.5 Report Quality Assurance/Quality Control (QA/QC)

A final check of the report is recommended for quality assurance/quality control (QA/QC) of the entire package including individual report components to help confirm both the maintenance items marked and the report's overall wording and formatting. This final step provides one last opportunity to QA/QC the report before it is mailed to the owner.

Adhere to the following procedure for performing QA/QC on forms and documents completed by the field team as part of their inspection:

- Check that all of the documents are for the correct facility ID and appear to be formatted correctly.
- Read through all checked maintenance items and photo captions, checking for wording mistakes or inconsistencies.

- All maintenance problems visible in the photos are also noted in the captions and the CAR and are clearly described.

Any corrections should be made and the final package prepared for submittal.

6.6 Private Report Submittal

Once all changes have been made to the inspection package, the package should be submitted electronically to the proper staff at MSMD for review as detailed below, including updating Infor-EAM™ and updating of the inspection tracking spreadsheet. Once the electronic review is complete the cover letter is date stamped and the hardcopy submitted to the proper staff at MSMD for signature and mailing.

Electronic Documents

At the time of package submittal, the electronic inspection files for the privately maintained facilities must be filed by site ID and facility ID, in the facility's Inspection folder, by inspection year. For each inspection year, a "Photos" and "Report" folder should be created. The "Photos" folder will store all the photos (JPG files) and the photo log while the "Report" folder will house all other documents and files related to that year's inspection, including the owner's response (MAR) to it. Figure 5 and Table 6 below provide more information on electronic file organization and naming.

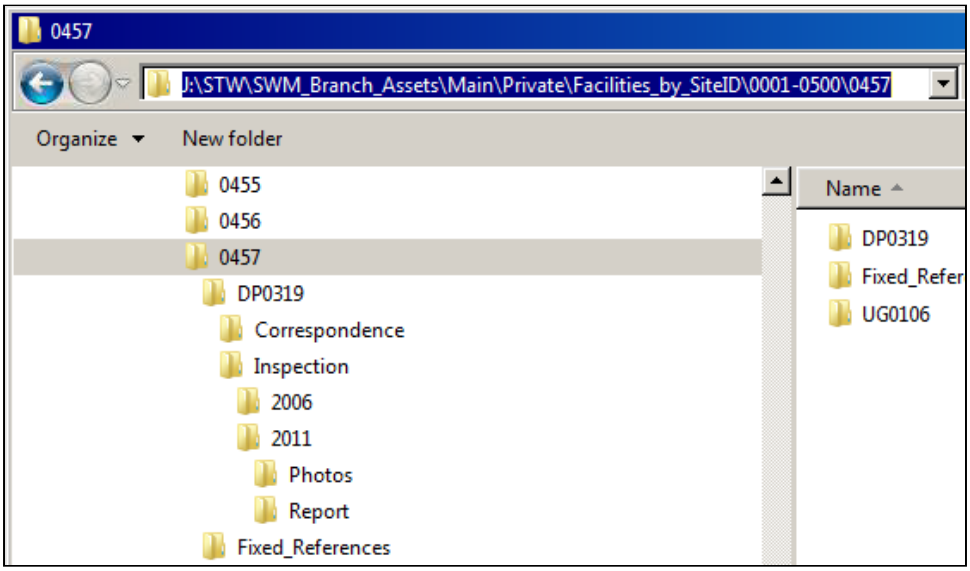


Figure 5-Where to save the inspection files, for example for the 2011 inspection of S0457 / DP0319.

Table 6- Naming conventions for private inspection files

File	File Name	File Location
Inspection Form	SiteID_FacID_INSPECTION-FORM.pdf	Report
Cover Letter	SiteID_FacID_COVER.doc	Report
	SiteID_FacID_COVER.pdf (signed letter, scanned after submittal and mailing as the start of the Follow-up tracking work)	
CAR	SiteID_FacID_CAR.doc	Report
PowerPoint	SiteID_FacID_PHOTOS.ppt	Report
MAR	SiteID_FacID_MAR.doc	Report
Inspection Photos	SiteID_FacID_PHOTO_###.jpg	Photos
Photo Log	SiteID_FacID_PHOTO-LOG.pdf	Photos

Infor-EAM™ Updates for Private Facilities

At the time of package submittal, the following Infor-EAM™ updates must be completed for the inspected facility. The Maintenance Needed and Maintenance Observation fields are only required for the private facility inspections, and the Previous Inspection Comments is optional.

- Last Inspection Date: date of the inspection.
- Previous Inspection: cut the value that was in the Last Inspection Date field and paste here.
- Inspection Team: county inspectors enter their initials; contractors enter their company's initials.
- Maintenance Needed: yes or no.
- Maintenance Observation: maint. recommended, maint. required or no maint. required
- Previous Inspect Comments (optional): up to 40 characters describing the facility's current condition.

Occasionally the Comments tab or the Access Comments field may need to be updated as well, based on special conditions that the inspectors find in the field.

Entering the "CAR Cert Mail Sent" date begins the follow-up tracking process.

Inspection Tracking Spreadsheet

At the time of package submittal the private inspection tracking spreadsheet must be also updated. Private inspection tracking spreadsheets are to be saved in *J:\STW\SWM_Branch_Assets\Main\Private\Maintenance Tracking.* For each year the county has a spreadsheet and each contractor has a spreadsheet.

The tracking spreadsheet must be updated to include the following inspection and follow-up items for each facility:

- Site ID
- Facility ID
- Inspection Task Order (for contractors only)
- Inspection Date
- Comments related to this inspection / follow-up
- Is maintenance required? (Yes / No)
- MAR Received Date
- For the Report, 45-Day-Letter, and 90-Day-Letter…
    - Date Submitted to MSMD (for contractors only)
    - Date Mailed
    - Date Received
    - 45 days after receipt date, when the next letter may be submitted
- Date submitted to Enforcement

The following additional fields are optional:

- Plan Name and Plan Number
- Tax Map information
- PMA with Deed Book / Page
- Comments by MSMD Staff (for contractors only)
- Maintenance Needs Summary (useful for checking later owner responses)
- Follow-up Closed Date

As part of the private report submittal, the Inspection Date, Maintenance Needed, Maintenance Observation and Report Submitted Date should be updated in the appropriate inspection tracking spreadsheet. The next step, follow-up work will be detailed in a separate document.

7 Sample Bioretention Facility Inspection Form

Bioretention Inspection Form

Fairfax County Maintenance and Stormwater Management Division

Inspector: Cert ⊙
Inspector: Cert ⊙
Date:

Site ID: Facility ID: Facility Name:
Address: Coordinates / ParID :
Watershed: District:

Functional? Yes No

Score Totals: 1 2 3

Scoring Key:
① High Priority / Non-functional
② Moderate Priority / Approaching Non-functional
③ Low Priority / Functional
⊙ No Priority / Continue Routine Maintenance
⊗ Not Applicable

Notes / Specifications: Facility Specific Info:

Facility Type / Addl Facility Info:

Signs			Weather Conditions		
SCORE	PHOTO	DESCRIPTION	Last Rainfall	Date:	Amount:
③⊙⊗		Facility Sign		Date Source:	
③⊙⊗		Facility Labeling	Current weather conditions?		

Accessibility				
Access Comments:			ACCESS PROBLEMS (Circle)	NEXT STEP (Circle One)
New Access Comments for EAM:			Locked Gate / Fence	Coordinate with Owner
			Heavy Vegetation	Return for Re-inspection
SCORE	PHOTO	DESCRIPTION	Stuck / Broken Cover	Request Photos from Owner
① ⊙⊗		Overall Facility Access	Equipment Needed:	Contact MSMD
①②③⊙⊗		Component Access:	Other:	Other:

Ponding Area					
SCORE	PHOTO	DESCRIPTION	COMMENTS / DIMENSIONS		
① ⊙⊗		Standing Water in Basin			
① ⊙⊗		Basin Area	Observed:	Specified:	
① ⊙⊗		Ponding Depth	Observed:	Specified:	
①②③⊙⊗		Trash / Debris / Sediment *Description / Amount*			
①②③⊙⊗		Mulch Cover (2-3" min.)			
①②③⊙⊗		Erosion / Bare Spots *Area:*			
①②③⊙⊗		Repair Filter Fabric			
①②③⊙⊗		Other: *Description:*			
		Plant Material	Plants in Inventory:		
①②③⊙⊗		Trees Missing *(20% < ③ < 40% < ② < 60% < ①)*	Observed:	Specified:	Total % of Plant Material Coverage:
①②③⊙⊗		Shrubs Missing *(see above)*	Observed:	Specified:	
①②③⊙⊗		Groundcover Plants Missing *(see above)*	Observed:	Specified:	
①②③⊙⊗		Unhealthy / Damaged			
①②③⊙⊗		Overgrown / Invasive Vegetation			
①②③⊙⊗		Other: *Description:*			
		Observation Well / Cleanout(s)			
① ⊙⊗		Missing / Not Found			
① ⊙⊗		Cap Missing / Stuck			
①②③⊙⊗		Water / Sediment Observed in Well?			
①②③⊙⊗		Vegetation / External Obstructions			
①②③⊙⊗		Damaged *Description:*			
①②③⊙⊗		Other: *Description:*			

Inflow(s)								
SCORE	PHOTO	DESCRIPTION	1	2	3	4	5	6
		Material / Size / Type:						
①②③⊙⊗		Blockage *(③ < 25% < ② < 75% < ①)*						
①②③⊙⊗		Trash / Debris / Sediment *Description / Amount*						
①②③⊙⊗		Erosion / Undermining						
①②③⊙⊗		Spalling / Deterioration						
①②③⊙⊗		Separation / Misalignment						
①②③⊙⊗		Overgrown Vegetation / Tree Removal						
①②③⊙⊗		Other: *Description:*						

Pre-Treatment / Energy Dissipators				
Type(s): Flow spreader / Forebay / Gravel diaphragm / Grass filter strip / Grass channel / Leaf screen / Level spreader / Other:				
SCORE	PHOTO	DESCRIPTION	COMMENTS / DIMENSIONS	
① ⊙⊗		Missing / Non-Functional *Description:*		
① ⊙⊗		Inconsistent with Plans *(Area, Vertical Drop, etc.)*	Observed:	Specified:
①②③⊙⊗		Damage / Deterioration *Description:*		
①②③⊙⊗		Trash / Debris / Sediment *Description / Amount*		
①②③⊙⊗		Other:		

Dam / Berm and Overflow Spillway				
SCORE	PHOTO	DESCRIPTION	COMMENTS / DIMENSIONS	
① ⊙⊗		Missing	Observed:	Specified:
①②③⊙⊗		Slope Erosion *Area:*		
①②③⊙⊗		Bare Spots *Area:*		
①②③⊙⊗		Animal Holes		
①②③⊙⊗		Overgrown Vegetation / Tree Removal		
①②③⊙⊗		Trash / Debris / Sediment *Description / Amount*		
①②③⊙⊗		Other: *Description:*		

Bioretention Inspection Form — Page 2

Site ID: _____ Facility ID: _____ Facility Name: _____

Control Structure				
Function:		Orifice Size:	Type (Circle): Riser Structure / Pipe End / Weir / Other:_____	
SCORE	PHOTO	DESCRIPTION		COMMENTS / DIMENSIONS
①②③⊙⊗		Damage / Deterioration	Description:	
①②③⊙⊗		Vegetation / External Obstructions		
①②③⊙⊗		Other:	Description:	
		Low-Flow Orifice and Trash Rack		
① ⊙⊗		Orifice Plate Missing / Non-Functional		
① ⊙⊗		Trash Rack Missing / Non-Functional		
①②③⊙⊗		Blockage	(③ < 25% < ② < 75% < ①)	
①②③⊙⊗		Damage / Deterioration	Description:	
		Top Trash Rack and Anti-Vortex Plate		
① ⊙⊗		Pad Lock Missing		
①②③⊙⊗		Blockage	(③ < 25% < ② < 75% < ①)	
①②③⊙⊗		Damage / Deterioration	Description:	
		Riser Interior		
①②③⊙⊗		Trash / Debris / Sediment	Description / Amount:	
①②③⊙⊗		Ladder / Steps Condition		
①②③⊙⊗		Manhole Condition		

Underdrain(s) and Principal Spillway Pipe				
SCORE	PHOTO	DESCRIPTION	UNDERDRAIN(S)	PRINCIPAL SPILLWAY PIPE
		Specified on Approved Plans?		
① ⊙⊗		Missing		
①②③⊙⊗		Blockage (③ < 25% < ② < 75% < ①)		
①②③⊙⊗		Spalling / Deterioration		
①②③⊙⊗		Separation / Misaligned Joints		
①②③⊙⊗		Other:		

Outfall Structure				
Material:		Size:	End Type:	
SCORE	PHOTO	DESCRIPTION		COMMENTS / DIMENSIONS
①②③⊙⊗		Blockage	(③ < 25% < ② < 75% < ①)	
①②③⊙⊗		Trash / Debris / Sediment		
①②③⊙⊗		Erosion / Undermining	Area:	
①②③⊙⊗		Spalling / Deterioration		
①②③⊙⊗		Separation / Misalignment		
①②③⊙⊗		Overgrown Vegetation / Tree Removal		
①②③⊙⊗		Manhole Condition		
①②③⊙⊗		Ladder / Steps Condition		
①②③⊙⊗		Downstream Channel Condition		
①②③⊙⊗		Other:		

Other			
SCORE	PHOTO	DESCRIPTION	LOCATION
①②③⊙⊗		Encroachments	
①②③⊙⊗		Modifications	
①②③⊙⊗		Mosquito Habitat	
①②③⊙⊗		Evidence of Possible Illicit Discharge (Email to report: stormwaterpollution@fairfaxcounty.gov)	

INSPECTOR COMMENTS

Appendix D2

Field Measurements and Work Order Preparation

November 2015
Revised April 2017
Revised June 2021

Prepared by:

Fairfax County Department of Public Works and Environmental Services (DPWES)
Maintenance and Stormwater Management Division (MSMD)
10635 West Drive
Fairfax, Virginia 22030

In consultation with:

Rinker Design Associates, PC
9385 Discovery Blvd.
Suite 200
Manassas, VA 20109

Table of Contents

1 Introduction

The overall purpose of this effort is to produce a scope of work narrative for distribution to either in-house maintenance crews or the general contractor(s) responsible for performing non-routine maintenance work orders. This scope of work narrative will be attached to the Work Order prepared by MSMD staff and will be distributed to those responsible for completing non-routine maintenance on public ponds. The scope of work narrative will specify the required maintenance items, and will include a brief description of the work to be performed with supporting photographs from the visual inspection. Using the scope of work narrative, the maintenance crew will then prepare and submit a cost proposal to MSMD to complete the necessary maintenance for each pond. A blank work order scope of work narrative may be found in Appendix A.

A visual inspection of each pond will identify the required non-routine maintenance items required for each facility. The role of the engineering contractor in this effort includes the collection of field measurements for each maintenance item identified during the visual inspection, the preparation of the scope of work narrative, and the completion of a cost estimate based upon the measurements gathered in the field. Each component for this effort is discussed further in the subsequent sections of this document. The overall goals of this document include the following:

1. to standardize the methodology for collecting field measurements during public facility visual inspections;
2. to standardize the methods for converting the raw field data to line item descriptions included in the scope of work narratives;
3. to standardize the procedure amongst all engineering contractors involved in the inspection process in order to produce a uniform method of relaying information to MSMD staff and the maintenance team; and,
4. to develop a standard operating procedure in an effort to streamline the identification, documentation, and completion of non-routine maintenance on public ponds.

2 Collection of Field Measurements

The first goal of this document is to standardize the methodology for collecting field measurements. This section identifies the key measurements for each inspection item and outlines the procedure for collecting such measurements in the field. Items of note beyond basic measurements that may affect the ultimate maintenance costs are also discussed in each sub-section. While the following sub-sections attempt to outline the standard practice for collecting field measurements, inspection crews should adhere to this process to the extent feasible. Inspection crews should use sound judgment while in the field to adjust the procedure as necessary to ensure a complete and accurate estimate may be derived from the field data. **It should be reiterated that all measurements and field practices must conform to Fairfax County's Confined Space Entry procedures; at no time under the Public Inspection Program should inspection crews enter a confined space or 'break the plane' of a confined space.**

In an effort to reduce clutter on the inspection forms, field measurements should not appear on the form. Field measurements should be noted separately for incorporation into the scope of work narrative later. These additional field notes may be scanned and uploaded to the facility asset folder along with the inspection forms if deemed necessary by the engineering contractor. Simple measurements (areas, lengths, etc.) that are self-explanatory need not be uploaded for each facility; however, if measurements include calculations, assumptions were made in deriving the final measurements, or if non-standard items were included in the data, a scanned copy of the field notes should be uploaded for future reference. The scanned document should be uploaded to the facility asset folder and saved under the following naming convention: SITEID_FACILITYID_FIELD-NOTES.pdf.

Field work should be limited to obtaining the field measurements only. The derivation of areas, volumes, etc. required to prepare the scope of work narrative should not be performed in the field. Refer to Section 4 of this document for

further discussion on the conversion of the field measurements to data to be used in the preparation of the scope of work narrative and cost estimate.

2.1 Site Accessibility

The removal of anything impeding access to the facility should be included in the scope of work narrative and measured in the field, as long as it falls under the County's responsibility. The most common examples of this include trash and debris (e.g. fallen tress). Other examples include sediment deposition from nearby erosion, damaged or broken access gates, and failed/deteriorated road surfaces. Based upon field conditions, inspection crews should ensure adequate measurements and descriptions of the item(s) requiring removal on a case-by-case basis. Examples of such measurements may include the following: the approximate size a fallen tree; the total volume of trash, debris, and/or sediment; the area and depth of a damaged access road; or, the type, length, and height of a fence (or similar obstruction).

Examples of accessibility issues that would be noted on the inspection form but would not be the County's responsibility (i.e. the County's cost) include construction debris from a nearby private project or private vehicles parked in a manner that blocks access. In such cases, the access issues will be documented and the County will be notified, but the item(s) should not be included in the scope of work narrative.

2.2 Structure Accessibility

Specific items pertaining to structure accessibility are discussed in detail in subsequent subsections.

2.3 Facility Sign

Missing facility signs shall be recorded on a per sign basis and the measurement should include whether or not a post exists in the field. Damaged posts and/or signs should be deemed to be replaced as determined by the inspection crew based upon field conditions.

[Note: All public facilities require a minimum of one (1) facility sign with the facility ID and watershed label. The available plans of record should be reviewed to determine whether or not additional signs were shown to be installed in the field. Ponds may include additional facility signs for large ponds, ponds with multiple access points, water quality management area signs, reforestation signs, etc.]

2.4 Facility Labeling

No measurement/estimate is required for this item.

Facility and watershed labeling is included in a separate maintenance process and will not be included in the scope of work narrative.

2.5 Riser Structure – Pad Lock Missing

No measurement/estimate is required for this item.

The replacement/furnishing of missing pad locks and chains is included in a separate maintenance process and will not be included in the scope of work narrative.

2.6 Riser Structure – Trash Rack Missing

The top trash rack, low-flow trash rack, or both may be missing from a riser structure. When a detail of the missing trash rack is included in the plan of record, these dimensions should be used and included in the preparation of the

scope of work narrative. For facilities that lack a specified trash rack design, sufficient information for use in the fabrication of an appropriate trash rack should be obtained.

The following field measurements/observations will apply:

Top Trash Rack: geometry of riser structure (square, circular, etc.); dimensions of riser structure (length by width, diameter, etc.); any irregular shape, design, weir, etc.; is an anti-vortex device to be included; etc.

Low-Flow Trash Rack: orifice size and shape; available surface area to attach trash rack (e.g., width and height of head wall); will trash rack attach to flat surface (headwall, rectangular riser) or curved surface (circular riser); width/length of concrete apron; width/height/geometry of trickle ditch; etc.

2.7 Riser Structure – Spalling

The deterioration of concrete (spalling) is repaired through parging. Field measurements of the total surface area to be parged (length by width) should be taken for minor or superficial deterioration. For major spalling (deep cracking, structural failures, holes, crumbling, etc.) the depth of the area to be parged should also be measured.

2.8 Riser Structure – Joint Failure

Joint failure is similar to spalling and will be repaired through parging for concrete structures and/or pipes. The length of failure and gap width should be measured.

2.9 Riser Structure – Anti-Vortex Condition

This item applies to facilities that are missing an anti-vortex device. Typically, this only applies to dry and/or wet ponds with a circular riser structure, but the plans should be reviewed in all cases to determine whether or not an anti-vortex device is required. In cases where the riser's trash rack is present, but missing the anti-vortex device, the available height, width, and span of the area for the anti-vortex device should be measured. If there is no trash rack present, the dimensions for the trash rack should account for the inclusion of an anti-vortex device.

2.10 Riser Structure – Trash Rack Blockage

The removal and disposal of trash rack blockages will typically be estimated on a per facility basis. For typical blockages, inspections crews need only to note that there is a blockage to be removed. For facilities with an unusually large amount of debris causing the blockage, inspection crews should obtain an approximate volume of the blockage and include a short description of the type and condition of the material to be removed. This will help ensure additional trips to the pond to obtain necessary field measurements are avoided.

2.11 Riser Structure – Orifice Blockage

Orifice blockages should be measured and estimated in the same manner as trash rack blockages. Small blockages may be measured on a per facility basis. For large blockages, field measurements should be taken to obtain the total volume of material to be disposed. Additional items of note to consider include whether or not the facility will require dewatering operations in order to facilitate the removal of the orifice blockage. Additional items of note should be considered on a case-by-case basis as warranted by field conditions.

2.12 Riser Structure – Top Trash Rack Blockage

Measurements associated with top trash rack blockages should be performed in the same manner as Subsection 2.10.

2.13 Riser Structure – Manhole Condition

Any maintenance issues associated with a riser structure's point of access should be documented. While most commonly a standard manhole, access may also be in the form of Bilco Doors or custom design access doors. Damage may include a loose or damaged collar, a damaged or missing lid, or, in the case of Bilco Doors, a broken or damaged hinge. Measurements for these items should be item appropriate and include sufficient details to fully develop a scope of work. The total number of items should be noted as well as specific measurements as appropriate. For example, the field notes may include quantitative and qualitative descriptions such as: "Replace one (1) 4' diameter manhole lid", "Repair one (1) 5' diameter loose manhole collar", or "Repair four (4) 4"x8" steel hinges".

[*Note: Notify MSMD staff immediately in all cases of missing or damaged manhole lids. MSMD staff will determine whether or not the work associated with the repair/replacement should be included in the scope of work narrative or will be performed by MSMD personnel (and, therefore, not included in the scope of work narrative)]*

2.14 Riser Structure – Inside Riser Blockage

The total volume of material/debris to be removed from the structure should be measured in the field. However, due to the fact that the Public Inspection Program prohibits confined space entry, obtaining accurate measurements may prove difficult. Every effort should be made to obtain accurate estimates of the material(s) causing the blockage while ensuring inspection crews do not break the plane of the confined space. Tape measures should be used when feasible to determine the amount of material present (length of debris, depth of sediment, etc.). Existing features such as pipe diameters, riser diameters, etc. may be used to approximate the amount of material present, either through field measurements or the available plans of record. Visual observation of the blockage may be used to approximate the amount and/or type of material to obtain an acceptable estimate (for example, inspection crews may be able to visually estimate that eight (8) pieces of VDOT Class I rip-rap are inside the riser). Inspection crews should use their best judgment to obtain the most accurate measurements possible.

2.15 Riser Structure –Vegetation/External Obstructions

Vegetation and external obstructions that impede access to the riser should be estimated in an appropriate manner on a case by case basis. Standard measurements (length, width, height) of structural obstructions (e.g. walls, fences, etc.) should be taken, as well as any related observations that may affect the removal of such items. For example, nearby underground utilities, access issues, or significant footers that require equipment for their removal may affect the cost of a simple fence. In cases of external vegetation causing the obstruction, the condition, type, and amount of vegetation present should all be noted. The number and size of shrubs and trees should be noted and the diameters/heights of each measured. For additional information on the measuring of trees to be removed, please refer to Subsection 2.34.

[Note: It is important to distinguish between routine and non-routine maintenance in this instance. Routine maintenance for pond facilities should include the removal of woody stock, brush, and trees up to 2" in diameter from around all critical structures. Vegetation/external obstructions of the riser structure falling within this threshold should not be included in the scope of work narrative. MSMD staff should be notified through the mowing QC process and the obstructions should be removed under the standard Mow Package work.]

2.16 Riser Structure – Ladder/Steps Condition

Measurements associated damaged or missing ladders and steps include the following: total number of steps to be repaired and/or replaced; height and type of material of ladder; and, whether or not the ladder/steps are external to the structure or internal to the structure (and, therefore, require a confined space entry).

2.17 Riser Structure – Other

Any other non-routine maintenance items associated with the riser/control structure are included within this section. Field measurements (and the associated units of measurement used) should be appropriately selected based upon similar subsections discussed herein.

2.18 Principal Spillway Pipe – Spalling

Measurements associated with spalling on the Principal Spillway Pipe (PSP) should be performed in the same manner as Subsection 2.7.

2.19 Principal Spillway Pipe – Blockage

Blockages of the PSP should be measured in total volume of material to be removed and disposed. For small blockages at the end of the pipe, the volume may be estimated through direct measurements or visual observation. For example, an inspection crew may be able to measure the amount of sediment by sticking a tape measure within the pipe or estimating the amount of rip-rap observed. Field measurements for the diameter, length, and depth of material should be used when feasible. When field measurements are not feasible or attainable, information from the plans of record should be utilized. Only when no other information is available should pipe measurements be estimated. Similar to other items, field observations should also describe the type and condition of the material causing the blockage.

2.20 Principal Spillway Pipe – Joint Failure

Measurements associated with PSP joint failure should be performed in the same manner as Subsection 2.8.

2.21 Principal Spillway Pipe – Misaligned Joints

Inspection crews must first identify the degree of misalignment in order to determine the appropriate method of repair. Minor misalignment of joints (scored as a 3) may be repaired through parging. When possible, the width of the gap and diameter of the pipe should be measured. For those joints located within a confined space that preclude direct measurement, the total number of misaligned joints should be noted and estimates of the gap width provided to the fullest degree possible. *[Since the misalignment in this case is within the PSP, it is important to note that in order to qualify as minor and be repaired through simple parging, the flow of water must not be impeded by the misaligned joints.*]

Misaligned joints may be categorized as major (scored as a 2 or 1) because they either impeded the flow of water or the gap between the two pipe segments exceeds 3". Repair to correct these misaligned joints require substantial work. Field measurements required in these instances include the diameter of the pipe, the length of the misalignment (size of the gap), depth of the pipe/amount of backfill, and the segment length of the pipe on downstream end of the misalignment. Any other information that could prove useful to determine the cost to correct the misalignment should be included in the field measurements.

2.22 Principal Spillway Pipe – Separation

Separation within the PSP must first be identified in the field as minor (scored as a 3) or major (scored as a 2 or 1). Separation may be classified as minor if the separation gap is less than 3" and the separation occurred along the longitudinal axis of the pipe (i.e. the pipe has only pulled apart in a longitudinal manner so that both pipes are still at the same slope and there is no vertical drop between the pipes observed). In this case, the diameter of the pipe, the separation distance (gap), and pipe material should be noted when possible. For those joints located within a confined space that preclude direct measurement, the total number of misaligned joints should be noted and estimates of the gap width provided to the fullest degree possible.

Major separation occurs when one or more of the following conditions occur: the separation is greater than or equal to 3"; the pipes have separated vertically as well as longitudinally (i.e. there is a vertical drop across the pipes and the two pipes are now laying at different slopes); failure of the system is imminent; or additional deficiencies are present as a result of the separation (examples of this include a cave-in above the pipe or evidence of undermining beneath the pipe). Field measurements need to provide sufficient information to repair the deficiency based upon field conditions. These measurements include the PSP diameter, pipe material, downstream pipe segment length, separation distance (gap), and amount of backfill over the pipe.

2.23 Principal Spillway Pipe – Other

Any other non-routine maintenance items associated with the PSP are included within this section. Field measurements (and the associated units of measurement used) should be appropriately selected based upon similar subsections discussed herein.

2.24 Outfall Downstream – Spalling

Measurements associated with spalling on the downstream outfall structure should be performed in the same manner as Subsection 2.7.

2.25 Outfall Downstream – Undermining

The main measurements associated with undermining at the outfall structure are those required to determine the volume of material needed to stabilize the undermining. The void area under the structure should be measured directly in the field to determine the width, length, and depth. It is important to note that this area may extend either in front of the structure, underneath the structure, or both. Other information that should be noted by the inspection crews in the field include the condition of the receiving channel, the type of receiving channel (natural soil, rocky earth, concrete ditch), geometry of the receiving channel, and the condition of the structure itself. In the event that the undermining has caused deterioration or failure of the structure, additional measurements will be required. Minor deterioration/spalling/cracking that may be repaired through parging should be measured in accordance with Subsection 2.7. In instances where major repair or replacement of the structure is required, the structure type (end section, end wall, etc.) and size should be noted. If a concrete apron is present, the length, width, and thickness of the concrete should also be measured.

2.26 Outfall Downstream – Separation

Separation between the PSP and downstream outfall structure should be measured in a manner similar to Subsection 2.22. In the case of minor separation (scored as a 3), measurements should be taken to obtain the total surface area to be parged (width of gap and pipe diameter). Major separation (scored as a 2 or 1) must be evaluated in the field to determine the extent of damage and amount of necessary repairs. Instances where parging and/or slip-lining are not viable options to complete the repairs, the structure type, pipe size, and structure dimensions should be noted. Dimensions of the structure include width, height, and thickness.

The dimensions and geometry (angles) of any wing walls present should also be measured. Additional information gathered in the field should include access issues that exist, downstream outfall conditions (material/geometry of channel, presence of rip-rap, etc.), volume of excavation required, and any structural components present (e.g. handrail).

2.27 Outfall Downstream – Erosion

The area and depth of eroded areas should be measured in the field. Minor downstream erosion will likely be repaired through a combination of standard erosion control netting (e.g. jute mesh) and seeding. Therefore, minor erosion will often be measured only in terms of area to be stabilized (square yards). Measurements for significant areas of erosion

include the area to be stabilized (square yards), as well as the depth of erosion, to determine the amount of material in cubic yards required to stabilize the area. The material and condition of the area should be noted in the field and should include pertinent information such as channel type (natural, rip-rap, concrete, etc.) and channel geometry (V-ditch, trapezoidal ditch, etc.). Preparation of the scope of work narrative will include the determination as to whether or not temporary controls are required so the field notes should also provide qualitative descriptions of the erosion. Such descriptions may include whether or not the erosion is ongoing or has stabilized, condition of the downstream channel past the erosion, and descriptions of any potential downstream areas that are sensitive or may be impacted by the erosion (e.g. downstream structures or dwellings, streams, etc.).

2.28 Outfall Downstream – Cave-In

The size, depth, and location of any cave-ins encountered in the field should be noted in order to determine the amount of material required to fill and stabilize the area.

2.29 Outfall Downstream – Blockage

Often times a facility's PSP will outfall to a closed conduit system (e.g. manhole or curb inlet). The outfall pipe from this downstream structure should be evaluated as part of the visual assessment to determine whether or not downstream blockages are present within the system. If blockages are observed within the downstream outfall pipe, measurements should be performed in the same manner as Subsection 2.19.

2.30 Outfall Downstream – Displaced Rip-Rap

Field measurements should include the total area in need of rip-rap. The rip-rap that was displaced shall not be removed unless it obstructs a conveyance or structure. The length of rip-rap should be a minimum of 10' from the end of the structure; the minimum width of the rip-rap should be assumed to be 6'. For the various outfall types, the following measurements should be made in the field:

Pipe End:	A minimum of 10' from the pipe end, unless additional area is needed based upon field conditions. The width of the rip-rap should be 3 times the PSP diameter, but not less than 6' wide.
End-Section:	A minimum of 10' from the end of the structure, unless additional area is needed based upon field conditions. The width of the rip-rap should be 3 times the PSP diameter, but not less than 6' wide.
End Wall:	A minimum of 10' from the end of the structure, unless additional area is needed based upon field conditions. The width of the rip-rap should be equal to the width of the structure, but not less than 6'.
End Wall w/ Wing Walls:	A minimum of 10' from the end of the wing walls, unless additional area is needed based upon field conditions. The width of the rip-rap should be equal to the width of the structure from edge of wing wall to edge of wing wall. If no concrete apron is present, the area 'enclosed' by the structure should also be measured and included in the total area.

2.31 Outfall Downstream – Overgrown Vegetation

Overgrown vegetation in the vicinity of the outfall structure should be measured in the field in a manner similar to Subsection 2.15.

2.32 Outfall Downstream – Downstream Blockage

A downstream blockage usually refers to blockages in natural or man-made channels for facilities that outfall to daylight. Typical blockages consist of trash and debris, fallen trees, sediment deposition, and/or displaced rip-rap. The removal of downstream blockages should be determined on a case-by-case basis. Most often, the field measurements

associated with a downstream blockage will include the length, width, and depth (as appropriate) of the debris causing the blockage, as well as a short description of the condition of the material.

2.33 Outfall Downstream – Handrail Status

Damaged or missing handrail should be documented in the field. The extent of damage should be explicitly listed in the field notes. Typical measurements for damaged handrail may include the following: handrail type (e.g. HR-1, HR-2, etc.), diameter or rail; total linear feet of damaged or missing railing; number of loose or damaged joints, welds, or connections to structure; description of how handrail is attached to structure; and height of handrail. In cases where handrail is missing, the total linear footage and height required for installation is required.

2.34 Outfall Downstream – Tree Removal

The removal of tress greater than two inches (2") in diameter will be included in the non-routine maintenance scope of work narrative. The diameter and total number of trees to be removed should be noted. The diameter of all trees to be removed shall be measured in accordance with Section 12-0507.1A of the Fairfax County PFM, which states: "The diameter of all trees shall be measured at a height of 4.5 feet from the base of the trunk or as otherwise allowed in the latest edition of the Guide for Plant Appraisal, published by the International Society of Arboriculture."

Additional field observations associated with the removal of trees that should be noted include the accessibility to the trees and sensitive or critical items within the vicinity (e.g. power lines, nearby dwellings or structures, proximity of vehicular or pedestrian traffic, etc.) that may affect removal operations.

[Note: It should be noted that the removal of trees does not include the removal of the stump or associated root system. In most cases, the tree will be cut at ground level and the stump/roots left in place.]

2.35 Pond Floor – Silted-In/Debris 75%

This line item will be marked during the visual assessment of a facility only when approximately 75% or more of the total pond volume is silted in or full of debris. Typically, this maintenance item will not be included in the scope of work narrative as the work will be performed under a separate maintenance program involving pre- and post-sediment removal as-built surveys of the pond. Should inclusion of this maintenance item be included in the scope of work narrative, the total sediment to be removed should be estimated in cubic yards of material to be removed.

2.36 Pond Floor – Trash/Debris Removal

Trash and debris removal on the pond floor will vary by type, size, and amount. Trash/debris removal should be evaluated on a case-by-case basis. Most often, the field measurements associated with the removal of trash and debris include the total volume and a short description of the material to be removed.

2.37 Pond Floor – Tree/Vegetation Removal

Tree and vegetation on the pond floor that is deemed to be removed should be estimated in a similar manner to Subsection 2.34 and Subsection 2.15. It should be noted that trees and vegetation are allowed on the pond floors in most cases, as long as they are not impeding the flow of water or affecting the functionality of the facility.

2.38 Pond Floor – Other

Any other non-routine maintenance items associated with the pond floor are included within this section. Field measurements (and the associated units of measurement used) should be appropriately selected based upon similar subsections discussed herein.

2.39 Wetland Habitat – Trash and Debris

Trash and debris removal within wetland habitats should be estimated in manner similar to Subsection 2.26. Information contained in the plans of record (construction notes, maintenance specifications, etc.) should be reviewed to determine if any maintenance or disposal activities violate the intended design.

2.40 Wetland Habitat – Bare Spots

The location(s) of bare spots observed should be documented and the total area(s) of each measured. If the plans of record document a specific seed mix, this information should also be noted for quick reference during the preparation of the scope of work narrative.

2.41 Wetland Habitat – Sediment Deposition

The location(s) of sediment deposition should be documented and the size and depth of each measured to obtain the total volume of sediment present.

2.42 Wetland Habitat – Condition of Plants

Any plants within the habitat area that are dead, dying, damaged, or showing signs of poor health should be documented. Inspection crews should note the total number of plants in poor condition, as well as the species (may be identified through field observation or planting schedule), size, and extent of damage/deterioration for each.

2.43 Wetland Habitat – Erosion

Areas of erosion within the wetland habitat should be measured in a similar manner to Subsection 2.27.

2.44 Wetland Habitat – Ponding Water

Ponding water is not necessarily an item that will be measured. Instead, inspection crews should investigate the cause of the ponding water and determine the field measurements required in accordance with the appropriate subsection(s) contained herein. Causes of ponding water within a wetland habitat may include blockages, trash and debris, or sediment deposition. The plans of record should also be reviewed in this case to determine whether or not the wetland habitat and ponding water is actually a function of the design (i.e. the ponding water may be a sediment forebay and not an actual maintenance item).

2.45 Wetland Habitat – Undesired Vegetation

Overgrown vegetation, invasive species, and vegetation not included in the design may require removal. In the instance of easily identifiable plants, the total size and number of undesired plants should be noted.
In the event the undesired vegetation is a ground cover or vines (e.g. poison ivy), the total coverage area should be measured. A certified arborist may be required to prepare a removal plan, if the plantings cannot be confirmed with the plans of record. Further coordination with MSMD staff in these instances should occur.

[Note: Some undesired vegetation requires immediate notification to MSMD staff upon encountering them in the field. Giant Hogweed, for example, is toxic and poses a safety risk to inspection crews and the general public. In the event that Giant Hogweed is encountered, or thought possibly to be encountered, do not touch the plant and notify MSMD staff immediately.]

2.46 Wetland Habitat – Forebay Condition

Similarly to ponding water, forebay condition is not necessarily an item that will be measured. The field conditions of the forebay should be compared against the design information in the plans of record. Maintenance items and/or changes to the design should be documented in the field notes. Any deficiencies observed should be measured in accordance with the appropriate subsection(s) contained herein.

2.47 Wetland Habitat – Marsh Condition

The plans of record should be reviewed to determine the design and maintenance considerations associated with a designed marsh area. Similarly to Subsection 2.44 and Subsection 2.46, field measurements for any maintenance items within the marsh area should be in accordance with the appropriate subsection(s) contained herein.

2.48 Wetland Habitat – Micropool Condition

Similarly to ponding water, forebay condition, and marsh condition, the micropool condition is not necessarily an item that will be measured. The field conditions of the micropool should be compared against the design information in the plans of record. Maintenance items and/or changes to the design should be documented in the field notes. Any deficiencies observed should be measured in accordance with the appropriate subsection(s) contained herein. Plans should be reviewed in particular for any type of drawdown duration for the micropool to ensure the facility is holding water for the intended length of time.

2.49 Wetland Habitat – Posted Sign(s) Condition

Wetland habitat signage should be reviewed and measured in the field in a similar manner to Subsection 2.

2.50 Wetland Habitat – Tree Removal

Tree removal within the wetland habitat should be measured in accordance with Subsection 2.34.

2.51 Wetland Habitat – Other

Any other non-routine maintenance items associated with the wetland habitat are included within this section. Field measurements (and the associated units of measurement used) should be appropriately selected based upon similar subsections discussed herein.

2.52 Dam / Berm – Toe Soft Spots

Soft spots within 10' of the bottom of slope, or toe, of the dam/berm should be measured. The total area and location(s) of the soft spots should be documented. Inspection crews should also include a qualitative description of the area noting the degree of saturation, possible sources of water contributing to the soft spot, and whether or not the situation appears to be worsening.

2.53 Dam / Berm – Slope Erosion

Areas of erosion found on the dam/berm (or within 10' of the toe of the dam) should be measured in a similar manner to Subsection 2.27. Since the erosion in this case is located on the dam, all areas of erosion should be evaluated and measured in the field as though the erosion could be categorized as major. The area, depth, and a qualitative description (e.g. stabilized, worsening, etc.) of the erosion should be included.

2.54 Dam / Berm – Bare Spots

The location(s) of bare spots observed should be documented and the total area(s) of each measured. Field observations should also include the presence (or lack thereof) and condition of any topsoil in the area.

2.55 Dam / Berm – Cave-In

Cave-ins encountered on the dam/berm should be measured in a similar manner to Subsection 2.28.

2.56 Dam / Berm – Animal Holes

The size and location of all animal holes found on the dam/berm should be accurately depicted. The condition of the hole should also be noted, specifically whether or not it appears as though the hole is actively being used by an animal. Inspection crews should attempt to measure the depth of the animal hole.

2.57 Dam / Berm – Tree Removal

Tree removal on the dam/berm should be measured in the same manner as Subsection 2.34.

2.58 Dam / Berm – Overgrown Vegetation

The location(s) of any overgrown vegetation should be documented and measured in accordance with Subsection 2.15. Attention should be paid to this item to ensure routine maintenance is not included in the scope of work narrative as discussed in Subsection 2.15.

2.59 Dam / Berm – Alterations

Any alterations to the dam/berm not shown on the plans of record should be documented and measured in accordance with the most appropriate subsection(s) discussed herein.

2.60 Dam / Berm – Other

Any other non-routine maintenance items associated with the dam/berm are included within this section. Field measurements (and the associated units of measurement used) should be appropriately selected based upon similar subsections discussed herein.

2.61 Emergency Spillway – Erosion

Areas of erosion within the emergency spillway should be measured in a similar manner to Subsection 2.27. This is not applicable to combined principal/emergency spillway structures.

2.62 Emergency Spillway – Bare Spots

Bare spots observed within the emergency spillway should be measured in a similar manner to Subsection 2.54. This is not applicable to combined principal/emergency spillway structures.

2.63 Emergency Spillway – Overgrown Vegetation

The location(s) of any overgrown vegetation observed on the emergency spillway should be documented and measured in accordance with Subsection 2.15. Attention should be paid to this item to ensure routine maintenance is not included in the scope of work narrative as discussed in Subsection 2.15.

2.64 Emergency Spillway – Blockage

Depending upon the type of emergency spillway, the measurements associated with blockages differ slightly. Blockages of emergency spillways draining via overland flow should be measured in accordance with Subsection 2.32 and Subsection 2.10. Emergency spillways that are structures and drain via a closed conduit system should be evaluated and measured in accordance with Subsection 2.19.

2.65 Emergency Spillway – Tree Removal

Tree removal in the vicinity of the emergency spillway should be measured in a similar manner to Subsection 2.34.

2.66 Emergency Spillway – Other

Any other non-routine maintenance items associated with the emergency spillway are included within this section. Field measurements (and the associated units of measurement used) should be appropriately selected based upon similar subsections discussed herein.

2.67 Upstream Inflows – Spalling

Spalling on upstream inflows should be measured in a similar manner to Subsection 2.7.

2.68 Upstream Inflows – Undermining

Undermining observed at upstream inflows should be measured in a similar manner to Subsection 2.25.

2.69 Upstream Inflows – Separation

Separation associated with upstream inflows should be measured in a similar manner to Subsection 2.22 (separation observed inside the pipe) and Subsection 2.26 (separation observed between the structure and pipe).

2.70 Upstream Inflows – Erosion

Areas of erosion in the vicinity of any upstream inflows should be measured in a similar manner to Subsection 2.27.

2.71 Upstream Inflows – Cave-In

Cave-ins observed in the vicinity of any upstream inflows should be measured in a similar manner to Subsection 2.28.

2.72 Upstream Inflows – Blockage

Blockages observed within the pipes for any upstream inflow should be measured in a similar manner to Subsection 2.19.

2.73 Upstream Inflows – Displaced Rip-Rap

Displaced rip-rap observed at upstream inflows should be measured in a similar manner to Subsection 2.30.

2.74 Upstream Inflows – Overgrown Vegetation

Overgrown vegetation observed at any upstream inflow should be measured in a similar manner to Subsection 2.15.

2.75 Upstream Inflows – Outflow Obstruction

Outflow obstructions located at upstream inflows may be treated as downstream blockages and should be measured in a similar manner to Subsection 2.32.

2.76 Upstream Inflows – Handrail Status

The handrail status at upstream inflows should be evaluated in a similar manner to Subsection 2.3

2.77 Upstream Inflows – Misaligned Joints

Misaligned joints observed at upstream inflows should be measured in a similar manner to Subsection 2.21.

2.78 Pond Flow Low Flow – Sedimentation

Sedimentation with the low flow ditch system should be measured in order to determine the total volume of material to be removed. The total length of the sedimentation within the low flow ditch should be measured. Additional field observations/measurements should include the depth of the sediment to be removed, the geometry of the low flow ditch, any applicable measurements (bottom width, top width, height, etc.), and the vertical height difference between the top of the ditch and the top of the sediment.

2.79 Pond Flow Low Flow – Detoured Flow Line

A detoured flow line is not necessarily an item that will be measured. Instead, inspection crews should investigate the cause of the detoured flow line and determine the field measurements required in accordance with the appropriate subsection(s) contained herein. Causes of detoured flow lines may include blockages, trash and debris, sediment deposition, or overgrown vegetation. Once the cause of the detoured flow line is determined, field measurements should proceed in accordance with the appropriate subsection discussed herein.

2.80 Pond Flow Low Flow – Obstructions

Any obstructions impeding the flow of water within the low flow ditch system should be quantified under this section (the only exception being sediment since this will be measured in accordance with Subsection 2.78). Inspection crews should use discretion based upon field conditions to determine the most appropriate means of quantifying the obstruction. Examples of this include a damaged concrete trickle ditch that is causing a blockage or rip-rap that has washed down from an inflow.

2.81 Pond Flow Low Flow – Erosion/Trenching/Roots

Erosion observed along or beside a low flow ditch system should be measured in accordance with Subsection 2.27. Erosion that has progressed and is causing undermining and/or trenching along or underneath the ditch system should be measured in a similar manner to Subsection 2.25. Roots in the vicinity that are causing damage to the low flow ditch system, or impeding the flow of water within the ditch system, and have been deemed to be removed should be measured as well. The removal of the tree will be in accordance with Subsection 2.34. Inspection crews should measure the distance from the root damage back to the tree should account for the excavation required to remove the severed root. Field measurements should account for any other pertinent information including, but not limited to, the amount of backfill required and whether or not the stump requires removal as well.

2.82 Encroachments / Modifications – Pond

Encroachments and modifications to ponds are typically noted in the visual assessment so that MSMD personnel are aware of the conditions, but usually do not require any actual maintenance to be performed. Items that are causing

encroachments are typically privately owned and, therefore, would be adjusted, relocated, or removed at the owner's expense. Encroachments/modifications to the pond should be relayed to MSMD personnel and only included in the scope of work narrative when directed to do so by MSMD staff.

2.83 Encroachments / Modifications – Embankments

Encroachments and modifications to embankments are typically noted in the visual assessment so that MSMD personnel are aware of the conditions, but usually do not require any actual maintenance to be performed. Items that are causing encroachments are typically privately owned and, therefore, would be adjusted, relocated, or removed at the owner's expense. Encroachments/modifications to the embankment should be relayed to MSMD personnel and only included in the scope of work narrative when directed to do so by MSMD staff.

2.84 Encroachments / Modifications – Spillway

Encroachments and modifications to spillways (either principal or emergency) are typically noted in the visual assessment so that MSMD personnel are aware of the conditions, but usually do not require any actual maintenance to be performed. Items that are causing encroachments are typically privately owned and, therefore, would be adjusted, relocated, or removed at the owner's expense. Encroachments/modifications to the spillway should be relayed to MSMD personnel and only included in the scope of work narrative when directed to do so by MSMD staff.

2.85 Encroachments / Modifications – Modifications

Any modifications to a facility (or its associated components) that affect its design and/or functioning should be well documented in the field. Inspection crews should use their discretion when evaluating modifications to determine the method for obtaining field measurements in accordance with the most appropriate subsection discussed herein. In any case, MSMD staff should be notified of any modifications to a facility.

2.86 Mosquito Habitat Location – Pond Floor

Mosquito habitats usually present themselves due to a separate, underlying maintenance issue (e.g. a blockage is preventing the flow of water or a riser structure's floor is below the outfall invert). The area of ponding, however, may require treatment for the time between the visual assessment and the completion of the required maintenance. Therefore, all mosquito habitats should be measured to estimate the total volume of water to be treated. The surface area and average depth should be noted based upon field observations.

2.87 Mosquito Habitat Location – Outfall

Mosquito habitats usually present themselves due to a separate, underlying maintenance issue (e.g. a blockage is preventing the flow of water or a riser structure's floor is below the outfall invert). The area of ponding, however, may require treatment for the time between the visual assessment and the completion of the required maintenance. Therefore, all mosquito habitats should be measured to estimate the total volume of water to be treated. The surface area and average depth should be noted based upon field observations.

2.88 Mosquito Habitat Location – Other

Mosquito habitats usually present themselves due to a separate, underlying maintenance issue (e.g. a blockage is preventing the flow of water or a riser structure's floor is below the outfall invert). The area of ponding, however, may require treatment for the time between the visual assessment and the completion of the required maintenance. Therefore, all mosquito habitats should be measured to estimate the total volume of water to be treated. The surface area and average depth should be noted based upon field observations.

Following completion of the visual assessment, the inspection form and field notes should be quickly reviewed to ensure all necessary measurements have been obtained. It is recommended to keep a copy of this section in the field for reference while performing visual assessments. The completed inspection form, photos, and field notes will be used in development of the scope of work narrative and cost estimate, and should be reviewed to ensure accuracy and completeness.

3 Preparation of the Scope of Work Narrative and Cost Estimate

This section discusses the preparation of the scope of work narrative and cost estimate. Using the inspection forms and measurements obtained in the field by the inspection crews, the scope of work narrative outlines the required non-routine maintenance required for a facility. The narrative includes a qualitative description, a quantitative description, supporting photographs from the visual assessment for each maintenance item observed in the field, and will be used by the general contractor(s) to develop a proposals to perform the work. The cost estimate will provide MSMD staff an approximate cost of the maintenance work to compare against the cost proposals received from general contractors.

The preparation of the scope of work narrative begins following the QC review of the inspection form and photos for a facility. This will ensure the scope of work narrative includes all required non-routine maintenance items. The following outlines the steps for completing the scope of work narrative:

1. Copy the blank template (J:\STW\SWM_Branch_Assets\Main\Public\Templates\SOW-NARRATIVE.xlsx) to the facility asset folder and rename it to SITEID_FACILITYID_SOW-NARRATIVE.xlsx.

2. Update the facility ID number and date of inspection at the top of the worksheet.

3. Complete the "Visual Condition Assessment Results" section in the top left of the form. This section shall include a short description (qualitative) of each non-routine maintenance item. A photo from the visual assessment should be included in the narrative for each maintenance item listed. The description for each maintenance item should also include a reference to the corresponding photo showing the field conditions prompting the maintenance. [For example, "*1. Spalling observed on riser (see photo 1)*".]

4. Using the field measurements, a corresponding quantity for each maintenance item should be developed and included in the "Scope of Work Description" section of the worksheet. The description in this section should be very similar to the description provided under the Visual Condition Assessment Results section, but should also include the corresponding quantity [For example, "*1. Parge 16 SF on face of riser*].

5. Within the facility's electronic asset folder, save the completed scope of work narrative within the "Inspection" sub-folder.

6. Following completion of the scope of work narrative, the cost estimate should be prepared. A blank copy of the cost estimate should be saved from the public template folder (J:\STW\SWM_Branch_Assets\Main\Public\Templates\SiteID_FacilityID_Non-Routine Cost Estimate.xlsx) and saved to within the same "Inspection" sub-folder as the scope of work narrative.

7. Rename the template to include the Site ID and Facility ID for each pond. The top of the cost estimate worksheet should be updated to include the following information:
    a. Site ID and Facility ID
    b. Date of Inspection
    c. Date of Estimate
    d. Estimate Prepared by (Company Name/Abbreviation)

8. Complete the cost estimate worksheet to include all maintenance items required for the pond. Each item included in the scope of work narrative should be included in the cost estimate.

[Note: The cost estimate worksheet includes those maintenance line items most often observed in the field. In order to provide MSMD staff with the most accurate estimate possible, additional line items deemed necessary by the engineering contractor may be added to the worksheet. These line items should be included under a "Non-Std" line item at the end of the worksheet on a case-by-case basis.]

The deliverables for each public facility undergoing a visual assessment will include an electronic copy of the following:

a. inspection form(s)
b. inspection photos
c. scope of work narrative
d. cost estimate
e. scanned copy of field notes/measurements (if determined necessary on a case-by-case basis by the engineering contractor)

Further discussion of the overall submittal procedure and schedule is included in Section 3.4 of this document.

As with the collection of the field measurements, the preparation of the cost estimate and derivation of the units of measure for each inspection form item varies slightly among the maintenance items. The following subsections discuss each inspection item in greater detail and provide the methodology to convert the field measurements obtained during the visual assessment to the standard units of measure required to complete the cost estimate.

3.1 Site Accessibility

It is difficult to apply a standard methodology to determine an associated cost for the site accessibility inspection item. It is difficult to predict all of the items that may preclude access to a facility. Engineering contractors must use sound engineering judgment while preparing the cost estimate for any non-routine maintenance items falling under this section. A damaged access road, for example, may be included in the cost estimate under line items #43, #44, and #45. Other items included under this section should be evaluated on a case-by-case basis and included in the cost estimate as deemed appropriate by the engineering contractor.

3.2 Structure Accessibility

Specific items pertaining to structure accessibility are discussed in detail in subsequent subsections.

3.3 Facility Sign

The replacement of missing or displaced facility signs will be estimated using cost estimate line items #39 or #40, depending upon whether or not a new sign post is required. This estimate is based on a per sign basis and may be taken directly from the field notes.

3.4 Facility Labeling

No estimate is required for this item. Facility and watershed labeling is included in a separate maintenance process and will not be included in the cost estimate.

3.5 Riser Structure – Pad Lock Missing

No estimate is required for this item. The replacement/furnishing of missing pad locks and chains is included in a separate maintenance process and will not be included in the cost estimate.

3.6 Riser Structure – Trash Rack Missing

Trash racks must be priced on a case by case basis. Based upon either the detail(s) included in the plans of record, the field measurements, or a combination of the two, the total amount of material (steel) used in the fabrication must be determined. The total amount of material should then be converted to a weight to determine the final pricing on a per pound basis.

Low-Flow Trash Rack Estimates: Most low-flow trash racks will need to be designed on an individual basis based upon the plan details or field constraints. The field measurements or plan detail(s) will be used to determine the total amount of steel used. The total amount of material used may be converted to a weight using a standard value equal to 490 lbs. / ft^3. Once the weight is determined, the total price may be estimated using line item #36 from the cost estimate worksheet.

Top Trash Rack Estimates: When available, plan details and/or field measurements should be used to determine the most accurate estimate of the total amount of steel required to fabricate the missing top trash rack. Once the total amount of steel is known, the total cost may be determined in the same manner as above, with the weight of steel estimated to be 490 lbs. / ft^3 and the average cost determined by using line item #37 from the cost estimate worksheet. When plan details are not readily available to determine the required trash rack design, an approximate total weight may be determined by using the VDOT Road & Bridge Standards. For a square riser with a 4'-0" interior dimension and a 5'-4" exterior dimension, the VDOT Road & Bridge Standards estimates the total weight of an acceptable steel trash rack to be 188 pounds. For circular riser structures, the VDOT Road & Bridge Standards estimates the following weights (in pounds):

Riser Interior Dia. (feet)	Approx. Weight of Trash Rack (pounds)
2	46
3	82
4	120
5	169
6	227
7	290
8	341

[Note: The assumed weights above do not include the associated weight of any anti-vortex devices that may be required. Required anti-vortex devices should be calculated separately in accordance with Subsection 3.9]

3.7 Riser Structure – Spalling

The cost to repair spalling on or inside the riser structure is estimated on a square footage basis using line item #19 on the cost estimate worksheet. The total area to be parged should be determined directly from the field measurements.

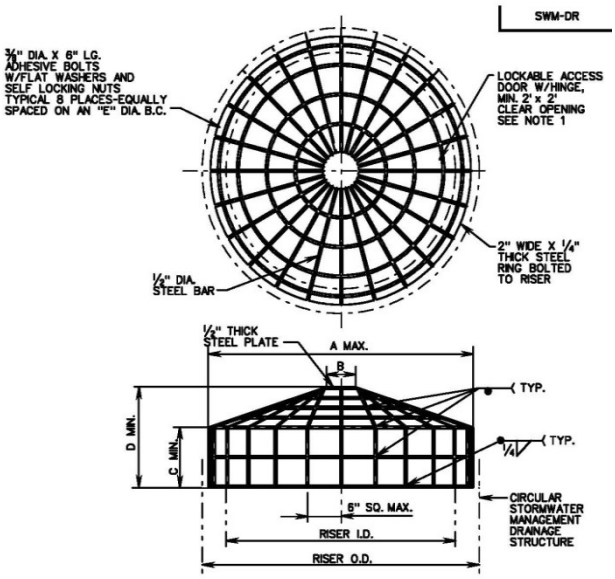
3.8 Riser Structure – Joint Failure

Similarly to Subsection 3.7, joint failure may be repaired through parging. The associated maintenance cost to perform the repairs is also estimated using line item #19 on the cost estimate worksheet. The total area to be parged should be determined directly from the field measurements.

3.9 Riser Structure – Anti-Vortex Condition

If required by the design but not installed in the field, an anti-vortex device should be included in the cost estimate using line item #37. The total amount of material may be calculated based upon the design of the trash rack, which

then may be converted to a total weight to determine the cost on a per pound basis. In the event that the riser structure is also missing the trash rack, the anti-vortex device must be included in addition to the cost of the trash rack. The assumptions made under Subsection 3.6 do not include an anti-vortex device.



RISER		DIMENSION						APPROX.
I.D.	O.D.	A	B	C	D	E	SEGMENT	WT. (LBS.)
24	30	30	6	7	10	27	15	46
36	44	42	6	13	18	40	22	82
48	58	55	9	13	20	53	29	120
60	72	68	9	17	26	66	36	169
72	86	81	9	23	34	79	42	227
84	100	94	12	25	37	92	49	290
96	114	107	12	22	36	105	56	341

Example: A standard 4' circular riser structure is missing its top trash rack. Based upon the design, an anti-vortex device is required. The plan lacks specific design details and only calls out for a "standard trash rack". Since the plans do not specify the trash rack design and there is no trash rack installed in the field to measure, assumptions will be made based upon the VDOT Road & Bridge Standards. The following detail and table is taken from Section 114.07 of the VDOT Road & Bridge Standards:

The total weight may be approximated by determining the total amount of steel:

Area = (48"x13")+[2x(1/2)(19.5")(7")]+(9"x7")

Area = 823.5 sq. in.

Assuming ½" thick plate, the volume equals:

V = (823.5 sq. in.) x (1/2") = 411.75 cu. in.

Converting this to cubic feet results in a total volume of steel equal to 0.238 cubic feet.

The total weight may then be approximated at W = (0.238 cu. feet) x (490 lbs./ft^3) = 116.75 lbs.

The total cost is then estimated to be 116.75 lbs. at a unit cost of $10.50/lbs, or $1,225.88.

3.10 Riser Structure –Trash Rack Blockage

For typical blockages, inspection crews will simply note in the field that removal of debris is required from the low-flow trash rack. These smaller, routine blockages should be included in the cost estimate on a per facility basis using line item #66. Typical blockages include minor sediment, leaves, grass clippings, trash, and small debris (sticks, branches, etc.).

Non-typical blockages should be included in the cost estimate using line item #17. Field measurements will include the necessary measurements in these instances to determine the total cubic feet of debris to be removed. Non-typical blockages estimated using line item #17 may include large debris (logs, fallen trees, etc.) or an unusually large amount of small debris. In cases where the blockage is a result of a large amount of sediment, the engineering contractor should use sound judgment based upon field conditions to evaluate whether or not the cost should be

estimated using line item #17 or additional costs should be accounted for through the use of line item #69.

3.11 Riser Structure –Orifice Blockage

Small orifice blockages may be estimated using cost estimate line item #66 in a similar manner to Subsection 3.10. Additional costs should also be evaluated to determine whether or not any non-standard items should be included in the cost estimate (for example, if the orifice blockage is preventing the pond from draining, costs for dewatering services may be warranted).

3.12 Riser Structure – Top Trash Rack Blockage

Estimate preparation associated with top trash rack blockages should be performed in the same general manner as Subsection 3.10. Typical top trash rack blockages should be distinguished from low-flow trash rack blockages by using line item #67 on the cost estimate worksheet in lieu of line item #66.

3.13 Riser Structure – Manhole Condition

Non-routine maintenance work associated with the "Riser Structure – Manhole Condition" inspection item varies in nature to the degree that the engineering contractor should use sound judgment to determine the most appropriate line item(s) on a case by case basis. Non-standard items should be included in the cost estimate as conditions warrant.

3.14 Riser Structure – Inside Riser Blockage

Inside riser blockages should be included in the cost estimate using line item #17. The total volume (cubic feet) of the blockage may be determined directly from the field measurements. When field conditions prevent inspection crews from obtaining direct measurements of the blockage, the engineering contractor should use their best judgment while preparing the scope of work narrative and cost estimate based upon field conditions, photos, and known data.

3.15 Riser Structure –Vegetation/External Obstructions

Removal of vegetation that prohibits or restricts access to the riser should be included in the cost estimate using line items #1 though #8 as applicable. General clearing of overgrown vegetation, woody stock, and/or trees up to 2" in diameter should be estimated using line item #1 on a per tenth-acre basis. The field measurements should include the total area (square feet) of the overgrown vegetation. Unit conversion may then be applied directly to the field measurements for inclusion in the cost estimate. Any trees greater than 2" in diameter should be estimated using line items #2 though #6 as applicable. Typical tree removal involves cutting the tree at ground level and leaving the stump in place; additional costs for stump removal should be included on a case-by-case basis as field conditions warrant.

Other external obstructions (e.g. fences, walls, etc.) should be included in the cost estimate using an appropriate line item. In cases where no line item is applicable, the engineering contractor should include a non-standard line item to account for the cost(s). Examples may include the removal and/or resetting of a fence (non-standard line item) or the removal of sediment or debris that has buried the access (line item #17).

3.16 Riser Structure – Ladder/Steps Condition

The repair to, or replacement of, access ladders and steps for a facility should be included in the scope of work narrative using appropriate units (e.g. total number of steps to install or repair; total height of ladder; etc.). Inclusion in the cost estimate will most likely be through the addition of a non-standard line item.

3.17 Riser Structure – Other

Engineering contractors should use sound judgment to include any maintenance items scored under this category using the appropriate line item(s) in the cost estimate worksheet. Non-standard line items should be added to the cost estimate as deemed necessary on a case-by-case basis.

3.18 Principal Spillway Pipe – Spalling

Estimate preparation associated with spalling on the Principal Spillway Pipe (PSP) should be performed in the same manner as Subsection 3.7.

3.19 Principal Spillway Pipe – Blockage

Blockages of the PSP should be estimated using cost estimate line item #17 on a per cubic yard basis. Field measurements of the diameter, length, and depth of material should be available when preparing the scope of work narrative and cost estimate. The volume of sediment may be estimated through the volume of a cylinder. Multiplying the total volume of the pipe by the percentage of the pipe blocked results in the volume of material to be removed within an acceptable tolerance.

Example: approximately 33% of a 65'-18" PSP is blocked with sediment. The blockage is observed at both the upstream and downstream end of the PSP indicating the pipe is blocked for its entire length.

Calculate the total volume of the pipe: $V = \pi r^2 l$

$V = \pi(0.75^2)(65)$

$V = 114.86\ ft^3$

Multiply the percentage blocked by the total volume: $V_{remove} = (33\%)(114.86\ ft^3)$

$V_{remove} = 37.90\ ft^3$

$V_{remove} = \pm 38\ ft^3$

$V_{remove} = \pm 1.41\ yd^3$

This would result in an approximate cost of $42.30 (1.41 yd^3 x $30.00/$yd^3$)

Minor blockages of the PSP by materials such as sediment, leaves, and debris may be estimated using line item #18 (Power flush storm pipe) on a per linear foot basis. In these cases, the total length of the PSP should be used in the estimate.

3.20 Principal Spillway Pipe – Joint Failure

Estimate preparation associated with PSP joint failure should be performed in the same manner as Subsection 3.8.

3.21 Principal Spillway Pipe – Misaligned Joints

Pipes with minor misalignments (scored a 3) may be repaired through parging and the associated cost estimated on a square footage basis using line item #19 on the cost estimate worksheet. The total area to be parged should be determined from the field measurements (field measurements should include diameter of pipe and length of gap). It should be assumed that 1" on each side of the gap will also be parged. Therefore, the area to be parged may be determined by adding 2" to the gap width and multiplying this total width by the interior circumference of the pipe (where the interior circumference is C=πd).

Example: A 15" PSP is observed have misaligned joints that have a gap width equal to 1".

The total area to be parged is: $A = (1" + 2") \times (\pi \times 15")$

$A = (3") \times (47.12")$

$A = 141.36$ sq. in.

$A = 0.98$ sq. ft.

$A = 1$ sq. ft.

The cost may then be estimated to be approximately $50.00 (unit cost equal to $50.00 per sq. ft.)

Direct measurement of the misalignment is preferred; however, due to confined space entry restrictions, field crews are not always able to obtain direct measurements. In instances where the misalignment distance (gap width) is approximated, the cost estimate should still be prepared in the manner described above.

Furthermore, due to field limitations, misaligned joints may not be observed until returning to the office and editing the photos (i.e. a joint may not be readily visible in the field due to poor light, but a minor misalignment is revealed while processing/lightening the photos in the office). In this case, the gap width should still be approximated if feasible and the cost estimated in the manner described above. In those instances where a valid approximation of the total square footage to be parged may not be obtained, the repair should be estimated in accordance with cost estimate line item #20. The total cost will be estimated based upon a per joint cost equal to $75.00.

Repair to pipes with major misaligned joints varies by the extent of repair necessary. Prior to preparation of the scope of work narrative, it is recommended the engineering contractor discuss the situation with MSMD staff. Major misalignments within the PSP for facilities with short pipe runs, small embankments, etc. will most likely be included in the scope of work narrative. Descriptions under the "Visual Condition Assessment Results" and "Scope of Work Description" should be limited to simple descriptions such as "Repair misaligned joints within PSP" so as to not prescribe means and methods to the contractor(s). The cost estimate portion, however, should include all required line items to complete the work. This may include line items to perform all aspects of the non-routine maintenance such as excavation, the removal and re-setting of the pipe, backfill, topsoil and seeding, restoration of disturbed areas, erosion control measures, etc. Guidance from MSMD staff regarding the approach to the preparation of the scope of work narrative is recommended in order to decrease unnecessary iterations of the estimate. The goal in this case would be to know prior to completion of the scope of work narrative whether a maintenance contractor would perform the work or if the repairs would require design and bidding under a MSMD project.

3.22 Principal Spillway Pipe – Separation

The minor separation of pipes (scored a 3) may be repaired through parging and the associated cost estimated on a square footage basis using line item #19 on the cost estimate worksheet. The total area to be parged should be determined from the field measurements (field measurements should include diameter of pipe and length of gap). It should be assumed that 1" on each side of the gap will also be parged. Therefore, the area to be parged may be determined by adding 2" to the gap width and multiplying this total width by the interior circumference of the pipe (where the interior circumference is $C=\pi d$).

Example: An 18" PSP is observed to be separated from the outfall structure by 2".

The total area to be parged is:

$$A = (2" + 2") \times (\pi \times 18")$$
$$A = (4") \times (56.55")$$
$$A = 226.19 \text{ sq. in.}$$
$$A = 1.57 \text{ sq. ft.}$$

The cost may then be estimated to be approximately $78.50 (unit cost equal to $50.00 per sq. ft.)

Similarly to Subsection 3.21, this is the preferred method of approximating the cost associated with the repair of minor pipe separation. However, due to confined space entry restrictions, field crews are not always able to obtain direct measurements. In instances where the separation distance (gap width) is approximated, the cost estimate should still be prepared in the manner described above.

Furthermore, due to field limitations, joints with separation may not be observed until returning to the office and editing the photos (i.e. a joint may not be readily visible in the field due to poor light, but a minor separation is revealed while

processing/lightening the photos in the office). In this case, the gap width should still be approximated if feasible and the cost estimated in the manner described above. In those instances where a valid approximation of the total square footage to be parged may not be obtained, the repair should be estimated in accordance with cost estimate line item #20. The total cost will be estimated based upon a per joint cost equal to $75.00.

Repair to major separation varies by the extent of repair necessary and the PSP material type. Prior to preparation of the scope of work narrative, it is recommended the engineering contractor discuss the situation with MSMD staff. Major separation within the PSP for facilities with short pipe runs, small embankments, etc. will most likely be included in the scope of work narrative. Descriptions under the "Visual Condition Assessment Results" and "Scope of Work Description" should be limited to simple descriptions such as "Repair separation within PSP" so as to not prescribe means and methods to the contractor(s). The cost estimate portion, however, should include all required line items to complete the work. This may include line items to perform all aspects of the non-routine maintenance such as excavation, the removal and re-setting of the pipe, the installation of a pipe collar, backfill, topsoil and seeding, restoration of disturbed areas, erosion control measures, etc. Guidance from MSMD staff regarding the approach to the preparation of the scope of work narrative is recommended in order to decrease unnecessary iterations of the estimate. The goal in this case would be to know prior to completion of the scope of work narrative whether a maintenance contractor would perform the work or if the repairs would require design and bidding under a MSMD project.

3.23 Principal Spillway Pipe – Other

Engineering contractors should use sound judgment to include any maintenance items scored under this category using the appropriate line item(s) in the cost estimate worksheet. Non-standard line items should be added to the cost estimate as deemed necessary on a case-by-case basis.

3.24 Outfall Downstream – Spalling

Estimate preparation associated with spalling on the downstream outfall structure should be performed in the same manner as Subsection 3.7.

3.25 Outfall Downstream – Undermining

Minor undermining should be based upon the required volume of material required to stabilize the ground beneath the outfall structure. The total volume may be estimated directly from the field measurements. This volume should then be inflated by 10% to account for soil compaction/shrinking/swelling. The cost to repair the undermining may then be estimated using line item #11 on the cost estimate worksheet.

Severe undermining may require the inclusion of non-standard line items in addition to line item #11. The undermining may be severe enough that there is damage to the outfall structure and/or pipe. Additional items such as repair to, or replacement of, the outfall structure or pipe should be included in the cost estimate through a non-standard line item as field conditions warrant.

3.26 Outfall Downstream – Separation

Minor separation between the PSP and downstream outfall structure should be included in the cost estimate using line item #20 (Parge existing joints or junction to structure). Major separation must be evaluated on a case-by-case basis to include all required items (either standard or non-standard line items) in the cost estimate. Items included in addition to line item #20 may include the replacement of the outfall structure and/or pipe, controlled fill to stabilize the area, and erosion control measures.

3.27 Outfall Downstream – Erosion

Downstream erosion will most often be repaired through the installation of rip-rap in accordance with cost estimate line items #32 through #35. The area in need of repair may be obtained directly from the field measurements and estimated using a per square yard unit cost.

Other factors to consider while preparing the scope of work narrative and cost estimate for repair of eroded areas include:

- Minor areas of erosion to be stabilized through re-establishment of ground cover (e.g. minor erosion that may be repaired through seeding or sodding) should be included in the cost estimate using line items #56, #57, #58, and #59 as appropriate.
- The installation of erosion and sediment controls should be included in the cost estimate as warranted by field conditions. If deemed required, these items should be included using line items #51 - #55 as appropriate.
- Areas of significant erosion to be stabilized through the import and compaction of soil (in lieu of rip-rap) should be included using line #11 and estimated on a volume (cubic yards) basis.
- Consideration to the use of grouted rip-rap should be given for locations subject to flow with large volumes or high velocities.
- Areas of erosion located along tributaries or perennial streams may also warrant consideration of gabion baskets using cost estimate line item #38.

3.28 Outfall Downstream – Cave-In

Cave-ins not located on the dam will most often be repaired and stabilized using controlled fill and may be included in the cost estimate using line item #11. The field measurements should be used to obtain the total volume of the cave-in. This volume should then be inflated by 10% to account for soil compaction/shrinking/swelling.

3.29 Outfall Downstream – Blockage

Estimate preparation associated with blockage within the downstream outfall pipe(s) should be performed in the same manner as Subsection 3.19.

3.30 Outfall Downstream – Displaced Rip-Rap

The area of rip-rap to be installed should be taken directly from the field measurements, converted to a total area in square yards, and included in the cost estimate using line item #32, #33, #34, or #35 as applicable.

3.31 Outfall Downstream – Overgrown Vegetation

Overgrown vegetation in the vicinity of the outfall structure should be measured in the field in a manner similar to Subsection 3.15.

3.32 Outfall Downstream – Downstream Blockage

The removal of downstream blockages should be included in the cost estimate using the most appropriate line item based upon the type of blockage. Blockages caused by trees and debris, for example, may be included in the cost estimate on a cubic yard basis using line item #17. Other cases may involve using line item #69 for blockages caused by excessive amounts of sediment or line item #70 for blockages caused by rip-rap. Sound judgment should be used to apply the most applicable cost estimate item based upon the type of blockage, field measurements, and field observations.

3.33 Outfall Downstream – Handrail Status

Replacement of handrail should be included in the cost estimate using the dimensions obtained in the field. The cost should be included in the estimate using either line item #46 or #47 for HR-1 or HR-2, respectively.

3.34 Outfall Downstream – Tree Removal

The descriptions included in the scope of work narrative for the removal of trees should provide the total number of trees to be removed and their associated diameters. Examples of such descriptions may be similar to "Remove 2-4" diameter trees at outfall" or "Remove 1-8" tree and 3-12" trees at outfall".

Standard costs for tree removals (based upon diameter size) are included in the cost estimate worksheet in line items #2 through #6. The total number of trees to be removed in each size range should be included based upon the field measurements.

[Note: It should be noted that the removal of trees does not include the removal of the stump or associated root system. In most cases, the tree will be cut at ground level and the stump/roots left in place. Individual cases requiring the removal of a tree's stump should be included in the cost estimate using line items #7 and/or #8 as applicable.]

3.35 Pond Floor – Silted-In/Debris 75%

Typically, this item will not be included in the scope of work estimate as the removal of sediment from a pond that is 75% silted in is performed under a separate MSMD project. Should MSMD staff determine a facility is in need of sediment removal, the maintenance shall be performed under a separate sediment removal project with pre- and post-removal as-built surveys. In the event that this maintenance item is included in the scope of work narrative and cost estimate, the total sediment to be removed should be estimated in cubic yards and included in the cost estimate using line item #69.

3.36 Pond Floor – Trash/Debris Removal

Trash and debris removal should be estimated using line item #17 on the cost estimate. The total cubic yards of material to be removed should be able to be directly obtained from the field measurements.

3.37 Pond Floor – Tree/Vegetation Removal

Estimate preparation for the removal of trees and vegetation on the pond floor should be performed in a similar manner to Subsection 3.15 and Subsection 3.34.

3.38 Pond Floor – Other

Engineering contractors should use sound judgment to include any maintenance items scored under this category using the appropriate line item(s) in the cost estimate worksheet. Non-standard line items should be added to the cost estimate as deemed necessary on a case-by-case basis.

3.39 Wetland Habitat – Trash and Debris

Trash/debris removal within a wetland habitat should be performed in a similar manner to Subsection 3.36.

3.40 Wetland Habitat – Bare Spots

The total area of the bare spot within the wetland habitat should be determined in square yards based upon field measurements. The cost estimate may then be prepared using line item #60 and line item #61 if the installation of topsoil is necessary based upon field conditions.

3.41 Wetland Habitat – Sediment Deposition

Estimate preparation for the removal of sediment within a wetland habitat should be performed in a similar manner to Subsection 3.35 and included in the cost estimate using line item #69.

3.42 Wetland Habitat – Condition of Plants

Field measurements should include a total count of dead and/or dying trees and shrubs. The replacement of these dead or dying trees and shrubs should be included in the cost estimate using line items #64 and #65.

3.43 Wetland Habitat – Erosion

Estimate preparation for erosion within a wetland habitat should be performed in a similar manner to Subsection 3.27.

3.44 Wetland Habitat – Ponding Water

Ponding water results from a separate, underlying maintenance item and should be included within the scope of work narrative and cost estimate under the applicable subsection(s) from this document.

3.45 Wetland Habitat – Undesired Vegetation

Undesired vegetation removal should be included in the scope of work narrative based on an area, which may be computed directly from field measurements. The removal of the undesired vegetation should be included in the cost estimate using line item #1 for general removal operations. Further coordination with MSMD staff is recommended for non-typical scenarios that may involve chemical treatment of the area or coordination with a certified arborist. Any additional items needed should be included in the cost estimate as a non-standard item.

3.46 Wetland Habitat – Forebay Condition

Similarly to Subsection 3.44, a facility's forebay condition is not necessarily an item that will be included in the scope of work. Any maintenance items observed should be included in the scope of work narrative using the appropriate subsection(s) contained herein and included in the cost estimate using an appropriate line item.

3.47 Wetland Habitat – Marsh Condition

The plans of record should be reviewed to determine the design and maintenance considerations associated with a designed marsh area. Similarly to Subsection 3.44 and Subsection 3.46, field measurements for any maintenance items within the marsh area should be in accordance with the appropriate subsection(s) contained herein.

3.48 Wetland Habitat – Micropool Condition

Similarly to ponding water, forebay condition, and marsh condition, the micropool condition is not necessarily an item that will be included in the scope of work. The field conditions of the forebay should be compared against the design information in the plans of record. Maintenance items and/or changes to the design documented in the field notes should be reviewed for inclusion in the scope of work in accordance with the appropriate subsection(s) contained herein.

3.49 Wetland Habitat – Posted Sign(s) Condition

Estimate preparation associated with wetland habitat signage should be performed in a similar manner to Subsection 3.3. The replacement of missing or damaged water quality signs should be included in the cost estimate using line item #41.

3.50 Wetland Habitat – Tree Removal

Estimate preparation for the removal of trees within the wetland habitat should be performed in a similar manner to Subsection 3.34.

3.51 Wetland Habitat – Other

Engineering contractors should use sound judgment to include any maintenance items scored under this category using the appropriate line item(s) in the cost estimate worksheet. Non-standard line items should be added to the cost estimate as deemed necessary on a case-by-case basis.

3.52 Dam / Berm – Toe Soft Spots

Similarly to ponding water, forebay condition, marsh condition, and micropool condition, dam/berm soft spots is not necessarily an item that will be included in the scope of work since it is caused by a failure of something else. Maintenance associated with the repair of soft spots should be included in the scope of work in accordance with the appropriate subsection(s) contained herein. Associated costs included in the cost estimate should capture the necessary repairs to correct the problem(s) causing the toe soft spots and the repair/stabilization of the soft spots (line item #11).

3.53 Dam / Berm – Slope Erosion

Estimate preparation for the repair to slope erosion on the dam/berm should be performed in a similar manner to Subsection 3.27. Special attention should be to the plans of record to determine any geotechnical requirements associated with the fill/compaction associated with the dam.

3.54 Dam / Berm – Bare Spots

Bare spots located on the dam/berm will be repaired through either seeding or sodding. The total area (square yards) may be determined directly from the field measurements. Areas to be repaired through seeding should be included in the scope of work narrative and cost estimate using line item #58 or #59, while areas to be repaired through the installation of sod should be included using line item #56 or #57. Consideration should also be given to whether or not conditions warrant erosion control measures (such as straw, jute mesh, etc.).

3.55 Dam / Berm – Cave-In

Estimate preparation for cave-ins encountered on the dam/berm should be performed in a similar manner to Subsection 3.28. Since the cave-in is located on the dam/berm, the establishment of ground cover should be promoted. A minimum 6" of topsoil should be included using cost estimate line item #61 and seeding for the area should be included using line item #58. Since the cave-in is located on the dam embankment, structural integrity is critical. As conditions warrant, significant cave-ins should be repaired through the use of flowable fill (soil-cement slurry) and estimated using line item #12 in the cost estimate.

3.56 Dam / Berm – Animal Holes

The repair and stabilization of animal holes on the dam/berm will be repaired in the same manner as cave-ins. Therefore, this item should be prepared in a similar manner to Subsection 3.28 and Subsection 3.55.

3.57 Dam / Berm – Tree Removal

Estimate preparation for the removal of trees on the dam/berm should be performed in a similar manner to Subsection 3.34.

3.58 Dam / Berm – Overgrown Vegetation

Overgrown vegetation on the dam/berm should be described and estimated in a manner similar to Subsection 3.15.

3.59 Dam / Berm – Alterations

Any alterations to the dam/berm not shown on the plans of record should be documented and estimated in accordance with the most appropriate subsection(s) discussed herein.

3.60 Dam / Berm – Other

Engineering contractors should use sound judgment to include any maintenance items scored under this category using the appropriate line item(s) in the cost estimate worksheet. Non-standard line items should be added to the cost estimate as deemed necessary on a case-by-case basis.

3.61 Emergency Spillway – Erosion

Areas of erosion within the emergency spillway should be measured in a similar manner to Subsection 3.27. This is not applicable to combined principal/emergency spillway structures.

3.62 Emergency Spillway – Bare Spots

Bare spots observed within the emergency spillway should be measured in a similar manner to Subsection 3.54. This is not applicable to combined principal/emergency spillway structures.

3.63 Emergency Spillway – Overgrown Vegetation

The location(s) of any overgrown vegetation observed on the emergency spillway should be described and estimated in a manner similar to Subsection 3.15.

3.64 Emergency Spillway – Blockage

Depending upon the type of emergency spillway, the scope of work preparation associated with blockages differs slightly. Blockages of emergency spillways draining via overland flow should be prepared in accordance with Subsection 3.32 and Subsection 3.10. Emergency spillways that are structures and drain via a closed conduit system should be evaluated and estimated in accordance with Subsection 3.19.

3.65 Emergency Spillway – Tree Removal

Estimate preparation for the removal of trees on the emergency spillway should be performed in a similar manner to Subsection 3.34.

3.66 Emergency Spillway – Other

Engineering contractors should use sound judgment to include any maintenance items scored under this category using the appropriate line item(s) in the cost estimate worksheet. Non-standard line items should be added to the cost estimate as deemed necessary on a case-by-case basis.

3.67 Upstream Inflows – Spalling

Estimate preparation associated with spalling on upstream inflows should be performed in the same manner as Subsection 3.7.

3.68 Upstream Inflows – Undermining

Undermining observed at upstream inflows should be measured in a similar manner to Subsection 3.25.

3.69 Upstream Inflows – Separation

Separation associated with upstream inflows should be prepared in a similar manner to Subsection 3.22 (separation observed inside the pipe) and Subsection 3.26 (separation observed between the structure and pipe).

3.70 Upstream Inflows – Erosion

Areas of erosion in the vicinity of any upstream inflows should be described and prepared in a similar manner to Subsection 3.27.

3.71 Upstream Inflows – Cave-In

Estimate preparation for cave-ins observed in the vicinity of any upstream inflows should be performed in a similar manner to Subsection 3.28.

3.72 Upstream Inflows – Blockage

Blockages observed within the pipes for any upstream inflow should be described and estimated in a similar manner to Subsection 3.19.

3.73 Upstream Inflows – Displaced Rip-Rap

Displaced rip-rap observed at upstream inflows should be described and estimated in a similar manner to Subsection 3.30.

3.74 Upstream Inflows – Overgrown Vegetation

Overgrown vegetation observed at any upstream inflow should be described and estimated in a similar manner to Subsection 3.15.

3.75 Upstream Inflows – Outflow Obstruction

Outflow obstructions located at upstream inflows may be treated as downstream blockages and should be described and estimated in a similar manner to Subsection 3.32.

3.76 Upstream Inflows – Handrail Status

The handrail status at upstream inflows should be evaluated in a similar manner to Subsection 3.33.

3.77 Upstream Inflows – Misaligned Joints

Misaligned joints observed at upstream inflows should be described and estimated in a similar manner to Subsection 3.21.

3.78 Pond Flow Low Flow – Sedimentation

The volume of sediment present within the low flow ditch system may be determined directly from the field measurements (measurements should include the depth of sediment, the total distance the sediment is observed, and the ditch geometry). The total amount of sediment should be described in cubic yards in the scope of work narrative and included in the cost estimate using line item #69.

3.79 Pond Flow Low Flow – Detoured Flow Line

Detoured flow lines result from separate, underlying maintenance items and should be included within the scope of work narrative and cost estimate under the applicable subsection(s) from this document.

3.80 Pond Flow Low Flow – Obstructions

Obstructions in the low flow ditch system may be thought of as anything impeding the flow of water (the only exception being sediment since this will be prepared in accordance with Subsection 3.78). Obstructions should be described and estimated on a case-by-case basis. Inspection crews will need to use their discretion based upon field conditions to determine the most appropriate means of quantifying the obstruction. Descriptions and units of measure in the scope of work narrative and inclusion in the cost estimate should be done in accordance with the most appropriate subsection contained herein. Examples include, but are not limited to rip-rap (measured in square yards and estimated using cost estimate line item #70) and trash/debris (measured in cubic feet and estimated using cost estimate line item #17). Engineering contractors should use sound judgment to apply the most applicable line item(s) in the cost estimate based upon the nature of the obstruction.

3.81 Pond Flow Low Flow – Erosion/Trenching/Roots

Erosion observed along or beside a low flow ditch system should be described and estimated in accordance with Subsection 3.27. Erosion that has progressed and is causing undermining and/or trenching along or underneath the ditch system should be described and estimated in a similar manner to Subsection 3.25. Roots in the vicinity that are causing damage to the low flow ditch system, or impeding the flow of water within the ditch system, will require removal. The removal of the tree should be prepared in accordance with Subsection 3.34, but will not include any estimate associated with the removal of the root system. For estimating purposes, it should be assumed the root(s) causing the maintenance item will be cut 10' from the ditch and removed.
The cost estimate should include any required excavation (line items #9 and #10), backfill (line item #11), and stump removal if warranted by field conditions (line item #7 or #8).

3.82 Encroachments / Modifications – Pond

Items under this category falling under the County's maintenance responsibility should be included in the scope of work narrative and cost estimate under the most applicable line item(s). However, it is important to note that encroachments and modifications to ponds are typically noted in the visual assessment so that MSMD personnel are aware of the conditions, but usually do not require any actual maintenance to be performed. Encroachments are typically privately owned and, therefore, would be adjusted, relocated, or removed at the owner's expense. Encroachments/modifications to the pond should be relayed to MSMD personnel and only included in the scope of work narrative when directed to do so by MSMD staff.

3.83 Encroachments / Modifications – Embankments

Items under this category falling under the County's maintenance responsibility should be included in the scope of work narrative and cost estimate under the most applicable line item(s). However, it is important to note that encroachments and modifications to embankments are typically noted in the visual assessment so that MSMD personnel are aware of the conditions, but usually do not require any actual maintenance to be performed. Encroachments are typically privately owned and, therefore, would be adjusted, relocated, or removed at the owner's expense. Encroachments/modifications to the pond should be relayed to MSMD personnel and only included in the scope of work narrative when directed to do so by MSMD staff.

3.84 Encroachments / Modifications – Spillway

Items under this category falling under the County's maintenance responsibility should be included in the scope of work narrative and cost estimate under the most applicable line item(s). However, it is important to note that encroachments and modifications to spillways are typically noted in the visual assessment so that MSMD personnel are aware of the conditions, but usually do not require any actual maintenance to be performed. Encroachments are typically privately owned and, therefore, would be adjusted, relocated, or removed at the owner's expense. Encroachments/modifications to the pond should be relayed to MSMD personnel and only included in the scope of work narrative when directed to do so by MSMD staff.

3.85 Encroachments / Modifications – Modifications

Engineering contractors should use sound judgment to include any maintenance items scored under this category using the appropriate line item(s) in the cost estimate worksheet. Non-standard line items should be added to the cost estimate as deemed necessary on a case-by-case basis.

3.86 Mosquito Habitat Location – Pond Floor

Engineering contractors should use sound judgment to include any maintenance items scored under this category using the appropriate line item(s) in the cost estimate worksheet. Non-standard line items should be added to the cost estimate as deemed necessary on a case-by-case basis. Conditions should be evaluated to determine whether an area requires treatment/mosquito control or if the situation is being caused by an underlying maintenance item. Areas of mosquito habitat to be treated should be added to the cost estimate using a non-standard line item. Coordination with MSMD staff in these situations is recommended.

3.87 Mosquito Habitat Location – Outfall

Engineering contractors should use sound judgment to include any maintenance items scored under this category using the appropriate line item(s) in the cost estimate worksheet. Non-standard line items should be added to the cost estimate as deemed necessary on a case-by-case basis. Conditions should be evaluated to determine whether an area requires treatment/mosquito control or if the situation is being caused by an underlying maintenance item. Areas of mosquito habitat to be treated should be added to the cost estimate using a non-standard line item. Coordination with MSMD staff in these situations is recommended.

3.88 Mosquito Habitat Location – Other

Engineering contractors should use sound judgment to include any maintenance items scored under this category using the appropriate line item(s) in the cost estimate worksheet. Non-standard line items should be added to the cost estimate as deemed necessary on a case-by-case basis. Conditions should be evaluated to determine whether an area requires treatment/mosquito control or if the situation is being caused by an underlying maintenance item. Areas of mosquito habitat to be treated should be added to the cost estimate using a non-standard line item. Coordination with MSMD staff in these situations is recommended.

4 Submittal Procedure

The fourth goal of this document is to standardize the procedure for identifying non-routine maintenance needs at County owned and maintained facilities. It is the goal of Fairfax County MSMD to streamline the identification, documentation, scheduling, and completion of non-routine maintenance at these facilities. It is the intent of this standard procedure to reduce the time between the completion of routine maintenance and the scheduling and completion of non-routine maintenance. In order to do so, there are a number of milestones that must be met by those involved (namely the general contractor, engineering contractor, and MSMD staff). The following outlines the steps from the completion of routine maintenance to the scheduling of any required non-routine maintenance, and duration of each, so that the entire process is limited to approximately two (2) months:

1. Routine maintenance is performed by general contractor under the County assigned mow package.

2. Within seven (7) days of the completion of the routine maintenance, the engineering contractor completes the visual assessment for the facility, completes the inspection forms, and obtains all field measurements/data required for the preparation of the scope of work narrative and cost estimate. *[Cumulative time = 7 days or 0.25 month]*

3. Following completion of the visual assessment field work, the engineering contractor prepares the scope of work narrative and cost estimate and submits all deliverables to MSMD staff for review. Electronic submittal of all deliverables should be made within 14 – 21 days from the date of inspection. *[Cumulative time = 28 days or 1.0 month]*

4. MSMD personnel review the inspection form, photos, scope of work narrative, and cost estimate within seven (7) days of receiving the electronic submittals from the engineering contractor. Following review and approval, MSMD personnel distribute the scope of work narrative in accordance with the routing method determined by MSMD staff. *[Cumulative time = 35 days or 1.17 months]*

5. MSMD receives cost proposal from general contractor(s) within seven (7) days of distribution. *[Cumulative time = 42 days or 1.40 months]*

6. Within seven (7) days from receipt, MSMD staff finalizes authorization for completion of the work and notifies the landowner on which the work is to be performed. *[Cumulative time = 49 days or 1.63 months]*

7. Fourteen (14) days from final authorization the non-routine maintenance work is scheduled for completion. *[Cumulative time = 63 days or 2.10 months]*

A graphical representation of this Public Pond Non-Routine Maintenance Work Flow Process may be found in Appendix C.

Appendix A: Scope of Work Narrative

Fairfax County Maintenance and Stormwater Management Division
Non-Routine Maintenance Scope of Work

0000DP
00/00/1900

Routing:

VISUAL CONDITION ASSESSMENT RESULTS	SCOPE OF WORK DESCRIPTION
1. (See photo -)	1
2. (See photo -)	2
3. (See photo -)	3
4. (See photo -)	4
5. (See photo -)	5
6. (See photo -)	6

Photo 1	Photo 4
Photo 2	Photo 5
Photo 3	Photo 6

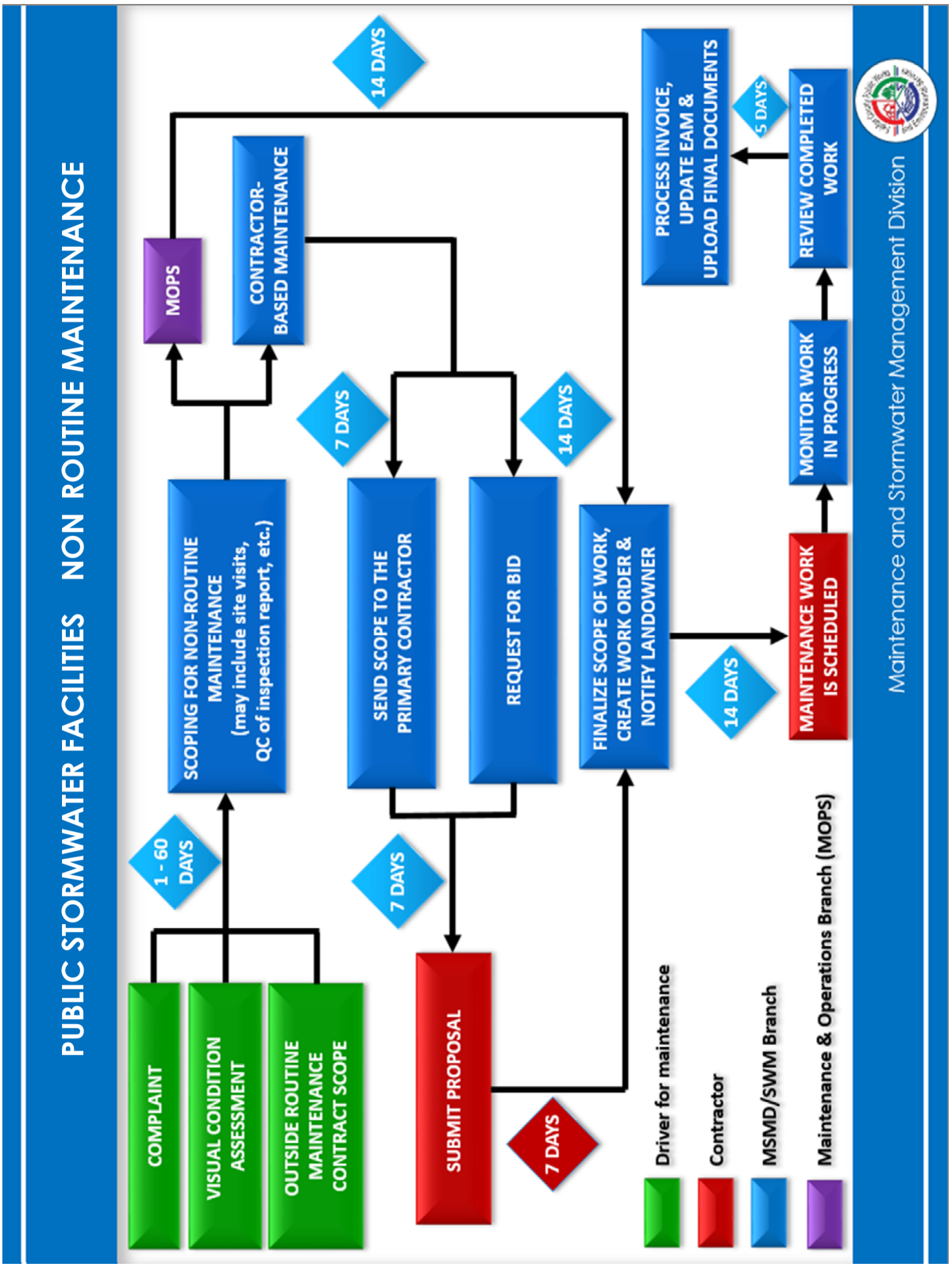
Appendix B: Non-Routine Maintenance Cost Estimate

NON-ROUTINE MAINTENANCE COST ESTIMATE
xxxxS / xxxxDP
Mow Package # XXX (FYXX)
Date of Inspection: xx/xx/20xx
Date of Estimate: xx/xx/20xx
Estimate Prepared by: XXX

ITEM NO.	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	COST
1	**Mowing / Clearing** (includes removal & proper disposal of all woody stock, brush, & trees up to 2-inch diameter)		0.1 acre	$ 74.00	$ -
2	**Pond Control Structure/Riser Clearing** (includes removal & disposal of trash, debris, floatables, & other material from directly around and on top of the control structure/riser)		CY	$ 30.00	$ -
3	**Pond Low-Flow Channel Clearing (25' Radius)** (includes removal & disposal of trash, debris, floatables, & other material from pond channels & trash rack within 25' radius of control structure/riser)		EA	$ 181.00	$ -
4	**Shoreline Clean-Up** (includes removal & disposal of trash & debris from 15' of wet side and 15' of dry side of WSE)		0.1 acre	$ 750.00	$ -
5	**Trash/Debris Removal & Disposal**		CY	$ 164.00	$ -
6	**Repair/Replace Facility Sign**		EA	$ 247.00	$ -
7	**Repair/Replace Facility Sign and Post Installation**		EA	$ 329.00	$ -
16	**Hydroseeder (400 - 600 Gallon) with Upland Seed Mix**		HR	$ 217.00	$ -
17	**Hydroseeder (400 - 600 Gallon) with Wetland Seed Mix**		HR	$ 411.00	$ -
18	**Hydroseeder (400 - 600 Gallon) w/ Co. Supplied Seed Mix**		HR	$ 90.00	$ -
29	**Pond Low-Flow Channel Clearing (per 25')** (includes removal & disposal of sediment, trash, debris, floatables, & other material using handheld equipment from the pond low-flow channel)		25 FT	$ 156.00	$ -
30	**Tree Removal (2" to 6" DBH)**		EA	$ 1,316.00	$ -
31	**Tree Removal (7" to 12" DBH)**		EA	$ 2,961.00	$ -
32	**Tree Removal (13" to 24" DBH)**		EA	$ 4,930.00	$ -
33	**Tree Removal (25" to 36" DBH)**		EA	$ 6,250.00	$ -
34	**Stump Removal & Grinding (up to 12")**		EA	$ 576.00	$ -
39	**Excavation of Sediment** (includes removal & disposal of sediment from the bottom of the existing pond using mechanical means; assumed potentially hazardous waste)		CY	$ 150.00	$ -
40	**Animal Burrow Repair**		EA	$ 1,316.00	$ -
53	**VDOT Class I Rip-Rap with Fabric Liner**		TON	$ 156.00	$ -
54	**VDOT Class II Rip-Rap with Fabric Liner**		TON	$ 176.00	$ -
58	**Concrete Removal and Disposal**		SF	$ 39.00	$ -
59	**Grouting Cracks and Joints**		LF	$ 189.00	$ -
62	**Parging (per 50lb bag)**		EA	$ 452.00	$ -
70	**Seed Mix** (includes straw mulch and water)		0.1 acre	$ 286.00	$ -
79	**Topsoil (3")**		CY	$ 74.00	$ -
N/A	**Remove & Dispose of Sediment / Debris from Inside Drainage Structures and Pipes**		CF	$ 30.00	$ -
N/A	**Install Grouted Class I Rip-Rap**		SY	$ 90.00	$ -
N/A	**Install Grouted Class II Rip-Rap**		SY	$ 141.00	$ -
N/A	**Fabricate & Install Low-Flow BMP Plate**		EA	$ 500.00	$ -
N/A	**Fabricate & Install Low-Flow Trash Rack**		EA	$ 500.00	$ -
N/A	**Install HR-2 Handrail**		LF	$ 100.00	$ -
N/A	**Install Access Road Gate**		EA	$ 2,100.00	$ -
N/A	**Install Post and Cable Barrier**		EA	$ 750.00	$ -
N/A	**Install Removable Locking Bollard**		EA	$ 950.00	$ -
				Sub-Total =	$ -
				Mobilization (5%) =	$ -
				Total Estimated Cost =	**$ -**

Last Update: 10/13/2020

Appendix C: Public Stormwater Facilities-Non-routine Maintenance



Fairfax County 2021 MS4 Program Plan and Annual Report

Appendix P11

List of the number of impervious, pervious and total acres served by the MS4 for each Fairfax County local watershed, sixth order HUC and Chesapeake Bay segment, as well as the number of impervious, pervious and total acres treated by stormwater controls.

VSMP Permit Number VA0088587
9-30-2021

A list of the number of impervious, pervious and total acres served by the MS4 for each Fairfax County local watershed, sixth order HUC and Chesapeake Bay segment, as well as the number of impervious, pervious and total acres treated by stormwater controls can be found in the tables below.

Area Served by the MS4 as of March 31, 2019

Table 1. Local Watershed (acres)

Watershed	Impervious	Pervious	Total
Accotink Creek	3,491.0	6,927.8	10,418.7
Belle Haven	172.6	375.7	548.2
Bull Neck Run	72.0	307.3	379.3
Bull Run	4.5	20.7	25.2
Cameron Run	2,303.8	5,844.5	8,148.2
Cub Run	2,963.0	5,607.4	8,570.4
Dead Run	256.5	600.5	857.0
Difficult Run	2,722.0	8,430.0	11,152.0
Dogue Creek	984.7	2,512.6	3,497.4
Four Mile Run	336.2	338.8	675.0
Horsepen Creek	754.2	1,614.8	2,369.0
Johnny Moore Creek	26.7	225.9	252.6
Kane Creek	3.6	11.4	15.0
Little Hunting Creek	779.3	1,955.8	2,735.0
Little Rocky Run	591.0	1,508.7	2,099.7
Mill Branch	220.8	604.4	825.2
Nichol Run	42.5	341.0	383.5
Occoquan	21.4	119.7	141.0
Pimmit Run	755.4	2,002.1	2,757.4
Pohick Creek	2,316.6	6,068.3	8,385.0
Pond Branch	49.1	347.7	396.7
Popes Head Creek	194.3	948.0	1,142.3
Sandy Run	18.0	113.9	131.9
Scotts Run	482.4	737.2	1,219.6
Sugarland Run	654.0	1,729.8	2,383.9
Turkey Run	39.7	119.3	159.0
Wolf Run	10.0	66.5	76.5

Table 2. Sixth Order Hydrologic Unit Code (HUC) (acres)

VAHU6	Impervious	Pervious	Total
PL18	776.0	1,661.7	2,437.7
PL21	647.6	1,697.7	2,345.3
PL22	2,738.0	8,441.8	11,179.8
PL23	945.1	2,459.8	3,404.8
PL24	752.6	1,995.2	2,747.8
PL25	336.2	338.8	675.0
PL26	2,383.5	5,964.7	8,348.2
PL27	983.8	2,520.5	3,504.3
PL28	873.4	2,210.2	3,083.6
PL29	2,322.0	6,075.7	8,397.7
PL30	3,474.6	6,909.0	10,383.6
PL44	4.5	20.7	25.2
PL45	2,873.5	5,401.5	8,275.0
PL46	881.2	2,868.2	3,749.4
PL47	28.0	180.4	208.4
PL48	245.3	733.6	978.9

Table 3. Chesapeake Bay Segment (acres)

Chesapeake Bay Segment	Impervious	Pervious	Total
POTTF_DC	747.4	1,975.2	2,722.6
POTTF_MD	5,149.0	14,390.4	19,535.9
POTTF_VA	14,369.8	33,116.4	47,486.2

Table 4. Countywide (acres)

Impervious	Pervious	Total
20,265.3	49,479.5	69,744.8

Area Treated by Stormwater Controls as of March 31, 2019

Table 5. Countywide (acres)

Impervious	Pervious	Total
12,651.3	17,018.7	29,670.0

Fairfax County 2021 MS4 Program Plan and Annual Report

Appendix P12

Standard Operating Procedures for the MS4 Wet Weather Screening Program

VSMP Permit Number VA0088587
9-30-2021

Department of Public Works and Environmental Services
POLICIES AND PROCEDURES Memorandum No.: SWPD16-01

SUBJECT: Standard Operating Procedures for the MS4 Wet Weather Screening Program

Effective: 01/29/2016 Revised: 12/21/2020 Approval:

I. Purpose

Under the MS4 permit, Fairfax County is required to investigate and address areas that are suspected to be contributing excess levels of pollutants to the MS4 by conducting wet weather screening. Sampling stormwater runoff from areas that may be contributing excess pollution is a method used as a first step to locate, isolate, and remediate areas that may be responsible for polluted stormwater discharges that may ultimately impact the quality of receiving waters. This SOP describes Fairfax County's program for wet weather screening.

Fairfax County's 2015 Virginia Stormwater Management Program (VSMP) Municipal Separate Storm Sewer System (MS4) permit includes the following provisions for wet weather screening (Part I, Section B.2.l.2):

Wet Weather Screening Program: *In addition to the monitoring required in Part I.C., the permittee shall continue to investigate, and address areas within their jurisdiction that are suspected to be contributing excessive levels of pollutants to the MS4. No later than 12 months after the effective date of this permit, the permittee shall develop written procedures for a wet weather screening program which shall include standard operating procedure to be used for initial screening and follow-up purposes. The written procedures shall be incorporated as part of the MS4 Program Plan.*

SPECIFIC REPORTING REQUIREMENTS:

- *No later than 12 months after the effective date of the state permit, the permittee shall submit to the Department the written procedures for wet weather screening.*
- *Beginning with the annual report due October 1, 2017, each annual report shall include a list of locations upon which wet weather screening was conducted, the results, weather conditions at the time sample was collected to include date and approximate time of most recent storm event preceding sample collection, long term trends analyses, and any follow-up actions including maintenance and/or repair of infrastructure or outfalls performed as a result of the wet weather screening.*

This Wet Weather Screening Program Standard Operating Procedure (SOP) describes Fairfax County's site selection, field reconnaissance, and wet weather screening protocols for evaluating areas that may be contributing stormwater pollution to the County's MS4 and provides a framework for full compliance with the above MS4 permit requirements.

This document contains the following:

- Site Selection and Priority Determination
- Field Protocol for Wet Weather Outfall Screening
- Data Management/Quality Control
- Notification/Follow-Up Procedures
- Monitoring Reports
- References.

II. Site Selection and Priority Determination

a. General Factors for Identifying Candidate Sites

Fairfax County seeks to identify and monitor the most likely sources of excessive levels of pollutants entering the MS4 system. The County uses available data to target appropriate sites for investigation and possible wet weather screening. Categories of criteria that are used to identify suitable areas for wet weather screening during the desktop GIS analysis are described below.

i. MS4 Service Area

The County focuses wet weather screening activities on those areas that are regulated under its VSMP MS4 discharge permit. The County's MS4 service area consists of those drainage areas that discharge to an MS4 outfall that is owned or operated by Fairfax County. An MS4 outfall is defined as a point of discharge from a man-made channel or conveyance to surface waters of the State.

ii. Categorization of Parcels using Land Use

One key factor in selecting candidate areas for monitoring is land use, as represented by the County's land use codes for parcels. These codes are assigned when individual parcels are created. Each code has been assigned an index value ranging from 1 to 4 (Versar 2006) that represents the relative potential for parcels with that code to discharge pollutants during wet weather (Appendix A). A brief description of the index appears in Table 1. Index values have been assigned based on general expectations for a land use class, to provide a practical means for targeting field investigations to areas of greatest concentrations of land use classes that are most likely to be sources of pollution via runoff. This has been done to facilitate a countywide approach to priority service area selection using GIS. For example, in general, an automotive repair facility (Index Value 3) would be a more likely source of runoff pollution than a single-family residence (Index Value 1).

Land uses are organized into index values according to the predominant activities occurring on the parcel that consist of (a) transferring, storing, or employing hazardous materials in an industrial, manufacturing, or treatment process (Index Value 4), (b) occurrences of drips, spills, or deposits of petroleum or commercial products on impervious areas that are exposed to precipitation and can be subsequently carried to the MS4 (Index Value 3), c) permanent storage of retail inventory or commercial waste in centralized, exposed areas and which may leach onto impervious surfaces (Index Value 2), and d) occasional exterior use and storage of household chemicals and waste (Index Value 1).

Examples of sites that could contribute polluted runoff to a given service area include carwashes, gas stations, other automotive repair facilities, scrap yards, truck stops, shopping centers, restaurants, golf courses, home improvement retailers, plant nurseries and garden centers, research and testing facilities, industrial parks, mass transit terminals and maintenance facilities, pipeline rights-of-way and pressure control stations, and

manufacturers. Information to identify such sites within the county's jurisdiction is available from several sources.

Table 1: General index of potential for pollutant discharge during wet weather based on land use

Index Value	Description
1	No or insignificant potential (e.g., residences, schools, offices)
2	Slight risk (e.g., department stores, supermarkets, and other retail outlets with no obvious potential to pollute)
3	Moderate risk (e.g., warehouses, mass transit rights-of-way and terminals, restaurants, golf courses, and gasoline stations)
4	High risk (e.g., manufacturing, industry, waste treatment and disposal, utility rights-of-way)

iii. Easement

Maintenance and repair easements are required to allow the County to legally enter the storm drain network for the purpose of conducting monitoring of runoff. The easements allow the County and its agents to access portions of the MS4 on private property for the purposes of this work.

iv. Industrial and Commercial Facilities

The County has identified industrial and commercial facilities (ICFs) that operate within its boundaries. When businesses are established, they are assigned a standard industrial classification (SIC) code that describes the nature of the business. As part of this site selection methodology, certain SIC codes have been identified that have an elevated potential for discharge of polluted stormwater runoff from the premises. Examples of businesses that have the SIC codes of elevated concern are: automobile service and repair, recreation, wholesale chemicals and cleaning, retail shopping centers, industrial processes, and appliance repair. The list of SIC codes that occur within the Fairfax County MS4 service areas and have been included in the wet weather site selection process can be found in Appendix B.

b. Site Selection Protocol

The wet weather screening program employs a multi-factored scoring procedure to identify specific MS4 drainage areas that have the greatest potential for contributing polluted runoff. The method uses a variety of GIS data and supplemental information to rank parcels. Table 2 lists Fairfax County's GIS data relevant to this effort.

i. Site Selection Metrics

Table 2: GIS layers and data to be used to select and prioritize industrial/ commercial parcels for monitoring

Description	Dataset Name
MS4 service area	MS4_Service_Area
Industrial and commercial facilities	STWMGR_IHRR_FACILITIES_SITES
Orthophotography	2017_orthophoto_1ft.sid
Fairfax hydrography layer	StormNet
Current land use	IPLS_IPLS_GENER_EXIST_LAND_USE
Landcover	landcover_2015_fairfaxcounty.tif
Easements	StormNet
Stormwater network - arcs	StormNet
Stormwater network - point features	StormNet
VPDES industrial permitted facilities	VPDES_parcels
Major transportation areas (% Roadways)	Roadways__Bridges
Minor transportation areas (% Roadways)	Driveways__Parking_Lots

The goal of the site selection process is to target areas that have the greatest potential for discharging excessive levels of pollutants to the MS4. Incorporating a systematic strategy in the selection process increases the likelihood of finding possible pollution sources while reducing the amount of staff time spent at unlikely sites. Four distinct metrics were selected to prioritize potentially problematic MS4 drainage areas:

a. ICF Points – Industrial and commercial facilities represent a broad class of businesses and land uses with the potential to pollute stormwater.

b. Index Value Parcels –Index values ranging from 1 to 4 were assigned to each parcel in an extensive review of land use codes (LUC) – with Value 4 parcels having the greatest potential to contribute pollution to the MS4 (Table 3). While LUCs should be updated based on the most up-to-date data, the original LUC value assignment determinations conducted by Versar and the County in 2006 remains applicable for this site selection process.

c. Impervious and Turf– Imperviousness is a well-established metric for measuring the impact of land use changes on aquatic systems. Areas of turf and grass can also exhibit high concentrations of pollutants such as pesticides and nutrients. Combining these two land coverage types creates a metric focused on evaluating the scale of land use changes within each drainage area.

d. Roadways - Percentage of major and minor roadways and parking lots within each drainage area. This variable serves as a proxy for vehicle use and storage, as well salt application and storage, as elevated conductivity levels in local streams has been found to be linked to high road density.

Table 3: Index value 4 land uses within Fairfax County MS4 service areas

Land Use Code	Description
111	Planned industrial park
112	Industrial conglomeration
121	Durable manufacturing
131	Nondurable manufacturing
135	Printing and publishing
140	Research and test, where not in office building or office park
160	Contract construction
190	Other industrial NEC
221	Electric, including transmission rights-of-way, generation plants, regulating
222	Gas, including pipeline rights-of-way, treatment plants, storage, irrigation distributional channels, pressure control stations, etc.
223	Water, including pipeline rights-of-way, treatment plants, storage, irrigation distributional channels, pressure control stations, etc.
224	Sewage, including treatment plants, pressure control stations, etc.
226	Pipeline rights-of-way and pressure control stations, NEC (such as petroleum)

ii. Site Selection Prioritization Process

The site selection procedure is detailed below. This procedure may be modified over time as additional data are gathered or as the needs of Fairfax County's program change. A graphical illustration of the site selection process is provided in Appendix C.

Part 1: Calculate selection metric values.

1. Overlay MS4 drainage areas with metrics:
   a. **ICF Points**
   b. **Index Value Parcels**
   c. **Impervious and Turf**
   d. **Major and Minor Roadways**
2. Conduct a spatial join with the ICF Points (metric **a**). Count the points within each drainage area and divide the count by the acreage to calculate a metric density for each drainage area.

   Result: ICF Density
3. Conduct a spatial join for the Index Values Parcels (metric **b**). Count the number of each Index Value (1-4) within each drainage area. To prioritize higher pollution potential parcels, create a weighted sum of the parcels in each drainage area, using the following weights for each index value, and divide the count by the acreage to calculate a metric density for each drainage area:
   i. Value 4 weight – 1.00
   ii. Value 3 weight – 0.50
   iii. Value 2 weight – 0.25
   iv. Value 1 weight – 0.00

   Result: Weighted Index Value Density

4. Conduct a spatial join with the Impervious and Turf and Major and Minor Roadways land use and land cover layers (metric **c** & **d**). Estimate the acreage within each drainage and divide by the total area to calculate the percent of the total drainage composed by metric.

   Result: Percent Impervious and Turf; Percent Roadway

Part 2: Metric value scaling.

Scaling each metric so that it ranges from 0-1 allows each of the four metrics to be compared with each other directly by looking at their values relative to their range. From Part 1, for values in each metric, subtract the minimum value of the metric and then divide by the difference between the maximum and minimum of the metric. When the minimum value of a metric is 0, this simplifies to dividing each value by the maximum value of the metric.

Part 3: Assign weighted values to each metric.
Assign weights to each of the four metric values calculated in Part 2. Weights allow for different scenarios that highlight sites more suitable to monitor for different pollutants. Weights for each metric must be between 0 and 1.0, and sum to 1.0. Even weights of 0.25 for each metric were chosen for site selection.

Part 4: Calculate the final suitability score.
The sum of the four weighted metric scores represents the final suitability score that is used to evaluate the results of the desktop selection process.

Part 5: Refine MS4 drainage area selection layer.
Smaller drainage areas generate less flow during storm events which makes these outfalls difficult to monitor. Because of this, MS4 outfalls with drainage areas under 10 acres are removed from prioritization.

c. Field Reconnaissance Protocol

The top fifteen sites identified as candidates for screening according to the site selection protocol are visited to determine suitability for monitoring and ease of access. Information gained from field reconnaissance is used to select priority sites for wet weather screening. This work may occur in and/or around confined spaces. Staff shall be trained in confined space awareness and identification per OSHA guidelines. For work that involves entry into a confined space, the County (or an approved contractor) will mobilize a (minimum) two-person, permit-required, confined space certified crew with appropriate equipment to the site, and enter the facility adhering to applicable OSHA requirements for confined space entry. Standard operating procedures relevant to safety and health considerations for these monitoring activities are maintained under separate cover in the Fairfax County Stormwater Safety Manual.

Field maps prepared for reconnaissance include streams, watersheds, outfalls, the storm sewer network, and major and minor roads. The candidate sites are photographed. All observations will be recorded on the Wet Weather Monitoring Site Evaluation Form (Appendix E). The field reconnaissance protocol consists of the following steps:

1. Location and Land Use Characterization: Gather data from site selection process (Section II.b) including drainage basin size, land use, and percent impervious drainage area for each candidate site. Have this information on hand during the field reconnaissance.
2. Pollution Potential: In the field, evaluate the subbasin visually for the presence of trash, poor maintenance practices, suspicious spills or stains, and the presence (or absence) and condition of secondary controls (USEPA 2005).
3. Safety: Assess safety concerns at the site including security, proximity to traffic, biological hazards, and confined space entry concerns. Determine if there is a need for personnel trained and certified to work in confined spaces.
4. Infrastructure Configuration: Document information on the infrastructure configuration. Locate outfall(s) and verify orifice diameter to enable calculation of flow rate (discharge) using appropriate Manning's coefficients.
5. Access: Evaluate site accessibility including property ownership, easements, terrain, vegetation, and setup accessibility. If access to the outfall is impeded by dangerous terrain or fences, or it is not visible due to immersion in receiving waters or blocked by sediment, then a manhole up-network from the outfall can be considered as an alternative sampling point. The location of non-outfall monitoring locations should be within County easements. Traffic control authorization and training may be required.
6. Equipment Setup: Open manholes and determine the suitability of placing a compact automated sampler within the manhole or at-grade adjacent to the manhole. Identify any required inserts for monitoring equipment (spring ring, scissors ring, or weir).

The results of the field reconnaissance are reviewed to determine the best sites for monitoring. Factors considered in Steps 2 through 6 of the Field Reconnaissance Protocol could hinder monitoring or eliminate a site from consideration (e.g., inaccessibility, relative lack of security). Two sites will be selected for each five-year MS4 permit term. The County may have to obtain permission from the landowner to access selected monitoring sites. The selected wet weather screening sites will be revisited and prepared for monitoring according to procedures outlined in Section III and Appendix F. Selected monitoring sites and alternate sites are reviewed below.

d. Monitoring Sites

i. Fairfax Water, Chantilly Location; STMN0442033318

This outfall drains to the recently restored reach of Flatlick Branch adjacent to Fairfax Water's property yard. The highest ranked site, this outfall drains an area that is greater than 20 acres and about 75% impervious. This outfall drains several parking lots and various commercial facilities. It is also adjacent to a large landscaping materials yard. Some businesses included within the drainage area to this outfall include auto repair and detailing shops, a fleet fueling station, and a restaurant. The land use and drainage area contributing to this outfall increases the potential for actionable follow-up in the event of exceedances.

ii. Bren Marr Park, near I-395; STMN0811453764

This outfall drains over 76 acres to Backlick Run and is located near both Edsall Road and I-395. This outfall drains numerous industrial and commercial facilities. Some businesses included within the drainage area to this outfall include concrete and construction materials suppliers (Vulcan Materials), auto repair, tiling, electrical work, and construction. A portion of I-395 also drains to this outfall.

e. Alternate Monitoring Sites

i. Hill Park Dr, Lorton; STMN0992487877

This outfall drains to Long Branch adjacent to Fairfax Water's property yard. This outfall drains over 28 acres. It is located adjacent to another highly ranked outfall (STMN0992487937), however this outfall is much better situated for equipment deployment. This outfall drains large institutional and commercial facilities. Some businesses included within the drainage area are auto repair, tiling, landscaping and outdoor materials storage, and food distribution. It also drains residential areas and roadways.

ii. Towerview Rd, Herndon; STMN0242014003

This outfall drains to Horsepen Creek. The upstream drainage network drains parking lots for six commercial buildings, as well as street drainage from Park Center Road, Redskin Drive, and Towerview Road. The outfall receives approximately 15 acres of drainage, made up of over 75% impervious surface coverage. This site ranked within the top ten on the list of prioritized outfalls, and the land use and small drainage area to this outfall would increase the potential for actionable follow-up to exceedances. Some businesses located within the drainage area to this outfall include an equipment rental yard, truck rental and towing, glass product manufacturer, screen printing, and construction materials warehouses.

iii. Cinderbed Rd. and Hill Park Dr, Newington; STMN0992487937

This outfall is within 100 yards of another recommended monitoring site (STMN0992487877) and also drains to Long Branch. It receives drainage from primarily commercial sites but does not receive any residential drainage (unlike the neighboring monitoring site). The drainage area is comprised of 75% impervious surfaces, consisting of a smaller drainage network. The outfall is positioned in an entrenched orientation within the spillway, which would require greater length of suction line for monitoring installations.

iv. Terminal Rd, Lorton; STMN0993495633

This outfall drains a parking area serving a number of ICFs and drains to a ditch alongside a railroad tracks. The drainage area is 15.6 acres (consisting of 85% impervious area), with a singular pipe network contributing to most drainage. The parking areas were mostly full, with employee vehicles as well as customer vehicles awaiting repairs. Additionally, there were many trash receptacles stored near inlets and drains within the parking area. Sediment accumulation within the spillway downstream of the outfall has caused a pool of standing water to form. This could present a challenge during sampling events.

III. Field Protocol for Wet Weather Outfall Screening

This section provides details of the protocols to be followed during wet weather monitoring deployments and includes descriptions of sampling equipment, analytes, sampling frequency, and antecedent condition requirements. Specific instructions for sampling procedures are provided in Appendix F.

a. Sampling Methods

The preferred sampling method is an electronic, automated sampler, which collects discrete samples of runoff at specific intervals throughout a storm. The County uses automated samplers and electronic flow logging techniques to sample runoff from potentially high-polluting areas that may adversely impact waters of the State. Stenstrom and Lee (2005) emphasize that monitoring runoff throughout an entire storm with automated sampling is preferable because pollutant concentrations may vary over time based on the rate and duration of rainfall. This approach also allows for unattended monitoring which is useful when storms occur overnight (Harmel et al. 2006). Automated sampling and associated continuous flow-logging also enable researchers to calculate pollutant loads.

Field technicians sample storm runoff flows by attaching automated samplers to MS4 outfalls located within or terminating a target service area. Flow rates are logged at all sampling points to enable flow-weighted compositing of samples. A flow-weighted composite sample provides an accurate representation of the overall concentration of a given analyte in the runoff. The flow-logging apparatus is secured (e.g., with a scissors ring) within the pipe for the duration of each storm event. When flow levels exceed a trigger point, the sampler will initiate the collection of the first flush. This requires the collection of 5 liters of flow. The sampler will then proceed with the total storm collection, collecting at fixed time intervals for the remainder of the forecast storm period. The sample interval can be calculated by multiplying the total sum of expected rainfall accumulation by trailing limb allowance (in hours). This time interval may vary depending on the goals of the sampling or the expected duration of the storm. Seasonality will also factor into the expected rainfall accumulation, and anticipated storm event hydrograph. Individual samples from the total storm collection will be combined into a discharge volume-weighted composite sample. One composite sample and one first flush sample will be obtained at each sampling point and transported to an approved analytical laboratory to be tested for the analytes listed in Table 4. Field technicians measure pH and specific conductance in the first flush and composite samples before delivering samples to the laboratory.

b. Analytes

Categories of pollutants to be tested are nutrients, metals, and sediment. Each category consists of specific pollutants that provide information about suspended material transport, contamination of impervious surfaces from heavy metals, and deposition and mobilization of nutrients commonly used in detergents and fertilizers. This analyte suite consists of pollutants shown to be commonly found in urban runoff and has been refined through experience with sampling wet weather runoff from these kinds of areas within Fairfax County. Water hardness (as mg/L CaCO3) is monitored so that analytical results can be directly compared to Virginia surface water criteria. Monitoring will be conducted according to procedures approved under 40 CFR Part 136 or alternate methods approved by the U.S. Environmental Protection Agency. Samples must be analyzed at a certified non-commercial (e.g., in accordance with 1VAC30-45) or accredited commercial laboratory (e.g., in accordance with 1VAC30-46).

Table 4: Laboratory analytes, detection limits, and current analytical methods for Fairfax County's wet weather screening program.

Parameter	Detection Limit	Method
Ammonia	0.01 mg/L	EPA 350.1
Cadmium	2.0 µg/L	EPA 200.8
Calcium	2.0 µg/L	EPA 200.8
Chemical Oxygen Demand (COD)	10 mg/L	SM 5220 D
Chloride	0.02 mg/L	EPA 300
Chromium (Total)	2.0 µg/L	EPA 200.8
Copper	2.0 µg/L	EPA 200.8
Fluoride	0.01 mg/L	EPA 300
Iron	2.0 µg/L	EPA 200.8
Lead	2.0 µg/L	EPA 200.8
Magnesium	2.0 µg/L	EPA 200.8
Manganese	2.0 µg/L	EPA 200.8
Nickel	2.0 µg/L	EPA 200.8
Nitrate + Nitrite	0.02 mg/L	EPA 353.2
Orthophosphate	0.01 mg/L	EPA 365.1
pH		SM 4500
Phosphorus (Total)	0.01 mg/L	EPA 365.1
Potassium	0.3 mg/L	EPA 200. 8
Silica	2.0 µg/L	EPA 200. 8
Sodium	2.0 µg/L	EPA 200. 8
Specific Conductance		EPA 120.1
Sulfate	0.02 mg/L	EPA 300
Total Dissolved Solids	10 mg/L	SM 2540 C
Total Kjeldahl Nitrogen	0.5 mg/L	EPA 351.2
Total Suspended Solids	1.0 mg/L	SM 2540 D
Total Water Hardness	1.0 mg/L	SM 2340
Zinc	0.02 mg/L	EPA 200.8

c. Correcting for baseflow

The monitoring sites at Bren Mar Park and Fairfax Water, Chantilly may experience continuous or intermittent baseflow. Up to four baseflow samples will be collected at these sites to quantify baseflow rates and the pollutant load contributions during periods of dry weather, with an antecedent dry period of at least 48 hours, or immediately prior to forecasted storm events. This will allow for accurate characterization of pollutant loads above baseline levels during storm events.

d. Sampling Frequency

The County's 2015 MS4 permit does not specify a sampling frequency or duration for areas of interest. Wet weather sampling of MS4 service areas is intended to support the County in identifying and addressing sources of water quality pollution.

The program is designed for monitoring two areas concurrently four times a year, approximately quarterly, for five years to capture seasonal and interannual variation in pollution concentrations. This sampling frequency results in 8 first flush and 8 composite storm samples per MS4 reporting year, assuming external factors that reduce the availability of predictable, qualifying events (e.g., extended dry periods, scattered thunderstorms) or equipment failure do not prevent sample collection. Any samples missed throughout the year will be re-collected as soon as practically possible. Collections from these storm events may be supplemented with baseflow sampling at the Bren Mar Park and Fairfax Water, Chantilly sites, as mentioned in Section III c.

e. Antecedent Dry Period and Rainfall Criteria

Sampling after a dry period is beneficial because it reduces the possibility of sampling immediately after surfaces have been washed relatively clean by a prior storm. Antecedent dry periods required by discharge permits typically range from 48 hours for BMP effectiveness studies to 72 hours for standard discharge permit monitoring programs (USEPA 1992). Experience has shown that attempting to wait for a 72-hour antecedent dry period may preclude timely storm sampling, especially during periods of frequent storms (i.e., daily, generally in summer months). A 48-hour antecedent dry period is required for wet-weather monitoring (USEPA 2002) and will be observed in Fairfax County's screening program. The weather conditions at the time of sample collection are recorded as well as the date and approximate time of the most recent storm event preceding the sample collection. This information can be gathered from meteorological databases such as Weather Underground.

Storms that are forecast to deliver 0.3 inches or more of rain within 24 hours are eligible for monitoring. A rainfall depth of 0.3 in. represents a moderate quantity that should produce sufficient runoff to allow automated sampling. The minimum rainfall depth may be revised if it provides insufficient runoff for automated sampling or during extended dry periods.

Eligible storms are identified by field staff that monitor the National Weather Service forecast for storms expected to deliver at least 0.3 in. of rainfall at a targeted service area monitoring location. Rainfall depth delivered by a given storm is estimated from regional rainfall accumulation as determined by Doppler radar or from a local rain gauges in the County.

f. Health and Safety

Ensuring the health and safety of field personnel is the responsibility of every member of the staff for the project. The collective effort of all staff members in providing a healthy and safe work environment helps to minimize or eliminate the potential for accidents. This work may occur in and/or around confined spaces. Staff shall be trained in confined space awareness and identification per OSHA guidelines. For work that involves entry into a confined space, the County (or an approved contractor) will mobilize a (minimum) two-person, permit-required, confined space certified crew with appropriate equipment to the site, and enter the facility adhering to applicable OSHA requirements for confined space entry. Standard operating

procedures relevant to safety and health considerations for these monitoring activities are maintained under separate cover in the Fairfax County Stormwater Safety Manual.

The following procedures from the Safety Manual are highlighted for field staff:

- Perform field work in teams of at least two.
- Bring mobile phone and first aid kit on all field site visits.
- Exercise caution when encountering any wildlife and hazardous plants. In addition, many outfalls are located in remote areas that may be near gathering places for homeless or transient individuals. Do not enter a potentially hostile area.
- Use common sense during electrical storms and/or when severe conditions (e.g., high wind, hail) develop. The safety of field staff overrides all other considerations.
- Storm sewers contain a variety of water-borne bacteria and other harmful chemicals. Wash hands or use anti-bacterial wipes or hand gels liberally, especially prior to lunch breaks, etc.

IV. Quality Control

a. Documentation of Field Monitoring

Documentation of the wet weather screening effort includes the following:

- results of field reconnaissance in preparation for the wet weather screening
- construction, orientation, and size of the MS4 conduit that is the sampling point for the site of interest
- the unique ID and physical location of the outfall or manhole being accessed (if any)
- GPS coordinates of the outfall or manhole being accessed if it is not on Fairfax County's stormwater infrastructure GIS layer
- description of hardware inserted into the pipe at sampling point

For storm events, a dedicated data sheet (Appendix G) is used to document sample location, rainfall depth, date of sampling initiation, serial numbers of automated sampler and flow module, names of field crew, discrete sample interval, discharge volume represented by each discrete sample, proportional aliquot of discrete sample used in compositing, and date and time of sample composite.

b. Chain of Custody

Chain of custody (COC) forms, used for all samples, are a permanent record of transfer of sample custody. Custom COC forms for this project are preprinted with the analytes and partial laboratory numbers particular to the activity at hand (e.g., composite; Appendix H). Field staff need only to complete the laboratory numbers, complete the columns designated for other information, line out any samples that will not be submitted, and sign the form. When picking up the samples for delivery to the laboratory, the laboratory courier signs and dates the COC form in the "Received By" box and leaves a photocopy for project records. Copies of the COC form are provided with certificates of analysis from the laboratory.

c. ISCO Model 6712 Portable Automated Sampler

The sampler assembly consists of a keypad, pump, tubing, and sample bottle container which holds 24 plastic bottles. The first five bottles in the series will be used for a first flush analysis, and the remaining 19 are used to contain the discrete samples collected at intervals throughout the storm. Required maintenance involves checking the integrity of the suction tubing, checking to see that suction tubing is securely attached to the pump tubing (when sampler is attached), making sure that pump tubing is properly threaded through the distributor arm, running the internal electronic maintenance cycle (includes electronic tests of RAM and ROM, mechanical tests of sample pump and distributor arm), and making sure the knurled knob that holds the distributor arm to the frame is tight. Quarterly maintenance consists of running the sample pump to check for suction line integrity. The suction line at a sampling point is replaced when the apparatus is moved to a new site upon completion of sampling. The pump tubing is replaced annually. A step is included in the automated sampler program to rinse the suction tubing with sample water prior to sampling.

V. Notification/Follow-Up Procedures

Standard laboratory analysis reporting time is two weeks; the field staff forward all monitoring results by email to the Wet Weather program manager within three business days of results receipt with a notification of results that exceed the criteria in Table 5. The Wet Weather program manager reviews the results and coordinates with the Stormwater Pollution Inspections Section to determine appropriate follow-up actions in accordance with the "Standard Operating Procedures for Industrial High Risk Runoff Program MS4 Point of Connection and Facility Inspections". The Stormwater Pollution Inspections section ensures that any discharges or findings of non-compliance that meet the conditions specified in Part II.G, H or I of the MS4 permit are reported to DEQ and notifies any other county agencies, as necessary. The County's water quality Stormwater "Who to Call List" outlines the appropriate individuals and agencies to be notified for various water quality incidents and concerns and is utilized in this process.

Note: If a hazardous material spill is suspected, field staff will immediately call the county's Fire and Rescue Hazardous Material Investigative Service (703-246-2300) and the appropriate staff (referenced above) in the County Stormwater Planning Division.

Table 5: Laboratory analytes and detection limits for Fairfax County's wet weather screening and industrial/high risk runoff programs

Parameter	Detection Limit	Exceedance Criterion
Ammonia[a]	0.01 mg/L	10 mg/L
Cadmium[b] [c]	2.0 µg/L	2.1 µg/L
Calcium	2.0 µg/L	N.A.
Chemical Oxygen Demand (COD)[b]	10 mg/L	120 mg/L
Chloride[d]	0.02 mg/L	860 mg/L
Chromium (Total) [b]	2.0 µg/L	1.1 mg/L
Copper[b] [c]	2.0 µg/L	18 µg/L
Fluoride[a]	0.01 mg/L	75 mg/L
Iron[b]	2.0 µg/L	1.0 mg/L
Lead[b] [c]	2.0 µg/L	120 µg/L
Magnesium[b]	2.0 µg/L	64 µg/L
Manganese[e]	2.0 µg/L	50 µg/L
Nickel[b] [c]	2.0 µg/L	470 µg/L
Nitrate + Nitrite[f]	0.02 mg/L	1.85 mg/L
Orthophosphate	0.01 mg/L	N.A.
pH[d]		< 6.0, > 9.0
Phosphorus (Total)	0.01 mg/L	2 mg/L
Potassium[g]	0.3 mg/L	20 mg/L
Silica	2.0 µg/L	N.A.
Sodium	2.0 µg/L	N.A.
Specific Conductance[g]		2,000 µS/cm
Sulfate	0.02 mg/L	N.A.
Total Dissolved Solids[d]	10 mg/L	500 mg/L
Total Kjeldahl Nitrogen[b]	0.5 mg/L	1.5 mg/L
Total Suspended Solids[b]	1.0 mg/L	100 mg/L
Total Water Hardness[g]	1.0 mg/L	< 10 mg/L, > 2,000 mg/L
Zinc[a] [c]	0.02 mg/L	0.2 mg/L

(a) Virginia Pollutant Discharge Elimination System (VPDES) industrial general permit numeric effluent limit
(b) Virginia Pollutant Discharge Elimination System (VPDES) industrial general permit benchmark concentration
(c) Acute water quality criterion for metals is hardness-dependent. Values above reflect hardness standardized to 100 mg/L as CaCO3. See Virginia Water Quality Standard 9VAC25-260-140 for explanation of factors used to adjust acute criterion based on hardness for specific metals.
(d) Virginia Water Quality Standards for surface water 9VAC25-260-140.
(e) EPA secondary drinking water standards
(f) Municipal Action Levels from waste discharge requirements for Los Angeles County MS4 (Order No. R4-2012-0175, as amended by Order WQ 2015-0075)
(g) Benchmark concentration from Illicit Discharge Detection and Elimination, A Guidance Manual for Program Development and Technical Assessments
N.A. = No EPA or Virginia acute standard available

VI. Monitoring Reports

For the Wet Weather Screening Program, Fairfax County produces individual storm reports and permit yearly reports (for all activities within an annual MS4 reporting cycle) to document permit compliance data collection efforts.

a. Event Monitoring Report

For each storm event monitored, an event monitoring report is created for all sites monitored during that event. A data table is prepared that includes the following information:

- Site evaluation and reconnaissance data;
- Site setup and antecedent rainfall information;
- Storm setup and sample collection information;
- Sample analysis results;
- Continuous flow rate and rainfall data (in 10-minute intervals);
- Discrete volume worksheet;
- Pass/fail screening status; and
- Reference values for exceedance criteria.

The event monitoring report also includes a PDF of the laboratory certificate of analysis. The laboratory provides analytical results within two weeks.

b. Monitoring Yearly Report

At the end of each MS4 reporting year (July 1 – June 30), a report on wet weather screening of potential pollution runoff areas is prepared for use in the development of the County's annual MS4 report to VA DEQ. The report contains narratives of each area screened and briefly describes results. The yearly report includes the following:

- locations where wet weather screening was conducted;
- weather conditions at the time each sample was collected including the date and approximate time of the most recent storm event preceding sample collection,
- compilation of analytical results, flow, and rainfall data for each site;
- narratives of each site screened and brief descriptions of results;
- statement addressing permit requirement regarding long term trend analysis of the results;
- follow-up actions performed as a result of the wet weather screening; and
- summary spreadsheet containing analytical results (identifying any exceedances), flow, and rainfall data (see example spreadsheet format in Appendix J)

Year 2 through Year 5 reports include comparisons to prior years monitoring efforts and results. The Year 5 report will also include an overall summary of the five years of monitoring and recommendations for future wet weather screening efforts.

VII. References

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VIII. Administrator of the SOP

This SOP document is administered by the Stream Monitoring Section within the Stormwater Planning Division. For more information about this document, please call the Stormwater Planning Division at (703) 324-5500.

IX. Appendices

A. Land Use Codes and Index Values for Wet Weather Pollutant Discharge Potential

B. Selected SIC Codes that Occur Within Fairfax County MS4 Service Areas

C. Graphical representation of site selection process

D. Maps and Photos of Selected and Alternative MS4 Service Areas

E. Wet Weather Monitoring Site Evaluation Form

F. Equipment Installation, Operation and Sampling Procedures

G. Example Wet Weather Screening Field Data Sheet

H. Chain of Custody Form

Appendix A: Land Use Codes and Index Values for Wet Weather Pollutant Discharge Potential

Land uses and attached index of potential wet weather pollution discharge (1=least, 4=most risk for contributing excess pollutants via wet weather discharge) for parcels in Fairfax County, Virginia. Note that codes were established only for three-digit land use codes. Land use codes were obtained from Fairfax County Department of Tax Administration.

Land Use Code	Description	Index
0	Residential	
3	Retail Trade	1
1	Single-family, Detached or Semidetached	
11	Single-family, detached	1
12	Single-family, semidetached or garden court	1
13	Two or more single-family, detached on single parcel (including guest house or unit in detached auxiliary building)	1
14	Single-family structure NEC	1
15	Single-family residences located in an area where value may be influenced by commercial or industrial properties.	1
2	Two-family	
21	Duplex, either vertical or horizontal	1
29	Two-family NEC	1
3	Townhouse or Multiplex	
31	Townhouse, in ownership development	1
32	Townhouse, in condominium development	1
33	Townhouse, in rental development	1
34	Multiplex (except duplex) in ownership development	1
35	Multiplex (except duplex) in condominium development	1
36	Multiplex (except duplex) in rental development	1
37	Combination of structure types, predominantly townhouses and/or multiplexes	1
39	Townhouse or multiplex structures NEC, including cooperatives	1
4	Apartments	
40	Garden apartments, rental (up to and including 4 stories)	1
41	Garden apartments, condominium (up to and including 4 stories)	1
42	Medium rise apartments, rental (5 to 8 stories)	1
43	Medium rise apartments, condominium (5 to 8 stories)	1
44	High rise apartments, rental, without commercial/professional (9 or more stories)	1
45	High rise apartments, condominium, without commercial/ professional (9 or more stories)	1
46	High rise apartments, rental, with commercial/professional (9 or more stories)	1

Land Use Code	Description	Index
47	High rise apartments, condominium, without commercial/ professional (9 or more stories)	1
48	Combination of structure types, predominantly apartments	1
49	Apartments, NEC, including cooperatives	1
5	Mobile Homes	
51	Mobile homes in park or court	1
52	Mobile homes not in park or court	1
6	Residential Structures (originally designed for hotels and motels but now primarily used as dwelling units)	
60	Residential hotels and motels	1
7	Group Quarters	
71	Rooming and boarding houses	1
72	Membership lodgings	1
73	Residence halls and dormitories	1
74	Retirement homes and orphanages	1
75	Religious quarters	1
76	Nursing homes	1
79	Other group quarters NEC (except military and correctional)	1
8	Transient Lodging	
81	Motel without restaurant and/or other commercial amenities	1
82	Motel with restaurant and/or other commercial amenities	1
83	Hotel without restaurant and/or other commercial amenities	1
84	Hotel with restaurant and/or other commercial amenities	1
85	Tourist Home	1
89	Other transient lodging NEC	1
9	Other Residential	
91	Garage, barn, outhouse, shed, etc., on separate but adjacent parcel from unit	4
92	Private open space, swimming pool, tennis courts, private roads, parking areas,	2
93	Private open space, swimming pool, tennis courts, private roads, parking areas,	2
99	Other residential NEC	1
1	Industrial	
11	Industrial Park or Conglomeration	
111	Planned industrial park	4
112	Industrial conglomeration	4
12	Durable Manufacturing, where not in industrial parks	
121	Durable manufacturing	4
126	Durable manufacturing (where in a condominium development)	4
127	Durable manufacturing (where in a cluster development)	4
13	Nondurable Manufacturing, where not in industrial parks	

Land Use Code	Description	Index
131	Nondurable manufacturing	4
135	Printing and publishing	4
136	Nondurable manufacturing (where in a condominium development)	4
137	Nondurable manufacturing (where in a cluster development)	4
14	Research and Testing, where not in industrial parks	
140	Research and test, where not in office building or office park	4
146	Research and testing (where in a condominium development)	4
147	Research and testing (where in a cluster development)	4
15	Wholesale, Warehousing and Storage, where not in industrial parks	
150	Wholesale, warehousing and storage	3
151	Mini-warehouses	3
156	Wholesale, warehousing and storage (where in a condominium development)	3
157	Wholesale, warehousing and storage (where in a cluster development)	3
16	Contract Construction, where not in industrial parks	
160	Contract construction	4
166	Contract construction (where in a condominium development)	4
167	Contract construction (where in a cluster development)	4
19	Other Industrial NEC	
190	Other industrial NEC	4
2	Transportation, Utilities, Communications (operating facilities not including offices)	
21	Transportation	
211	Railroad, including right-of-way, terminals, maintenance	3
212	Rail rapid transit, including right-of-way, terminals, maintenance	3
213	Bus, including terminals, maintenance and special rights-of-way	3
214	Motor freight transportation	3
215	Street and highway right-of-way	3
216	Auto parking	3
217	Air including runways, terminals and maintenance	3
218	Marine terminals	3
219	Other transportation NEC (including freight forwarding services and taxi	3
22	Utilities	
221	Electric, including transmission rights-of-way, generation plants, regulating	4
222	Gas, including pipeline rights-of-way, production plants, storage and distribution	4
223	Water, including pipeline rights-of-way, treatment plants, storage, irrigation	4
224	Sewage, including treatment plants, pressure control stations, etc.	4
225	Solid waste disposal including refuse incineration, garbage grinding stations,	4
226	Pipeline rights-of-way and pressure control stations, NEC (such as petroleum)	4
229	Other utilities, NEC	3

Land Use Code	Description	Index
23	Communications	
231	Telephone and telegraph	3
232	Radio and television	3
239	Other communications, NEC 3 Retail Trade	3
31	Shopping Centers (a group of commercial establishments with on-site parking which are planned, developed, owned and managed as a unit, and related in location)	
311	Neighborhood Center	2
312	Specialty Center - consists of numerous small tenants with no anchor tenant.	2
313	Community Center	2
314	Regional Center	2
315	Super Regional Center	2
316	Promotional Center	2
317	Town Center	2
318	Condo Center	2
32	Building Materials, Hardware, Farm Equipment (where not included in shopping centers)	
320	Building materials, hardware, farm equipment	3
33	General Merchandise, Apparel, Home Furnishings, Drugs (where not included in shopping centers)	
331	Department stores	2
332	Discount stores	2
333	Variety or junior department stores	2
334	Apparel and accessories	2
335	Furniture, house furnishings	2
336	Drug stores	2
337	Condo Retail - Specialty type store located in a predominantly office or	2
34	Food Stores (where not included in shopping centers)	
341	Supermarket	2
342	Supermarket plus general merchandise	2
343	Convenience grocery	2
349	Other food NEC (including fruit, meat, fish, etc.)	2
35	Eating and Drinking (where not included in shopping centers)	
351	Restaurant with alcohol	3
352	Restaurant without alcohol	3
353	Carry-out Kitchen	3
354	Carry-out with seating	3
36	Automotive, Marine, Aircraft and Accessories (where not included in shopping centers)	
361	Motor vehicle sales (new and used)	2

Land Use Code	Description	Index
362	Gasoline and Service Station	3
363	Gasoline Sale Only	3
364	Gasoline Sales and Car Wash	3
365	Service Station out of operation, but not yet converted to another use. Service	2
369	Other automotive, marine, aircraft and accessories NEC	3
39	Other Retail NEC (where not included in shopping centers)	
390	Other retail NEC	2
4	Office Buildings and Office Parks	
41	Office Park	
410	Office Park	1
42	Low Rise Office (up to and including 4 stories)	
421	General low rise office	1
422	Medical and/or dental low rise office	1
423	Government leased low rise office (90% or more floor area leased to	1
424	Government owned low rise office	1
425	Condominium Office (General, Low Rise)	1
426	Condominium Office (Medical and/or Dental, Low Rise)	1
427	Cluster Office (General, Low Rise)	1
428	Cluster Office (Medical and/or Dental, Low Rise)	1
429	Converted Residential Office (ex-dwellings which have been totally converted	1
43	Medium and High Rise Offices (5 or more stories)	
431	General medium or high rise office	1
432	Medical and/or dental medium high rise office	1
433	Government leased medium or high rise office (90% or more floor area leased to	1
434	Government owned medium or high rise office	1
435	Condominium Office (General, Medium or High Rise)	1
436	Condominium Office (Medical and/or Dental, Medium or High Rise)	1
49	Other Office NEC	
490	Other office NEC	1
5	Consumer and Business Service land uses (where not included in office buildings or shopping centers; usually in converted houses or converted stores)	
510	Finance, insurance, real estate and professional services	1
520	Personal services including laundry, photo, beauty, barber, funeral, apparel,	1
530	Motor vehicle repair when provided separately from motor vehicle sales dealers and gasoline stations.	3
540	Other repair services NEC	1
550	Veterinary hospitals	1
590	Other consumer and business service land uses NEC	1

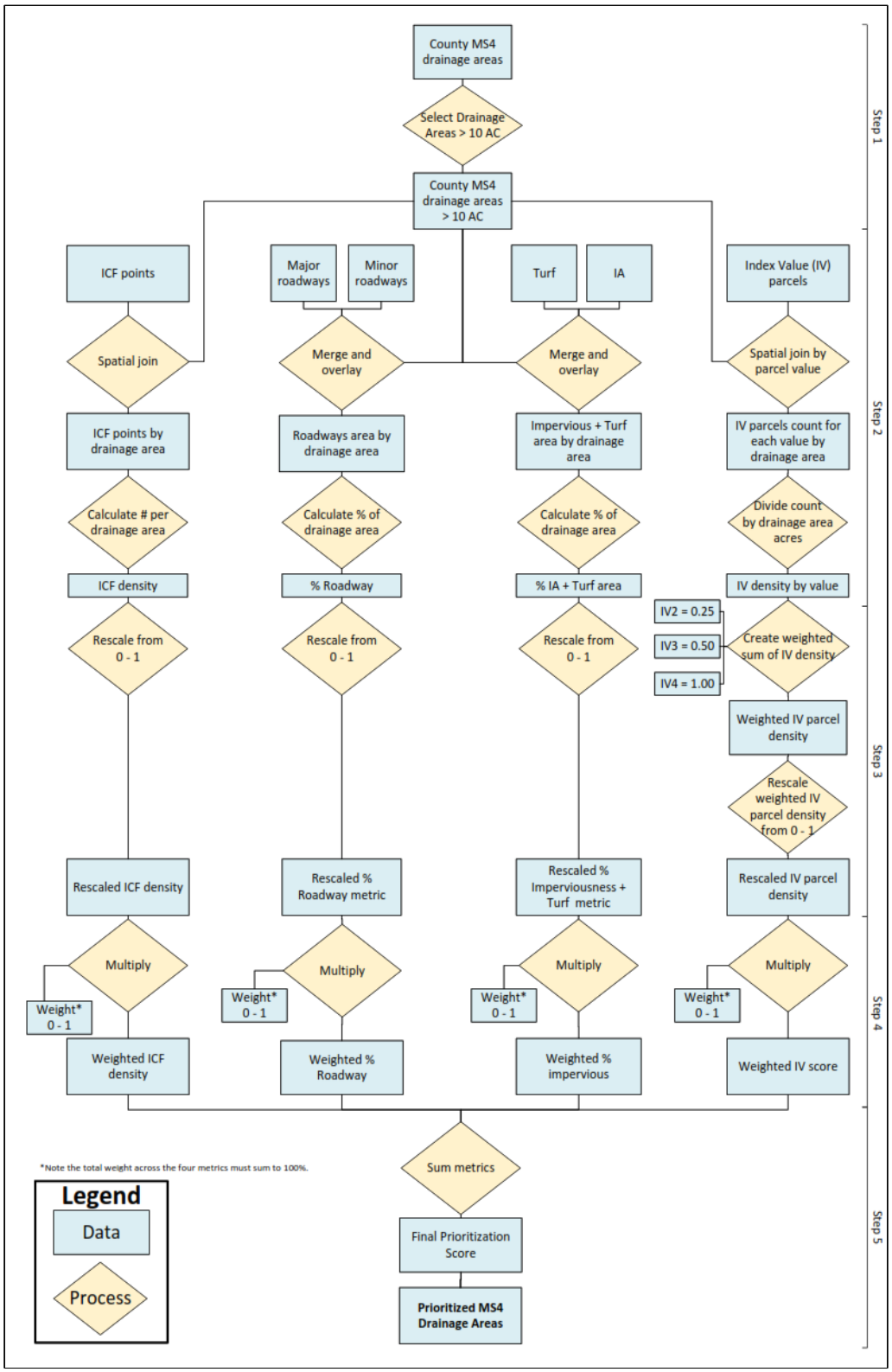
Land Use Code	Description	Index
6	Public and Quasi Public Service land uses (where not included in office buildings or shopping centers)	
610	Cemeteries	1
620	Hospital and health facilities (except nursing homes)	1
630	Post offices	1
640	Police stations	1
650	Fire and rescue stations	1
660	Correctional institutions	1
670	Military institutions	1
680	Welfare and charitable services	1
690	Other public and quasi public service land uses NEC	1
7	Cultural, Educational and Entertainment Service	
71	Churches, Synagogues	
710	Churches, synagogues	1
72	Civic, Social, Fraternal, Professional, Business Associations	
720	Civic, social, fraternal, professional, business associations	1
73	Libraries	
730	Libraries	1
74	Permanent Exhibition	
740	Permanent exhibitions including museums, art galleries, monuments, planetaria,	1
75	Education	
751	Nursery schools (may include kindergarten)	1
752	Public elementary, intermediate, secondary, high and special class schools	1
753	Private schools; kindergarten through 12 or combination of these grades; may	1
754	College, universities, including junior colleges and professional schools (law,	
755	Special training schools including vocational and trade schools, business,	1
759	Other educational services NEC	1
76	Public Assembly, Both Indoor and Outdoor	
760	Places of public assembly including theaters, stadiums, auditoriums, exhibition	1
79	Other Cultural and Entertainment Service land uses NEC	
790	Other cultural and entertainment service land uses NEC	1
8	Recreation	
81	Recreation Facilities and Parks - Outdoor (except golf courses and except swimming pools not in public parks)	
811	Private (except for homeowner association facilities)	1
812	Commercial - open to public	1
813	Government-owned - open to public with or without fee	1
82	Recreation Facilities - Indoor (except swimming pool)	
821	Private	1

Land Use Code	Description	Index
822	Commercial - open to public	1
823	Government-owned - open to public with or without fee	1
83	Golf Courses	
831	Private	3
832	Commercial	3
833	Government-owned	3
84	Swimming Pools (except homeowners association pools).	
841	Swimming pools - outdoor	3
842	Swimming pools - indoor	3
85	Boat Slips	
850	Boating Marinas - public and private	2
851	Condominium Boat Slips - private for sale	2
9	Resource Uses and Undeveloped Areas	
91	Agricultural Activities	
910	Agricultural activities and related services	3
92	Forestry Activities and Related Services	
920	Forestry activities and related services	3
93	Horticulture Activities	
930	Horticulture activities and related services	3
94	Resource Production and Extraction	
941	Sand and gravel quarrying	3
949	Other resource production and extraction	3
95	Permanent Conservation Areas	
950	Permanent conservation areas, including wildlife preserves	1
96	Water Areas	
960	Water areas	1
97	Vacant Land	
971	Vacant land	1
972	Improved land with dilapidated structure of no visible use, incidental shed, etc.	1
99	Other Resource Uses and Undeveloped Area NEC	
990	Other resource uses and undeveloped area NEC	1

Appendix B: Selected SIC Codes that within Fairfax County MS4 Service Areas

SIC	Description
241	Dairy Farms
751	Livestock Grooming
752	Dog Training/Pet Boarding Sitting & Kennels/Pet Services/Pet Funeral Servies/Pet Training/Pet Washing & Grooming
1311	Oil & Gas Producers
1611	Paving Contractors
2752	Printers (Mfrs)
2841	Soaps, Detergents, and Cleaning Preparations
2851	Paint Removers-Manufacturers
2911	Oil Refiners (Mfrs)/Petroleum Products-Manufacturers
2951	Asphalt Paving Mixtures and Blocks
4119	Limousine Service
4212	Hauling Debris Removal
4953	Garbage Collections/Junk Removal/Landfills- Sanitary/Pet Waste Removal/Refuse Systems/Waste Disposal-Hazardous/Medical
5015	Automobile Wrecking (Whls)
5084	Printer Cartridges (Whls)
5093	Recycling Centers (Whls)/Scrap Metals & Iron (Whls)
5169	Chemicals (Whls)/Chemicals-Storage & Handling (Whls)/Cleaning Compounds/Lubricants-Synthetic (Whls)/ Sealers-Asphalt, Concrete, Etc (Whls)
5171	Petroleum Bulk stations and Terminals
5172	Oils-Lubricating-Wholesale/Oils-Petroleum (Whls)
5191	Animal Health Products (Whls)/ Feed-Dealers (Whls)/Fertilizers (Whls)
5211	Building Materials
5261	Garden Centers/Mulches/Nurserymen
5511	Automobile Dealers-New Cars/Used Cars/ Limousine-Dealers
5541	Oils-Lubricating-Retail/Service Stations-Gasoline & Oil
5571	Mopeds/Motorcycles & Motor Scooters-Accessories/Dealers/Supplies
5999	Pet Supplies & Foods-Retail
6512	Shopping Centers & Malls
7342	Deodorizing & Disinfecting/Pest Control
7349	Janitor Service
7359	Carpet Rug & Cleaning Equipment-Rental/Contractors-Equipments Supls-Renting
7514	Automobile Renting
7532	Automobile Body-Repairing & Painting/Automobile Customizing
7533	Mufflers & Exhaust Systems-Engine
7536	Glass Coating and Tinting
7537	Transmissions-Automobile
7538	Automobile Repairing & Servicing/Automobile Machine Shop Service/Truck Repairing & Service
7539	Automobile Radiator Repair/Automotive Repair Shops/Brake Service/Carburetors
7542	Automobile Detail & Clean-Up Service/Car Washing & Polishing
7549	Automobile Lubrication Service/Automobile Inspection Stations New/Used/Wrecker Service
7623	Refrigerating Equip-Commercial-Service/Refrigerators & Freezers-Service/Repair
7933	Bowling Centers
7992	Golf Courses
7997	Swimming Pools-Private
7999	Golf Courses-Miniature/Golf Instruction/Golf Practice Ranges/7999 – Swimming Pools-Public

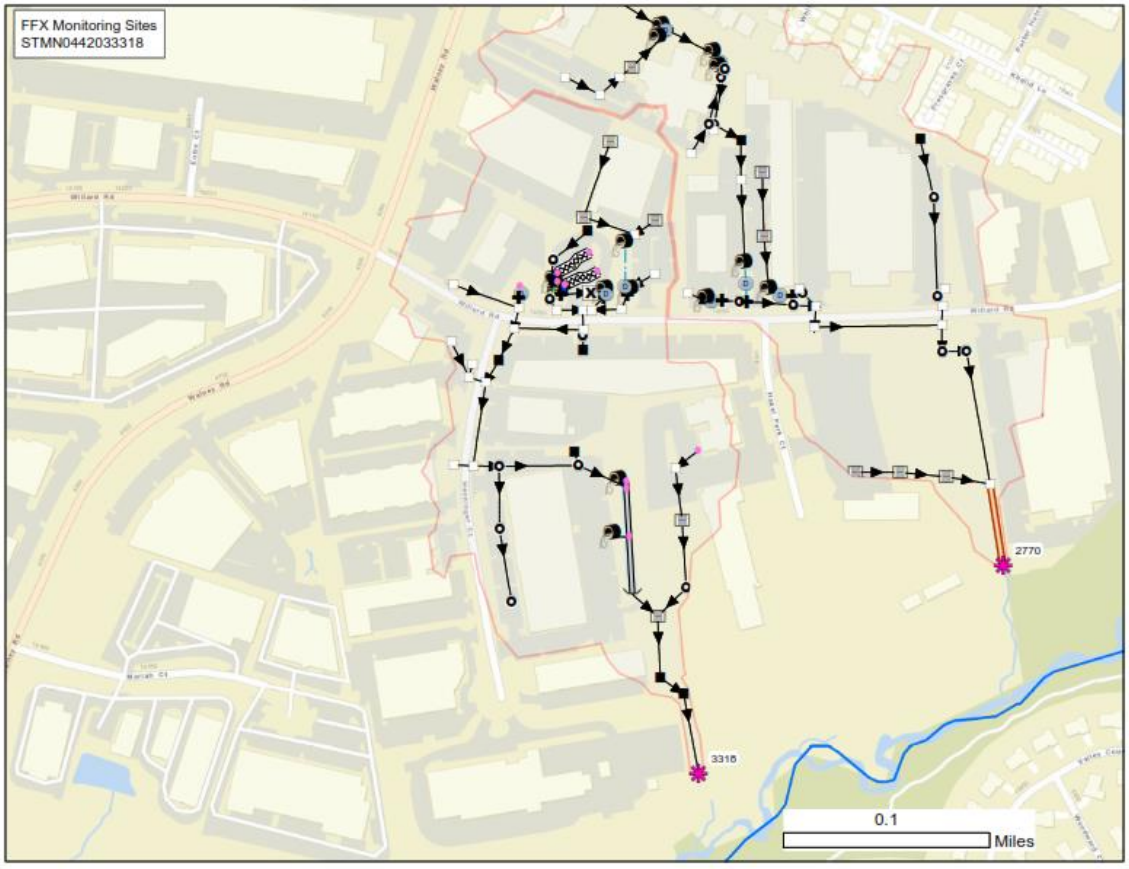
APPENDIX C: Graphical representation of site selection process



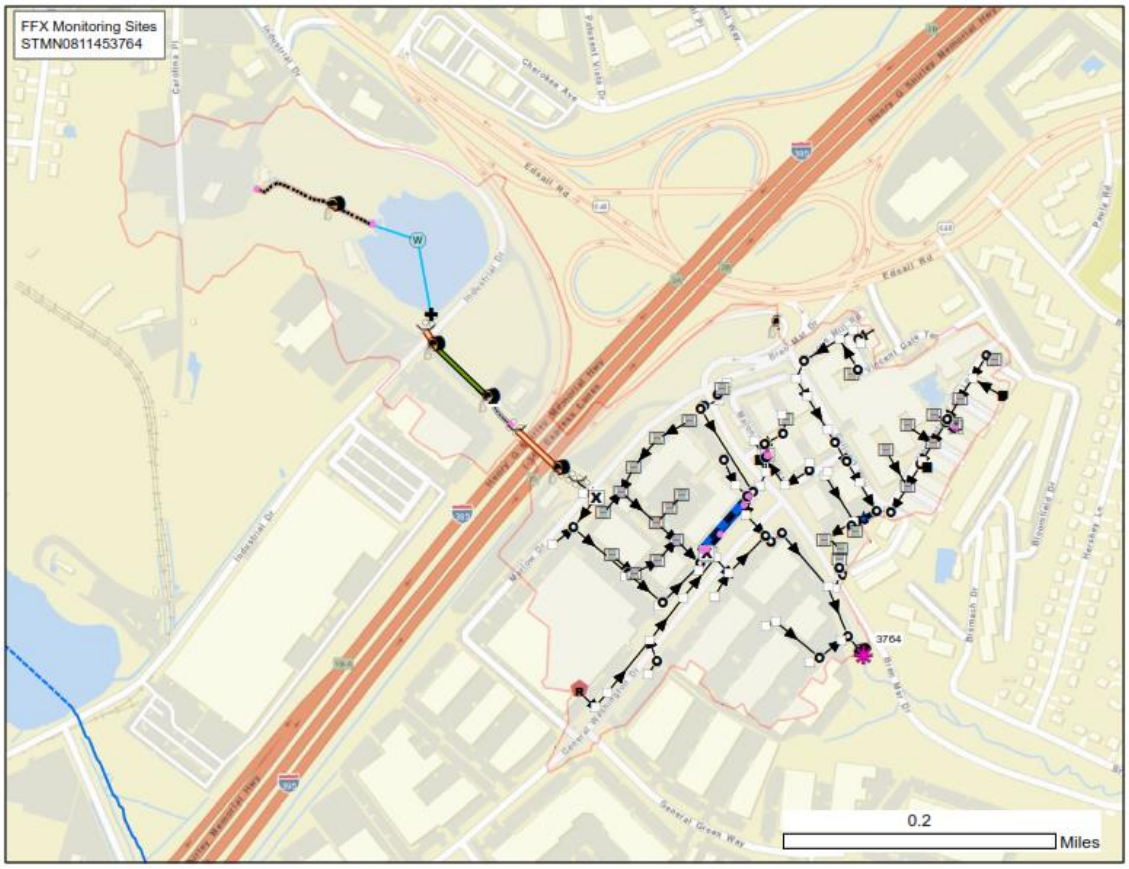
APPENDIX D: Maps and Photos of Selected and Alternative MS4 Service Areas

Selected Monitoring Sites

1. Fairfax Water, Chantilly Location; STMN0442033318

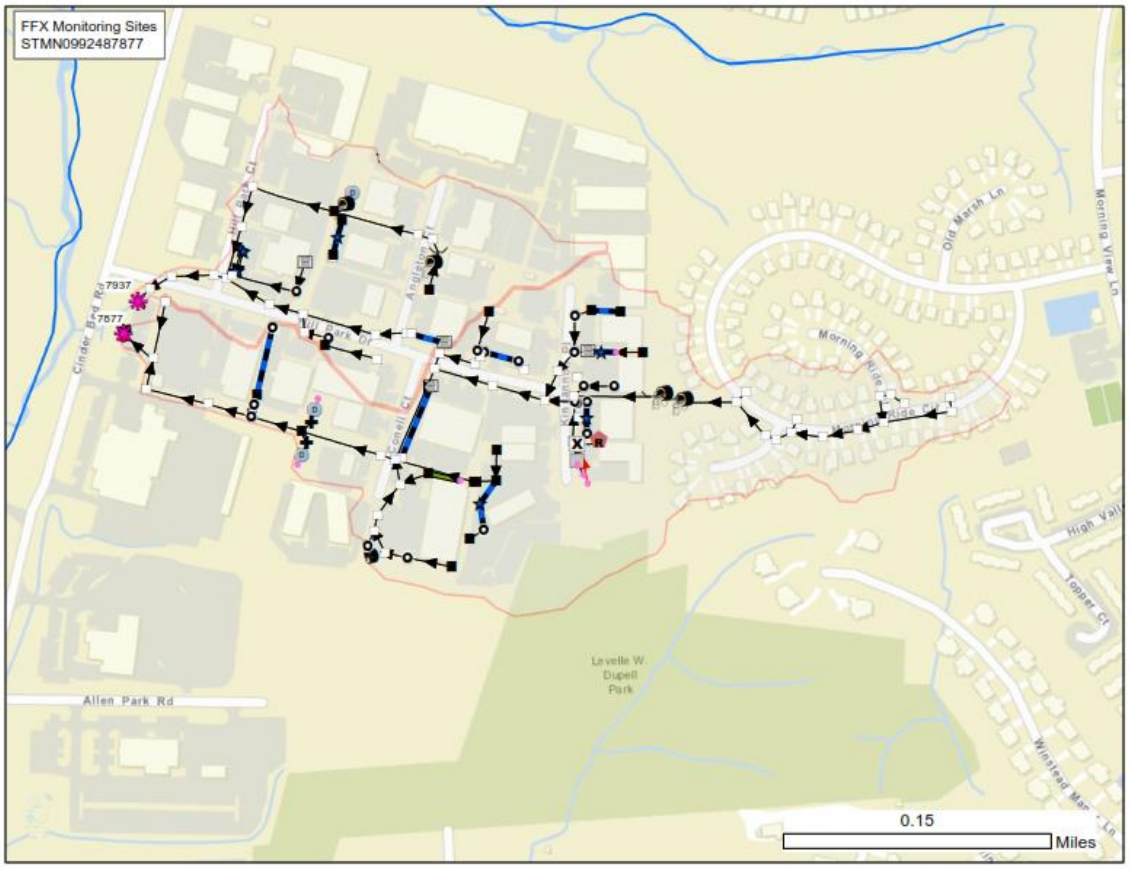


2. Bren Marr Park, near I-395; STMN0811453764

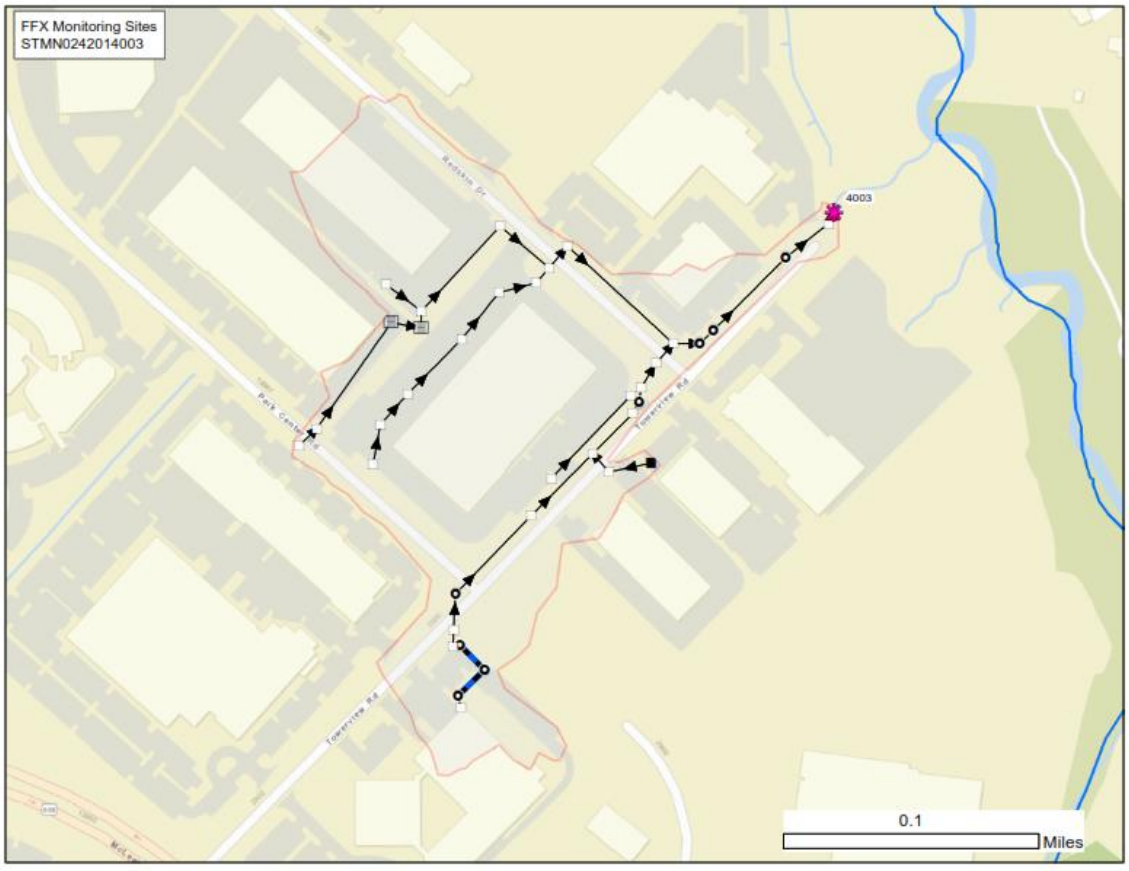


Alternate Monitoring Sites

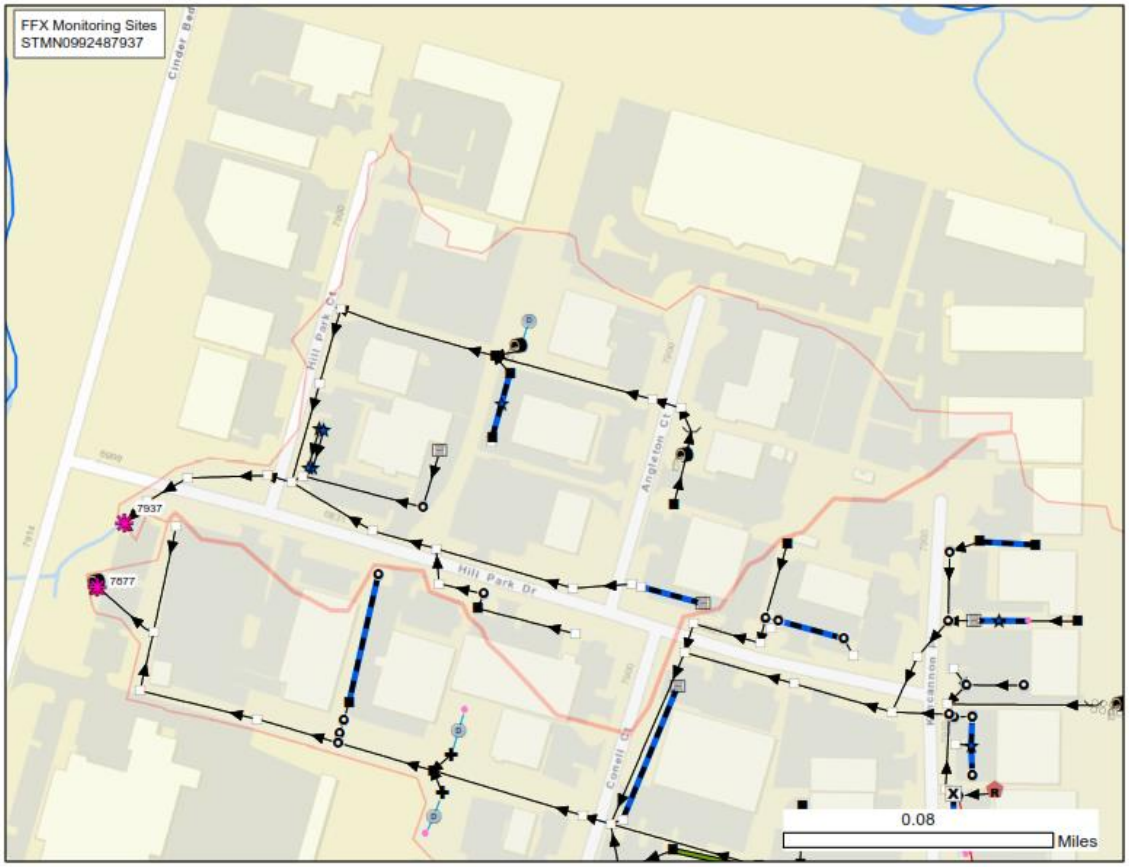
1. **Hill Park Dr, Lorton; STMN0992487877**



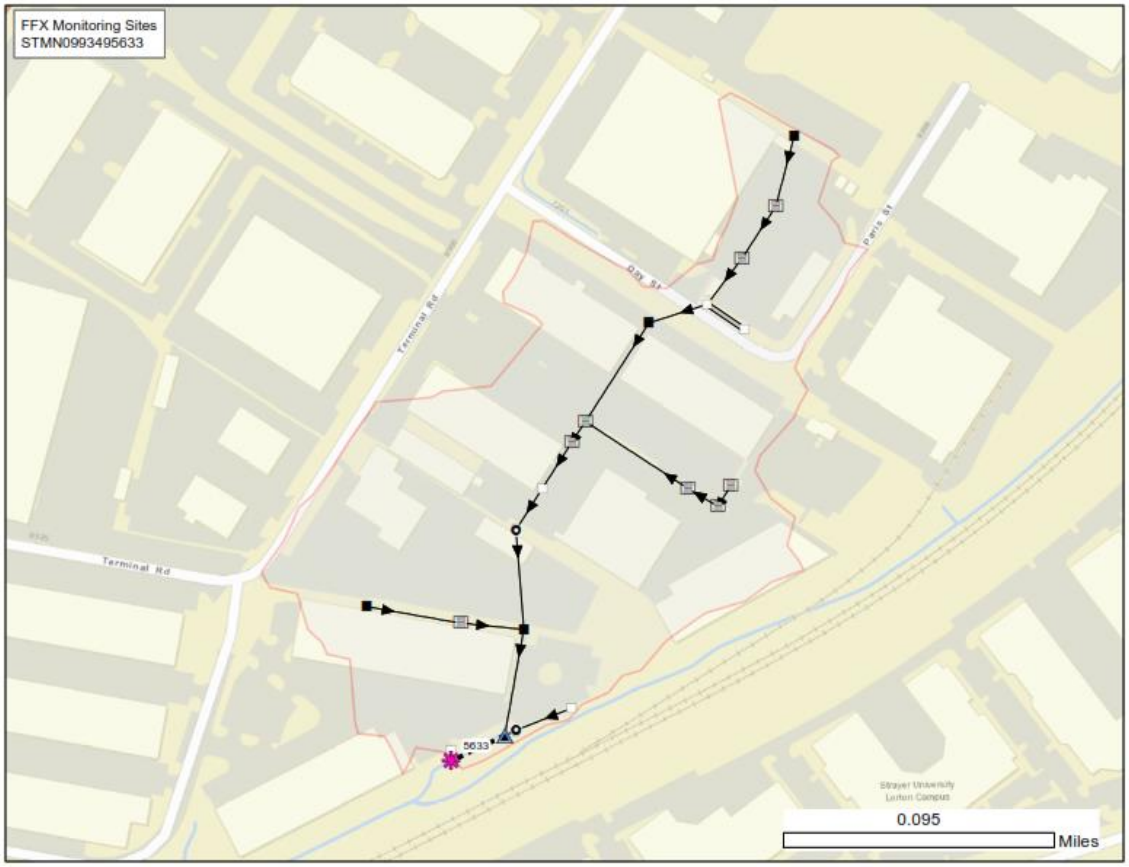
2. Towerview Rd, Herndon; STMN0242014003



3. Cinderbed Rd. and Hill Park Dr, Newington; STMN0992487937



4. Terminal Rd, Lorton; STMN0993495633



Appendix E: Wet Weather Monitoring Site Evaluation Form

WET WEATHER MONITORING SITE EVALUATION	
FIELD DATA COLLECTION FORM	
Date/Time:	**Lat/Long:**
Evaluator Initials:	**Adjacent Cross Streets:**
Outfall ID: STMN_____	**Predominant Land Use:**
LAND USE CHARACTERIZATION	
Percent breakdown of: Residential _____ Commercial _____ Industrial _____ **Institutional** _____	
Businesses/Organizations Nearby:	
POLLUTION POTENTIAL	
Check any that apply: ☐ **Outdoor material storage (uncovered, hazardous, leaking)** ☐ **Waste management (open/leaking dumpster, blowing trash)**	☐ **Parking lot stains** ☐ **Uncovered outdoor vehicle or equipment maintenance** ☐ **Outdoor vehicle fueling** ☐ **Outdoor industrial processes** ☐ **Other**
Description of items selected from above list:	
Description of stormwater controls on site (none, few, pervasive):	
Other:	
SAFETY	
Site Security (personnel and/or equipment):	

WET WEATHER MONITORING SITE EVALUATION			
Proximity to Traffic (traffic control needed?):			
Biological Hazards:			
Confined Space Entry Concerns:			
Other:			
INFRASTRUCTURE CONFIGURATION			
Check any that apply: ☐ **Concrete Ditch** ☐ **Pond/Scour Pool Present?** ☐ **Submerged?** ☐ **Pipe Conduit** ☐ **Pipe Shape** ☐ **Other** ☐ **Natural Channel** ☐ **Irregular Outfall Shape**			
Describe configuration and accessibility of feeder outfalls to natural channel or concrete ditch, if applicable:			
Pipe Diameter/Dimensions (in):			
Pipe Slope (%):			
Pipe Conditions (sediment, organic material):			
Receiving Waterbody:			
ACCESS			
Site located on private property?			
Slope/Terrain/Overgrown Veg:			
Fencing/Security (gate key/combo needed?):			
Travel Time:			
Suitable parking/egress?		**Distance from site to truck parking (approx.):**	

WET WEATHER MONITORING SITE EVALUATION			
Other:			
Sketch property layout:			
EQUIPMENT SETUP			
Access via Outfall or Manhole (if manhole, can tubing be routed with manhole cover in place?):			
Backwater Concerns:		**Proximity to bends/confluences in pipe:**	
Sedimentation concerns:		**Other concerns from flow:**	
Age of Infrastructure/Proximity to new development:			
Public Exposure/Visibility:			
Describe the proposed site layout:			
Other:			
Sketch equipment setup:			

Appendix F: Equipment Installation, Operation and Sampling Procedures

Wet weather screening equipment

The automated sampler to be employed will be an ISCO Model 6712 portable sampler capable of collecting up to 24 1000-mL water samples. The samples are contained in Propak liners constructed of polyethylene which are inserted into plastic frames to provide rigidity. The size of the samples and number of bottles will assure that several bottles will be filled corresponding to all portions of the storm event hydrograph. The automated sampler will be transported to the sampling sites prior to the storm event and removed after event conclusion. During the event, each sampler will be covered by a lid to protect it from the effects of weather. The samplers will be powered by 12 volt 100Ah rechargeable marine batteries. The sampler will be secured against theft when practical using bicycle locks attached to fixed objects such as fence posts.

Should site conditions require, an ISCO Model 6712C compact portable sampler may be used. This sampler is of a size and configuration that will allow it to be inserted and retrieved from a manhole and suspended using a pro-hanger and appropriate harness (for manholes 18 to 24 inches in diameter). Alternatively, the samplers may be secured using rebar loops inserted into the ground and combination bicycle locks to discourage theft.

Automated sampler placed in manhole using hanger and spring ring

AV Module The flow module measures water level within the pipe based on overlying water pressure exerted on bubbles pumped from the module that exit the bubbler tubing at the base of the pipe. Flow rates are calculated from the water level measurements based on Manning's Equation. The bubbler line is mounted to a "spring ring" or "scissors ring" that is secured within the pipe. If backwater conditions

exist at an outfall or within the MS4, an ISCO Model 750 area-velocity flow module and appropriate probe may be substituted in order to accurately determine flow rate.

On-site equipment installation

Materials, Equipment and Supplies:

- Confined Spaces entry apparatus (if necessary) consisting of tripod, winch, lanyard, harness, oxygen meter.
- Scissors ring or spring ring with appropriate extensions, where applicable
- Remote installation tool
- Bubbler line or area-velocity probe
- Suction line and stainless steel low-flow strainer
- Ratchet set, English
- Sensor carrier
- Cable ties
- Batteries and container

This work may occur in and/or around confined spaces. Staff shall be trained in confined space awareness and identification per OSHA guidelines. For work that involves entry into a confined space, the County (or an approved contractor) will mobilize a (minimum) two-person, permit-required, confined space certified crew with appropriate equipment to the site, and enter the facility adhering to applicable OSHA requirements for confined space entry. Standard operating procedures relevant to safety and health considerations for these monitoring activities are maintained under separate cover in the Fairfax County Stormwater Safety Manual. Confined-spaces entry-certified personnel and apparatus are to be used if installation is to be within a pipe inlet to a below-grade junction (pipes greater than > 15" diameter only; for pipes less than 15", see step 3).

1. Measure outfall pipe and assemble scissors ring with designated extensions. Retract brace by rotating nut counter-clockwise with ratchet.

2. Install sensor carrier and attach bubbler line or AV module to sensor carrier. Attach suction line to low-flow strainer and attach strainer to sensor carrier using cable ties. Insert scissors ring in pipe just upstream of outlet orifice; orient scissors ring so that metal bubbler line outlet is in the invert of pipe, pointing downstream.

3. In the case of 15" diameter or less pipes for within-network installations (i.e., not at an outfall), a remote, street-level installation tool can be used. Sensor carrier, strainer, and tubing are to be attached as described above.

4. The tubing can be secured by attaching to fixed objects such as tree roots or fencing to prevent tubing from laying in the waterway where it may become a target of debris snags. For within-network installations, the tubing can be tied off at the upper step of the closed manhole or threaded through manhole cover and secured on nearby brush until such time as storm event is monitored.

Preparation for storm event

Materials, Equipment, and Supplies:

- Programmable, automated sampler equipped with flow module
- 24 1,000-mL bottle configuration (or 500 mL, if applicable)
- Pro-hanger and harness for automated sampler, if applicable
- Ice
- Bike locks or chain and padlocks
- 12 volt 100Ah Marine battery

Meteorology

Obtain a storm forecast (e.g., from NOAA, Weather Underground, the Weather Channel, or Dark Skies). The meteorologist should be, beforehand, made aware of antecedent dry-time criteria (48 hours); minimum rainfall depth requirement (0.3 inches); and lead time required to gather sampling equipment, travel to the site, obtain ice, and place and program sampler. Such lead time will vary with distance from equipment storage.

1. Attach bubbler line (or area-velocity probe) and suction tubing to sampler. Attach suction line (other end) to low-flow strainer in pipe (if not already).
2. Make sure sampler is level.
3. Place ice in center of sampler.
4. When putting sampler back on top of bottom, make sure straps are outside, so distributor arm doesn't catch (or slip straps between bottle carrier and sampler bottom)
5. Program sampler to capture entire flow event. Program duration should reflect both the duration of the rain and estimated time allowance for sampling of trailing limb (rule of thumb for highly impervious catchments: 4 hours). To determine sample interval in minutes, multiply sum of the rainfall and trailing limb allowance in hours by 2.5.
6. Secure samplers to fencing or manhole steps using bike lock. Stabilize with line if necessary.
7. Attach sampler cover. Be sure that neither the suction line nor the bubbler tubing is pinched between the cover and sampler body. Also check the lines to be sure there are no holes.
8. If placing sampler in manhole using pro-hanger and harness, replace manhole cover by gently sliding horizontally over the hole. If the angle of the manhole is too great as it nears seating, it may press down on the pro-hanger with enough force to dislodge it and cause the sampler to drop to the bottom of the manhole.

Storm sample compositing

<u>Materials, Equipment, and Supplies:</u>

1. Laptop PC running Flowlink software
2. Discrete sample bottle caps
3. Ice
4. Graduated cylinders (100-mL and 500 mL)
5. Composite container

<u>Methodology:</u>

1. Open sampler body and examine bottles for presence of liquid. Cap each discrete bottle if containing liquid. Replenish with ice if necessary. Close sampler body and transport it to office/laboratory for sample processing.
2. Download sampler data to laptop PC. Create hydrograph of downloaded level data covering the time that the sampler was onsite in the field. Convert continuous level data to flow rate using Manning's equation and input appropriate coefficients for the specific pipe.
3. Export combined level and flow rate data into.csv file (e.g., "sitename levelflow [date of storm].csv").
4. Import level and flow rate data (name of level & flow files will appear as sites).
5. Construct table of discharges in the usual way, using flow rate data just imported and appropriate sample interval.
6. Export table of discharges to another .csv file (e.g., "sitename discharge [date of storm].csv").
7. Open discharge export file in spreadsheet. Copy 1st 24 bottles and times to template file. The template file will automatically calculate discrete volumes (volumes to add to composite bottle) once the formula is corrected to reflect volume at peak discharge [discrete volume = 1,000 mL or 500 mL for compact sampler].
8. Save the discrete volume file just created in Excel as a new file (e.g., "sitename discrete [date of storm].xls"). Print the spreadsheet and refer to it when compositing. Reduce discrete volumes by a proportional amount if the total volume is greater than the capacity of the 4-L bottle.
9. Use graduated cylinders to measure discrete aliquots.
10. After compositing, wash and rinse plastic bottles with phosphate free soap, 10% nitric acid solution, and deionized water.

Note: because of variations in water level in pipe over time, a discrete sample may be low or nonexistent despite a measurable discharge volume represented by the discrete sample as measured by the flowmeter. This is due to the fixed time frame that the sampler takes samples. At the time that the sampler takes the sample, there may be insufficient water in the pipe despite the fact that there was sufficient water at a different time during the interval between discrete samplings.

Appendix G: Example Wet Weather Screening Field Data Sheet

STORM EVENT

FAIRFAX COUNTY WET WEATHER SCREENING FIELD DATA

CREW Setup | Comp. | STATION | SVC AREA ID: _____ | YEAR MONTH DAY

STORM DURATION (hr) | SAMPLE INTERVAL (min) | SAMPLE BEGIN | TIME

TOTAL STORM PRECIP (in) | SAMPLE END

SLOPE:_____ DIAMETER:_____

CONSTRUC. MAT'L:_____ ROUGHNESS:_____

HYDROGRAPH/COMPOSITE INFORMATION:

SAMPLE COLLECTION DATA:

FIRST FLUSH SAMPLES
DATE/TIME OF COLLECTION _____

COMPOSITE SAMPLES
DATE/TIME OF COLLECTION _____

Bottle	Time	Interval discharge (cf)	Discrete vol
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			

F	X				S	T					G	W	Q

INSERT TYPE:_____

MANHOLE ID:_____

LATITUDE:_____

LONGITUDE:_____

SAMPLER SERIAL:_____

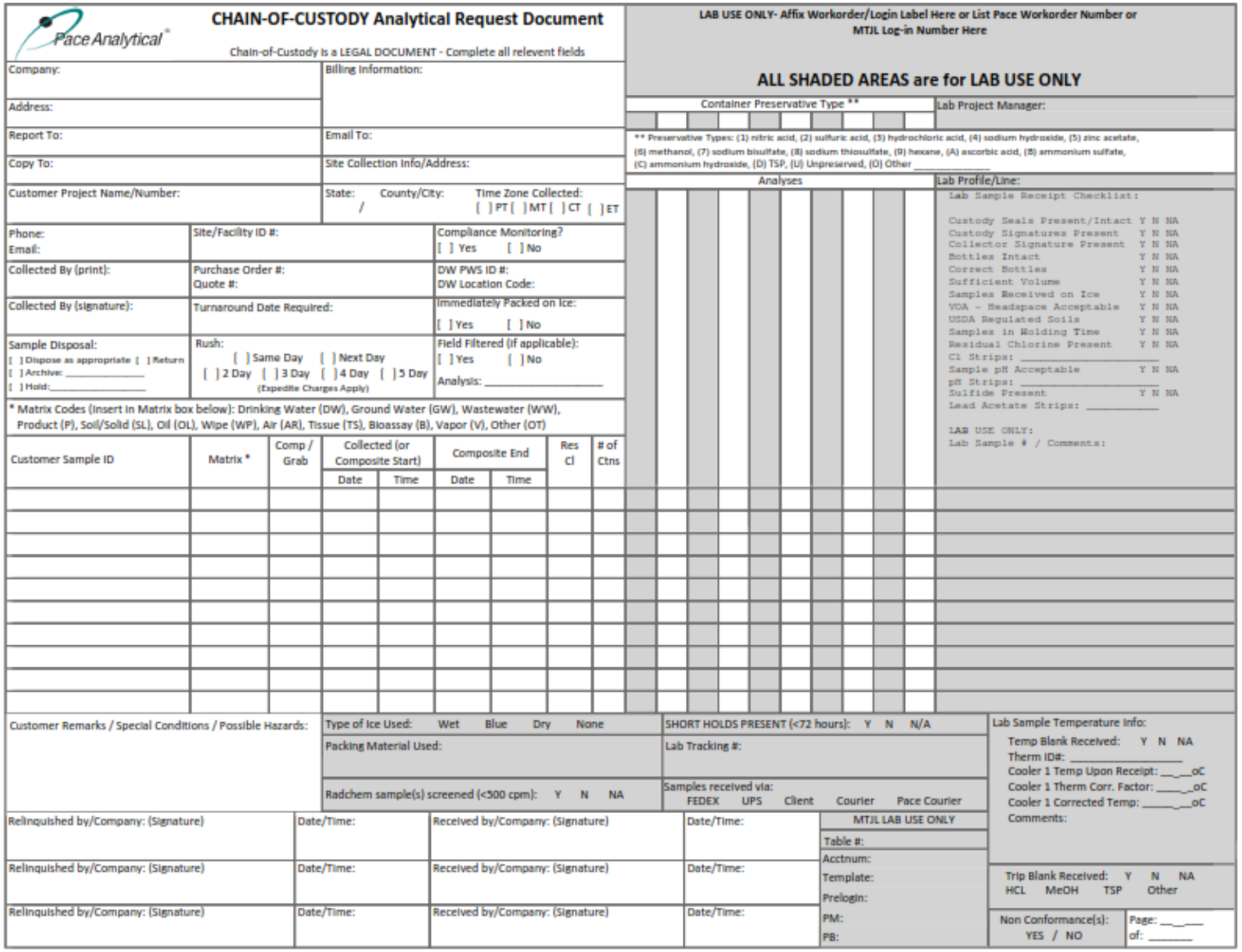
MODULE SERIAL:_____

pH:_____

Sp. Cond.:_____

REVIEWED BY _____ DATE: _____ TSJ 03/14

Appendix H: Chain of Custody Form



Pace Analytical

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevent fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

ALL SHADED AREAS are for LAB USE ONLY

Company:

Billing Information:

Address:

Report To:

Email To:

Copy To:

Site Collection Info/Address:

Customer Project Name/Number:

State: / County/City: Time Zone Collected: [ ] PT [ ] MT [ ] CT [ ] ET

Phone:
Email:

Site/Facility ID #:

Compliance Monitoring? [ ] Yes [ ] No

Collected By (print):

Purchase Order #:
Quote #:

DW PWS ID #:
DW Location Code:

Collected By (signature):

Turnaround Date Required:

Immediately Packed on Ice: [ ] Yes [ ] No

Sample Disposal:
[ ] Dispose as appropriate [ ] Return
[ ] Archive: _____
[ ] Hold: _____

Rush:
[ ] Same Day [ ] Next Day
[ ] 2 Day [ ] 3 Day [ ] 4 Day [ ] 5 Day
(Expedite Charges Apply)

Field Filtered (if applicable): [ ] Yes [ ] No
Analysis: _____

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns

Container Preservative Type **

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

Analyses

Lab Project Manager:

Lab Profile/Line:

Lab Sample Receipt Checklist:

Custody Seals Present/Intact Y N NA
Custody Signatures Present Y N NA
Collector Signature Present Y N NA
Bottles Intact Y N NA
Correct Bottles Y N NA
Sufficient Volume Y N NA
Samples Received on Ice Y N NA
VOA - Headspace Acceptable Y N NA
USDA Regulated Soils Y N NA
Samples in Holding Time Y N NA
Residual Chlorine Present Y N NA
Cl Strips: _____
Sample pH Acceptable Y N NA
pH Strips: _____
Sulfide Present Y N NA
Lead Acetate Strips: _____

LAB USE ONLY:
Lab Sample # / Comments:

Customer Remarks / Special Conditions / Possible Hazards:

Type of Ice Used: Wet Blue Dry None

Packing Material Used:

Radchem sample(s) screened (<500 cpm): Y N NA

SHORT HOLDS PRESENT (<72 hours): Y N N/A

Lab Tracking #:

Samples received via: FEDEX UPS Client Courier Pace Courier

Lab Sample Temperature Info:
Temp Blank Received: Y N NA
Therm ID#: _____
Cooler 1 Temp Upon Receipt: ___.__oC
Cooler 1 Therm Corr. Factor: ____.__oC
Cooler 1 Corrected Temp: ____.__oC
Comments:

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:

MTJL LAB USE ONLY
Table #:
Acctnum:
Template:
Prelogin:
PM:
PB:

Trip Blank Received: Y N NA
HCL MeOH TSP Other

Non Conformance(s): YES / NO

Page: ___ of: _____

Fairfax County 2021 MS4 Program Plan and Annual Report

Appendix P13

Standard Operating Procedures for the MS4 Biological Stream Monitoring Program

VSMP Permit Number VA0088587
9-30-2021

Department of Public Works and Environmental Services
POLICIES AND PROCEDURES Memorandum No.: SWPD16-07

SUBJECT: Standard Operating Procedures for the MS4 Biological Stream Monitoring Program

Effective: 09/01/2016 Revised: Approval:

I. Purpose

Fairfax County's (renewed) 2015 Virginia Stormwater Management Program (VSMP) Municipal Separate Storm Sewer System (MS4) permit includes provisions to evaluate the condition of select streams within the county by conducting biological stream monitoring. The applicable requirement of the permit (Part I, Section C.1) states:

The permittee shall continue to implement a biological stream monitoring program to evaluate the condition of select stream sites within Fairfax County as follows:

- *Five (5) stream sites within Fairfax County shall be selected for monitoring during the term of this permit.*
- *Monitoring shall be conducted twice per year with one sample collected between July 1st and December 31st and one sample collected between January 1st and June 30th each year at each "selected stream site."*
- *The permittee shall use a biological stream monitoring approach based on "USEPA's Rapid Bioassessment Protocols for Use in Streams and Wadeable Rivers" or other method approved by the Department, and shall include an assessment of the benthic macroinvertebrate community and habitat assessment.*

SPECIFIC REPORTING REQUIREMENTS:

- *The annual report due October 1, 2016 shall include the list of sites to be monitored during the term of the state permit and monitoring protocols.*

- *Beginning with the annual report due October 1, 2017, each annual report shall include a summary of the monitoring results and analyses and an interpretation of that data with respect to long-term patterns/trends.*

This Biological Stream Monitoring Program Standard Operating Procedure (SOP) describes Fairfax County's site selection and sampling protocols for executing this program and provides a framework for full compliance with the above MS4 permit requirements.

This document contains the following:

- Site Selection Protocol
- Field and Lab Protocols for Biological Stream Monitoring
- Data Management/Quality Control
- Products of the Program
- References
- Appendices

II. MS4 Biological Stream Monitoring Program

A. Program Goals

Since 2007, Fairfax County has been conducting an extensive monitoring program in partnership with the United States Geological Survey (USGS). This program was designed by USGS and Fairfax County Stormwater Planning staff to accomplish the following objectives:

- Generate long-term monitoring data to describe:
  - Current water-quality (sediment and nutrients) and quantity conditions
  - Trends in water-quality and quantity
  - Nutrient and sediment loads and yields
  - Current biological (benthic macroinvertebrate) conditions
  - Trends in biological (benthic macroinvertebrate) conditions
- Evaluate relationships between observed conditions/trends and stormwater best management practice (BMP) implementation throughout Fairfax County.
- Transfer the understanding gained from intensively monitored watersheds to less-intensively monitored ones.

To utilize the existing monitoring program network to support the MS4 Permit, Fairfax County will continue ongoing benthic macroinvertebrate sampling at selected sites while adhering to the monitoring frequency specified in the MS4 Permit. The robust dataset already collected can provide significant value to assist with data interpretation with respect to long-term patterns and trends.

B. Site Selection Protocol

For the MS4 Permit, Fairfax County has chosen the five most intensely monitored sites within the existing partnership study with USGS. The site selection was based on available watershed characterization data, the presence of a Board of Supervisors-adopted watershed management plan, the timetable for BMP implementation, and local knowledge of the watersheds. In general, an effort was made to limit the size of basins to 6 mi^2 or smaller to ensure that changes in the basins were detectable. Watershed characterization data from the Fairfax County watershed management plans along with other available datasets were used to classify and evaluate all potential monitoring basins. Ultimately, the primary factors used in the analysis and site selection process were:

- Land Use (10 land use classes)
- Presence of water quality and/or quantity controls (and % area served by controls within each basin)
- Existing Index of Biotic Integrity (IBI) scores
- Percent impervious cover in each basin
- Average basin slope
- Planned stormwater BMP implementation

The goal is to ensure that the monitoring network effectively characterizes the range of watershed conditions within Fairfax County. To accomplish this goal, a cluster analysis was performed (using the statistical package SPLUS) to group the basins into similar types and to select representative sampling sites from the resultant clusters. Hierarchical clustering was performed, and the complete linkage approach was used for joining clusters because little was known about the variance and sample size for each cluster. Land use was shown to be the most influential factor in the cluster analysis.

Table 1: Site Name and Characterization for Fairfax County MS4 Biological Stream Monitoring Program.

Site Name	Watershed	Drainage Area (mi^2)	% Impervious Area
Dead Run	Dead Run	2.09	30.97
Difficult Run	Difficult Run	5.47	27.61
Flatlick Branch	Cub Run	4.26	28.60
Long Branch	Accotink Creek	3.79	25.66
South Fork Little Difficult Run	Difficult Run	2.71	14.02

A map of the five biological stream monitoring locations is in Appendix A.

III. Field Protocol for MS4 Biological Stream Monitoring Program

This section provides details of the protocols to be followed during biological stream monitoring and includes descriptions of safety procedures, sampling frequency, proper sampling equipment, and sampling protocols.

A. Health and Safety

Ensuring the health and safety of field personnel is the responsibility of every member of the staff for the project. The collective effort of all staff members in providing a healthy and safe work environment helps to minimize or eliminate the potential for accidents. In general, the following safety protocol is followed to protect the field staff:

- Perform field work in teams of at least two.
- Bring mobile phone and first aid kit on all field site visits.
- Exercise caution when encountering any wildlife and hazardous plants.
- Use common sense during electrical storms and/or when severe conditions (e.g., high wind, hail) develop. The safety of field staff overrides all other considerations.

Additional information on Health and Safety may be found in Appendix B, including information on field staff conduct, personal protective equipment, confined space entry, dangerous flora and fauna, unknown hazardous substances and wastes, blood-borne pathogens, remote areas, weather-related hazards, and heat and cold stress.

B. Sampling Frequency

As specified by the permit, monitoring shall be conducted twice per year with sampling windows between July 1st to December 31st and January 1st to June 30th at each of the 5 established monitoring locations. Fall sampling will be conducted in the October/November timeframe and the spring sampling will be conducted in the March/April timeframe to coincide with Fairfax County's current biological monitoring window.

C. Field Work Preparation

A. Equipment Checklist

Before heading out into the field, staff should assemble the following equipment:

- Standard D-frame dip net, 500-micrometer (µm) opening mesh, 0.3-meter (m) width (~ 1.0 ft. frame width)
- Sieve bucket, with 500 µm opening mesh
- Large polyethylene wash tray
- Sieve with 500 µm opening mesh
- 2-liter (L) HDPE Nalgene® sample jars, lids
- Forceps
- Packing tape
- Pencils, clipboard & calculator
- Benthic Macroinvertebrate Field Sheet (Appendix C)
- Habitat assessment form (Appendix D)
- Site maps
- Waders and insulated neoprene gloves
- Weatherproof labels for bottles
- Chemical proof labels for inside bottles
- Permanent/indelible markers

D. Benthic Macroinvertebrate Sample Collection

Benthic macroinvertebrate communities are a major component of any healthy stream system. They are an important link in the aquatic food web, forming the core diet of many stream fishes and other aquatic life forms. These organisms are also useful indicators of water quality, due to their short life spans and their varying tolerances to disturbance, including chemical, organic, and sediment pollution.

A. Benthic Field Sampling

Selected sites will sampled in the early spring between March and April (prior to the spring/summer emergence of many adult aquatic insects). The 100-m sampling reaches will be sampled using the "20-Jab" or "multi-habitat" Mid-Atlantic Coastal Streams Workgroup (MACS) method (USEPA, 1997). This method was developed specifically for streams with variable habitat structure and adopted for use in USEPA's Rapid Bioassessment Protocol II (RBP II) for benthic macroinvertebrate sampling in streams and wadeable rivers (Barbour et al., 1999). Observed habitats within the sample reach are proportionally sampled using twenty 0.5-m- "jabs" with the D-frame net. Habitats are designated as vegetated (undercut) banks, submerged macrophytes (aquatic vegetation), sand, cobble, and snags. Samples collected in the field have the larger organic debris removed and then are placed in 2L HDPE Nalgene® jars. Sample jars are labelled both internally and externally with the site code, collection date and time, sample number and the collection team's initials. The collecting team members should ensure that the information on the internal and external labels match each other, as well as the information on the site map and field data sheet. Labeled jars are then transported to a laboratory where they are logged in on the Benthic Macroinvertebrate Sample Log-In Sheet (Appendix E), preserved with 95% denatured ethanol and stored in flameproof cabinets for later subsampling and taxonomic identification. Samples selected for processing (subsampling, sorting and enumeration) by an outside contractor are also logged in on the Fairfax County Benthic Macroinvertebrate Sample Chain-of-Custody Sheet (Appendix F).

B. Benthic Macroinvertebrate Subsampling and Identification

The following laboratory equipment will be used to subsample, sort, enumerate and identify benthic macroinvertebrate samples:

- Previously collected benthic sample in 2L HDPE Nalgene® jars(s)
- 8-inch diameter sieve with 500-µm mesh
- Benthic sample sorting grid (30 squares) with 500-µm mesh
- Polyethylene wash tray
- Dissecting microscopes (stereoscopes)
- Fiber-optic light source
- 95% ethanol (denatured)
- 20 milliliter (ml) screw top glass specimen vials (with Teflon™ lids) and label tape
- 9-unit laboratory counter with grand total counter
- Petri dishes & extra-fine/jewelers forceps
- Benthic Macroinvertebrate Sorting Log-In Sheet (Appendix G)
- Benthic Macroinvertebrate Identification Form (Appendix H)

Field samples selected for in-house subsampling, sorting and enumeration are logged in on the Benthic Macroinvertebrate Sorting Log-in Sheet. Each sample is rinsed and spread over the surface of a 30 x 36-centimeter (cm), 500-µm mesh sample sorting grid (Caton, 1991) [very large volume samples may be divided into two sorting grids]. The sorting grid is placed in enough water to cover the sample and allowed to hydrate for at least 10 minutes. A subsample of individuals is picked or "sorted" from a randomly selected square subdivision marked on the grid's surface (30 total squares). The sorting is accomplished by removing debris and organisms from the randomly selected square, placing this mixture into a water-filled white plastic tray which is illuminated via fiber optic lights, and carefully removing all organisms (a microscope is not used for subsampling but may be used to verify an organism). It is quite helpful to inspect and remove larger debris from the tray. Once that square is fully picked, another randomly selected square is then picked until a minimum of 200 (not to exceed 240) organisms are obtained. If picking through an entire grid is likely to result in a subsample of greater than 240 organisms, then that grid is subsampled in the same manner as before to decrease the likelihood of exceeding 240 organisms. Subsampling is accomplished by spreading the contents of a grid into another gridded pan and further sorting by picking grids one at a time until the target number is reached. If a specimen lies across 2 squares, it belongs to the square containing its head.

Specimens fall into one of three groups; 1) Chironomidae, 2) Oligochaeta, and 3) all others. Organisms that are not counted in the sample include vertebrates (e.g. salamanders, newts, fish), zooplankton (i.e. copepods), non-aquatic macroinvertebrates (e.g. adult dipterans), or aquatic macroinvertebrate individuals too damaged to identify (e.g. lacking a head). Organisms from each site's subsample are tallied by group and transferred to one of three sample vials (one vial for each respective group), preserved with 95 percent ethanol, and labeled with the following information:

- Site code
- Date collected (found on sample jar label)
- Date sorted

- Sorted by (sorter's initials)
- Particular sample group (C = Chironomidae, O = Oligochaeta, • = others).
- Number of organisms in the particular group vial
- Total number of organisms in the sub-sample (200 < n < 240)

The total number of "squares" from the sorting grid that were picked to reach the 200 organism target number is recorded on the Benthic Macroinvertebrate Lab Bench Sheet. In compliance with protocols, after laboratory processing is completed for a given sample, all sieves, pans, trays, etc., that have come in contact with the current sample will be rinsed thoroughly, examined carefully, and picked free of organisms or debris. Any organisms found are added to the sample residue, which is then re-preserved in 95% ethanol.

Once site samples are subsampled, sorted and labeled, taxonomic identifications will then be made to the genus level (whenever possible) using microscopes. Genus level classification of macroinvertebrate samples will be performed using select taxonomic keys (e.g. Pennak, 1989, Peckarsky et al., 1990, Wiggins, 1996, Merritt et al., 2008, Stewart and Stark, 2002). Certain specimens may be physically damaged to such an extent that accurate genus-level identification is not possible. In these situations, the lowest possible taxonomic identification will be noted on the data sheet. Time constraints prevent the more detailed examinations required to identify taxa such as aquatic worms (Oligochaeta) and midge larvae (Chironomidae) to this level. Therefore, oligochaetes will be identified at the class level, and chironomids will be identified at the family level. The representatives in each respective taxonomic grouping will be enumerated, recorded and summed on the Benthic Macroinvertebrate Identification Form (Appendix H). The final total number of organisms will be recorded along with the date the identification was completed and the taxonomist's initials. All individuals from the subsample will then be returned to the 95 percent ethanol solution and held for at least one year.

E. Habitat Assessment

Habitat assessments will be conducted at each monitoring location using the USEPA's Habitat Assessment Form (Appendix D). The assessments will be conducted in conjunction with the benthic macroinvertebrate sampling and will be a collaborative effort between the members of the sampling team.

F. Data Analysis

Each annual report shall include a summary of the monitoring results and analyses and an interpretation of that data with respect to long-term patterns/trends. The Virginia Stream Condition Index (VASCI) (Burton, 2003) will be used with the benthic macroinvertebrate data to assess site conditions and long term trends of biological health.

IV. Data Management/Quality Control

A. Documentation of Field Monitoring

A dedicated sample label (Figure 1) will be created in the field and applied to sample containers for each collected sample. The label will include the following information:

- Site Name
- Sample Date

- Sample Time
- Investigators
- Number of sample containers
- Any comments relevant to the stream conditions

Fairfax County WPAB Benthic Sample		
Site ID:	Sample # of	
Collected by:	Date:	
QC site: Yes No	Time:	AM / PM
Comments:		
Warning: Sample contains 95% Ethanol as a preservative. Please see the SDS for safety instructions.		

Figure 1: Benthic sample jar label

B. Chain of Custody

Chain of custody (COC) forms (Appendix F), are a permanent record of transfer of sample custody. Custom COC forms for this project are located at the Springfield Lab and are filled out when samples are delivered and when they are processed.

C. Quality Control

Training for benthic macroinvertebrate sampling, lab protocols and habitat assessment will occur on a yearly basis to refresh current field personnel and teach new field staff the protocols used.

V. Anticipated Products of the Program

A. Biological Stream Monitoring Yearly Report

- A report on biological stream monitoring will be prepared for use in the development of the County's annual MS4 report to VA DEQ at the end of each MS4 reporting year (July 1 – June 30). The annual report due October 1, 2016 will include the list of sites to be monitored during the term of the state permit and monitoring protocols. Beginning with the annual report due October 1, 2017, each annual report shall include a summary of the monitoring results and analyses and an interpretation of that data with respect to long-term patterns/trends.

VI. Administrator of the SOP

This SOP document is administered by the Stream Monitoring Section within the Stormwater Planning Division. For more information about this document, please call the Stormwater Planning Division at (703) 324-5500.

VII. References

Barbour, M. T., J. Gerritsen, B. D. Snyder, and J. B. Stribling. 1999. Rapid Bioassessment Protocols for Use in Streams and Wadeable Rivers: Periphyton, Benthic Macroinvertebrates and Fish, Second Edition. EPA 841-B-99-002. U.S. Environmental Protection Agency; Office of Water; Washington, D.C.

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Merritt, R. W., K. W. Cummins, and M. B. Berg. 2008. An Introduction to the Aquatic Insects of North America. Fourth Edition. Kendall Hunt Publishing Company. Dubuque, IA

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Pennak, R. W. 1989. Fresh-water invertebrates of the United States. 3rd Edition. John Wiley and Sons, Inc. New York.

Stewart, K. W. and B. P. Stark. 2002. Nymphs of North American Stonefly Genera. Second Edition. The Caddis Press. Columbus, Ohio.

US Environmental Protection Agency; 1997; "Field and laboratory methods for macroinvertebrate and habitat assessment of low gradient nontidal streams"; Mid-Atlantic Coastal Streams Workgroup, Environmental Services Division, Region 3, Wheeling, WV; 23 pages with appendices.

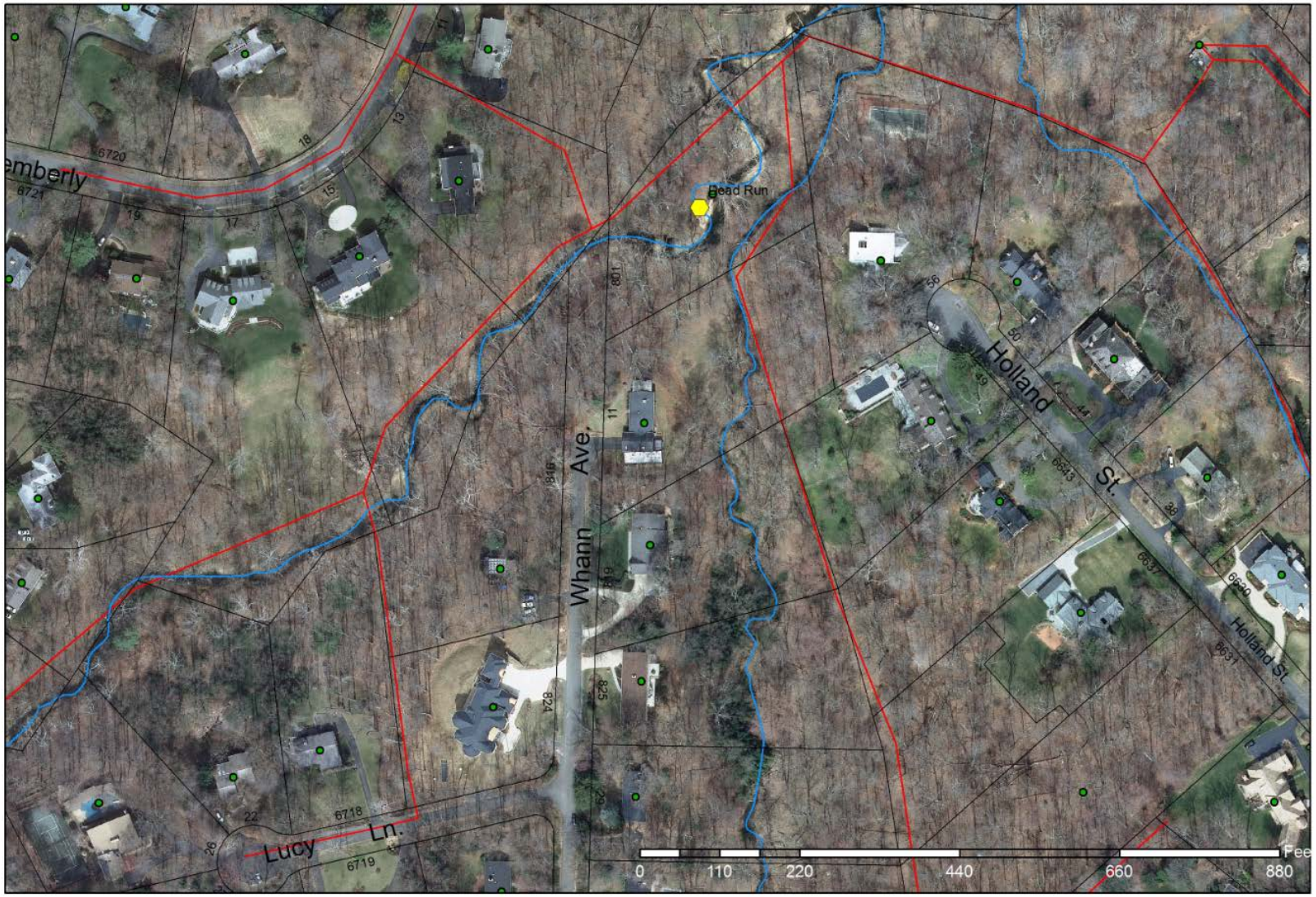
Wiggins, G. B. 1996. Larvae of the North American Caddisfly Genera (Trichoptera). Second Edition. University of Toronto Press Incorporated. Toronto, Ontario.

VIII. Appendices

A. Fairfax County MS4 Biological Monitoring Locations
B. Health and Safety Guidance for Biological Stream Monitoring Field Work
C. Benthic Macroinvertebrate Field Sheet
D. Habitat Assessment Form
E. Benthic Sample Log-In Sheet
F. Benthic MS4 Chain of Custody Form
G. Benthic Macroinvertebrate Sorting Log-In Form
H. Benthic Macroinvertebrate Identification Form

Appendix A: Fairfax County MS4 Biological Monitoring Locations

Dead Run USGS Sites
Tax Map 21-2

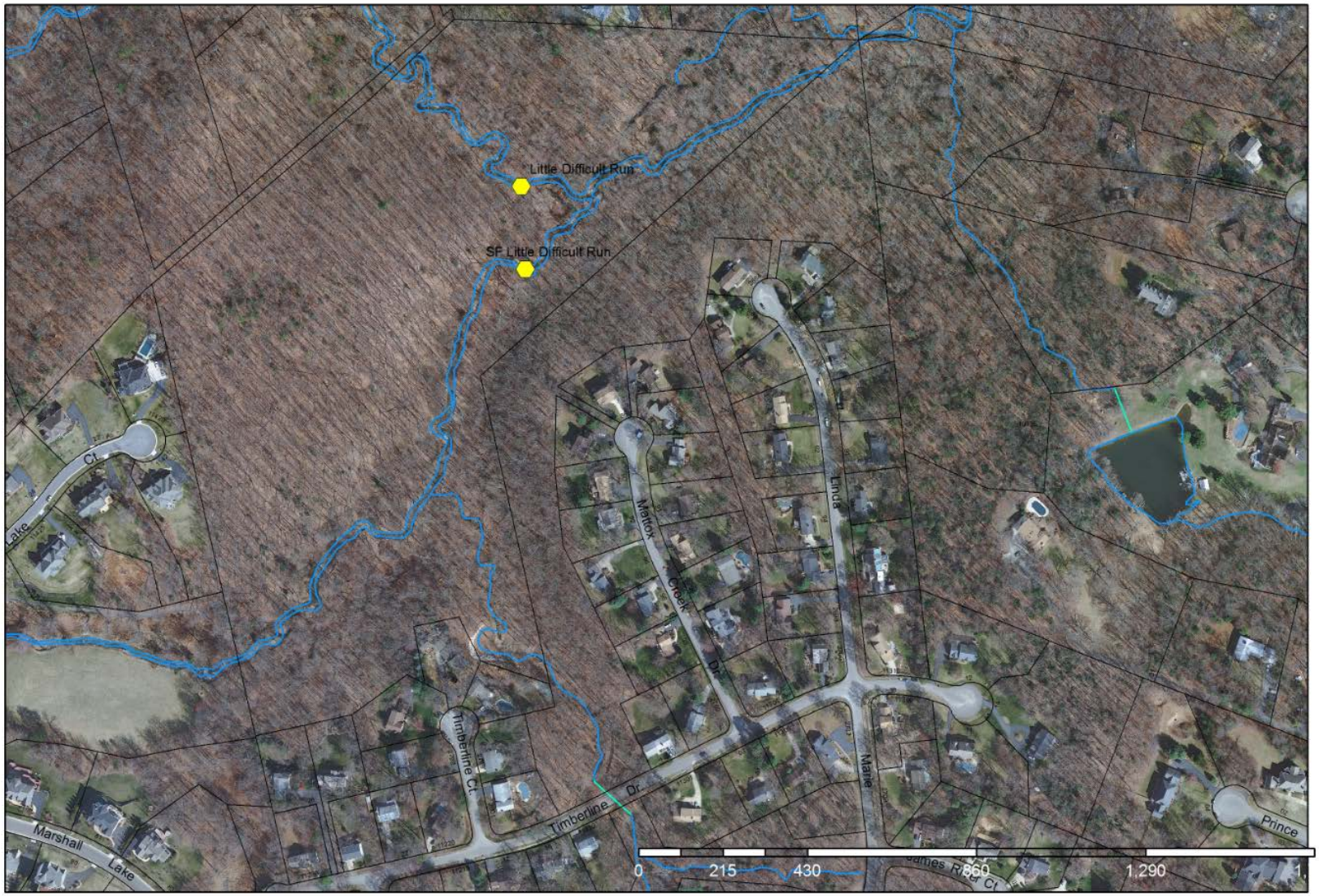


Difficult Run USGS Sites
Tax Map 47-1

Flatlick and Frog Branches (Cub Run) USGS Sites
Tax Map 44-2

Long Branch (Accotink Creek) USGS Site
Tax Map 70-3

N. & S. Fork Little Difficult Run USGS Sites
Tax Map 36-2



Appendix B: Health and Safety Guidance for Biological Stream Monitoring Field Work

General

Health and safety responsibility and accountability involves every employee. The collective effort of all employees in providing a healthy and safe work environment will minimize or eliminate the potential for accidents. In general, field sampling will require the following safety protocols to protect the field staff:

1. Perform field work in teams of at least two.
2. Bring cell phone and first aid kit on all field site visits.
3. Exercise caution when encountering any wildlife and hazardous plants. In addition, many outfalls are located in remote areas that may be near gathering places for homeless or transient individuals. Do not enter a potentially hostile area.
4. Take proper precautions (e.g. seek shelter) during electrical storms and/or when severe conditions (e.g., high wind, hail) develop. The safety of field staff overrides all other considerations.
5. Streams may contain a variety of water-borne bacteria and other harmful chemicals. Wash hands or use anti-bacterial wipes or hand gels liberally, especially prior to lunch breaks, etc.

Conduct

All field staff are expected to:

- Understand and comply with health and safety policies. Each employee is not only responsible and accountable for his/her own actions, but for those others around him/her.
- All employees shall show professional courtesy to fellow employees, clients, subcontractors, regulators, the general public and visitors.
- Understand and follow good health and safety practices.
- Horseplay, practical joking, inattention to work or other inappropriate accident-causing behavior will not be tolerated.
- Use of alcohol or controlled substances is prohibited.
- While traveling to and from the job site, employees shall: obey all federal, state and local regulations regarding seat belt use, all traffic laws, and any other laws regarding proper conduct in public areas.

Personal protective equipment (PPE)

Engineering and administrative controls will be used as the primary means of exposure control, as required by OSHA standards. However, PPE may also be necessary to further minimize potential employee exposure. All employees shall dress appropriately for the tasks to be performed. Specialized health and safety equipment, including PPE, monitoring equipment, and other devices designed to protect the employee shall be issued to the employee on an as-needed basis.

Employees performing field activities and certain laboratory functions have the potential of coming in contact with hazardous materials. Many of these hazardous materials can cause significant injury or illness through acute or chronic exposures. For field work (including industrial operations), all field employees are required to wear the following basic PPE:

- Appropriate work clothing
- ANSI-approved steel-toed, steel-shank boots
- ANSI-approved safety glasses
- ANSI-approved hard hat (when overhead hazards exist)
- Hearing Protection (when appropriate)
- Rain Gear (when appropriate)

Confined space entry program

A confined space is any location not intended for human occupation, has limited or no ventilation, has the potential for containing dangerous or lethal atmospheres, and has limited ingress/egress. OSHA has addressed confined space entry requirements and procedures in 29 CFR 1910.146 (Permit Required Confined Spaces) and 1926.651 (Excavations). Confined space entry will not be performed under any circumstances during this monitoring.

Dangerous flora and fauna

During the course of field activities, employees may come in contact with a wide range of dangerous or toxic animals and plants. Dangerous animals may include: black widow and brown recluse spiders; fire ants; mosquitoes and biting flies; bees, wasps and hornets; ticks and chiggers; microbial organisms (e.g., found in water, soil, and air and on carrier/host organisms); dogs; rabid mammals; and poisonous snakes. Dangerous plants may include: thorny plants; poison ivy, oak, and sumac; and molds, mildews, and fungi (which may cause allergic reactions). Contact with these organisms can cause effects from simple discomfort (such as from thorny bush scratches) to severe allergic reactions and possibly death. If interactions do occur, take appropriate actions related to specific interaction and individual response to interaction. Appropriate, suitable PPE is provided to all field staff (e.g. insect repellant, first aid kits, etc.)

Blood borne pathogens (BBP)

Exposure to BBP is possible in the case of certain emergency situations. Personnel may be exposed to body fluids such as blood, saliva, vomit, mucus or others. These fluids could contain pathogens that have the potential for causing disease in humans. Should personnel be required to administer life-saving procedures, such as CPR, the following procedures will be followed to minimize the potential for exposure:

1. Wear disposable gloves when hand contact with blood, mucus membranes, non-intact skin or other potentially infectious materials could be involved;
2. Use disposable mouthpieces, pocket masks or other ventilation devices for administering artificial ventilation;
3. Wash hands with soap and water after administering first aid;
4. In the case of eye contact, flush eyes using an eye wash for at least 15 minutes;
5. Remove garments contacted by blood or other body fluids as soon as possible;
6. Do not eat, drink, smoke or handle contact lenses in areas with possible BBP exposure; and
7. Persons cleaning up an accident scene should not pick up broken glass or other sharp objects by hand. All clothes and other items at the first aid scene should be safely secured prior to leaving.

Employees who may have been exposed to BBPs should report the incident at once.

Remote areas

The sampling team may be located in areas not readily accessible by vehicle. Radio or phone communication will be maintained from the sampling team to a base station in the event of an emergency.

Heavy lifting

It may be necessary to carry sampling equipment (e.g., coolers, sampling containers, and equipment) during the course of the field activities. Care must be taken to avoid injury while carrying equipment to the sampling locations.

Hand tools

Some of the field activities and sampling procedures may require the use of hand tools with sharp edges including machetes, scissors, clippers, knives, and razor blades. Care must be taken during their use to prevent injuries from cuts.

Weather related hazards

Weather-related hazards include the potential for heat or cold stress, electrical storms, treacherous weather-related working conditions, high winds, and limited visibility. These hazards correlate with the season in which site activities occur. Field sampling will not take place in the event of adverse weather conditions.

Heat stress

Heat stress is a significant potential hazard during the warmer months. Heat stress manifests itself as one of three conditions: heat cramps, heat exhaustion, or heat stroke. Heat cramps are brought about by a prolonged exposure to heat. As an individual sweats, water and salts are lost by the body, triggering painful muscle cramps. The signs and symptoms of heat cramps include:

- Severe muscle cramps, usually in the legs and abdomen;
- Exhaustion, often to the point of collapse; and
- Dizziness or periods of faintness.

First aid treatment includes shade, rest, and fluid replacement. If the individual has not recovered within ½ hour, then he/she will be transported to the hospital for medical attention.

Heat exhaustion usually occurs in a healthy individual who has been exposed to excessive heat while working or exercising. Blood collects near the skin in an effort to rid the body of excess heat. The signs and symptoms of heat exhaustion include:

- Rapid and shallow breathing;
- Weak pulse;
- Cold and clammy skin, with heavy perspiration;
- Skin appears pale;
- Fatigue, weakness, and/or dizziness; and

- Elevated body temperature.

First aid treatment includes cooling the victim, elevating the feet, and replacing fluids. If the individual has not recovered within ½ hour, he/she will be transported to the hospital for medical attention.

Heat stroke occurs when an individual is exposed to excessive heat, and their body systems become overwhelmed by heat and begin to stop functioning. This condition is a medical emergency, requiring the immediate cooling of the victim and transport to the hospital immediately. The signs and symptoms of heat stroke include:

- Victim has stopped sweating;
- Dry, hot, red skin;
- Body temperature approaching or above 105° F;
- Dilated (large) pupils; and
- Loss of consciousness; victim may lapse into a coma.

Local weather conditions may produce an environment which will require restricted work schedules in order to protect employees. The Field Team Leader will observe workers for any potential symptoms of heat stress. Adaptation of work schedules and training in recognition of heat stress conditions will help prevent heat-related illnesses from occurring.

Cold stress

Cold stress is a danger at low temperatures and when the wind chill factor is low. Cold stress is generally described as a local cooling (frost nip, frost bite, and freezing) or a general cooling (hypothermia). Personnel working outdoors in temperatures at or below freezing may be subject to local cooling. Areas of the body that have a high surface area-to-volume ratio, such as fingers, toes, and ears, are the most susceptible. The three categories of local cooling include:

- Frost nip - characterized by a blanching or whitening of the skin;
- Frost bite - skin has a waxy or white appearance and is firm to the touch, but the tissue beneath is resilient; and
- Freezing - skin tissue is cold, pale, and solid.

Frost nip and frost bite first aid includes covering the affected area with warmth and retreating to a warm area. Frozen tissue is a medical emergency, and the victim will be transported to the hospital immediately.

General cooling (hypothermia) occurs when exposure to cold reduces body temperature. With prolonged exposure, the body becomes unable to maintain its proper internal temperature. Without treatment, hypothermia will lead to stupor, collapse, and death. The signs and symptoms of mild hypothermia include:

- Shivering;
- Numbness; and
- Drowsiness.

First aid for mild hypothermia includes using heat to raise the individual's body temperature. Heat may be applied to the victim in the form of heat packs, hot water bottles, and blankets.

The signs and symptoms of severe hypothermia include:

- Unconsciousness;
- Slowed respiration or respiratory arrest;
- Slowed pulse or cardiac arrest;
- Irrational or stuporous state; and
- Muscular rigidity.

First aid for severe hypothermia includes handling the victim very gently; rough handling may set off an irregular heartbeat. Do not attempt to re-warm the severely hypothermic victim; re-warming may cause the development of an irregular heartbeat. Severe hypothermia is a medical emergency, and the victim will be transported to the hospital immediately.

Prevention of cold stress is a function of whole body protection. Adequate insulated clothing will be worn when the air temperature drops below 50 °F. Reduced work periods may be necessary in extreme conditions to allow adequate periods in a warm area.

Appendix C: Benthic Macroinvertebrate Field Sheet (Page 1)

Site Code: _____

Benthic Macroinvertebrate Sampling
Data Sheets

Watershed:	Date:	Start Time:
Stream Order:	Recorder:	Finish Time:
Investigators:	QC Site: Yes No	

Habitat Types: Field Duplicate Collected Yes / No (circle)

	Tally	# of Jabs:
Sand	_____	_____
Snags	_____	_____
Cobble	_____	_____
Vegetated Banks	_____	_____
Submerged Macrophytes	_____	_____

# of jabs = tally/total number of tallies x 20

***If habitat type is less than 5% of area, do not count it toward jabs**

Water Quality		
Temperature	___.___	°C
% Saturation	___.___	%
Dissolved Oxygen	___.___	mg/l
Conductivity	____	µS/cm
Specific Conductance	____	(µS/cm)/c°
pH	__.__	

Weather		
Today:	storm/heavy rain	showers (intermittent)
	rain (steady)	sunny
	partly cloudy	cloudy
Past 24 hrs	storm/heavy rain	showers (intermittent)
	rain (steady)	sunny
	partly cloudy	cloudy

Riparian Zone/ Instream Features

Predominant Surrounding Landuse

Forest	Commercial
Field/Pasture	Industrial
Agricultural	Golf Course
Residential	Other _____

Canopy Cover

Open Moderate Heavy

Channelized?

Yes No

Local Streambank and Channel Bottom Erosion

None Low Moderate Heavy

Riparian Zone Width (ft)

LB	**RB**
0-25	0-25
25-50	25-50
50-75	50-75
75-100	75-100
100+	100+

Possible impairments to benthics (i.e. golf course, industrial area)

Other Comments:

Appendix C: Benthic Macroinvertebrate Field Sheet (page 2)

Cobble (hard substrate) - Cobble will be prevalent in the riffles (and runs), which are a common feature throughout most mountain and piedmont streams. In many high-gradient streams, this habitat type will be dominant. However, riffles are not a common feature of most coastal or other low-gradient streams. Sample shallow areas with coarse (mixed gravel, cobble or larger) substrates by holding the bottom of the dip net against the substrate and dislodging organisms by kicking the substrate for 0.5 m upstream of the net.

Snags - Snags and other woody debris that have been submerged for a relatively long period (not recent deadfall) provide excellent colonization habitat. Sample submerged woody debris by jabbing in medium-sized snag material (sticks and branches). The snag habitat may be kicked first to help dislodge organisms, but only after placing the net downstream of the snag. Accumulated woody material in pool areas are considered snag habitat. Large logs should be avoided because they are generally difficult to sample adequately.

Vegetated banks - When lower banks are submerged and have roots and emergent plants associated with them, they are sampled in a fashion similar to snags. Submerged areas of undercut banks are good habitats to sample. Sample banks with protruding roots and plants by jabbing into the habitat. Bank habitat can be kicked first to help dislodge organisms, but only after placing the net downstream.

Submerged macrophytes - Submerged macrophytes are seasonal in their occurrence and may not be a common feature of many streams, particularly those that are high-gradient. Sample aquatic plants that are rooted on the bottom of the stream in deep water by drawing the net through the vegetation from the bottom to the surface of the water (maximum of 0.5 m each jab). In shallow water, sample by bumping or jabbing the net along the bottom in the rooted area, avoiding sediments where possible.

Sand (and other fine sediment) - Usually the least productive macroinvertebrate habitat in streams, this habitat may be the most prevalent in some streams. Sample banks of unvegetated or soft soil by bumping the net along the surface of the substrate rather than dragging the net through soft substrates; this reduces the amount of debris in the sample.

Appendix D: Habitat Assessment Form (Page 1)

US EPA RBP Habitat Assessment Reference Sheet for Piedmont/Triassic Areas (modified)

(front)

Habitat Parameter	Category			
	Optimal	**Suboptimal**	**Marginal**	**Poor**
1) Epifaunal Substrate/ Availible Cover	>70% of substrate favorable for epifaunal colonization & fish cover; mix of snags, submerged logs, undercut banks, cobble or other stable habitat and at stage to allow full colonization potential (I.e. logs/snags that are not new fall and not transient).	40-70% mix of stable habitat; well-suited for full colonization potential; adequate habitat for maintenance of populations; presence of additional substrate in the form of newfall, but not yet prepared for colonization (may rate at high end of scale).	20-40% mix of stable habitat; habitat availablity less than desirable; substrate frequently disturbed or removed.	<20% stable habitat; lack of habitat is obvious; substrate unstable/lacking
Score_____	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
2) Embedded-ness	Gravel, cobble & boulder particles in riffles and runs are 0-25% surrounded by fine sediment. Layering of cobble provides diversity of niche space.	Gravel, cobble & boulder in riffles and runs particles are 25-50% surrounded by fine sediment.	Gravel, cobble & boulder particles in riffles and runs are 50-75% surrounded by fine sediment.	Gravel, cobble & boulder particles in riffles and runs are >75% surrounded by fine sediment.
Score_____	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
3) Velocity/Depth Regime	All four velocity/depth regimes present (slow-deep, slow-shallow, fast-deep & fast-shallow, relative to stream size).	Only 3 of the 4 regimes present (if fast-shallow is missing, score lower than if missing other regimes.	Only 2 of the 4 regimes present (if fast-shallow or slow-shallow are missing, score lower).	Dominated by 1 velocity/ depth regime (usually slow-deep).
Score_____	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
4) Sediment Deposition	<5% of the bottom affected by sediment deposition, little or no enlargement of islands or point bars.	5-30% of the bottom affected; slight deposition in pools; may be some new increase in bar formation, mostly from gravel, sand or fine sediment;	30-50% of the bottom affected; sediment deposits at obstructions, constrictions & bends; moderate deposition of pools prevalent; may be moderate deposition of new gravel, sand or fine sediment on old & new bars.	>50% of the bottom affected; heavy deposits of fine material, increased bar development; score lower if pools absent due to substantial sedimentation.
Score_____	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
5) Channel Flow Status	Water reaches base of both lower banks and fills >75% of channel, minimal amount of channel substrate is exposed.	Water fills 75-50% of the available channel; or <50% of channel substrate is exposed	Water fills 50-25% of the available channel, and/or riffle substrates are mostly exposed.	Very little water in channel and mostly present as standing pools, water fills <25% of channel.
Score_____	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0

Appendix D: Habitat Assessment Form (Page 2)

US EPA RBP Habitat Assessment Reference Sheet for Piedmont/Triassic Areas (modified)

(back)

6) Channel Alteration	Channelization or dredging absent or minimal, <10% of reach disrupted; no obvious shoring structures; may have recovered from past channelization; stream with normal pattern.	Some channelization present, 10-40% of reach channelized or disrupted; may be recovering from past channelization, stream is developing a normal pattern.	Channelization extensive; shoring sturctures present on both banks; 40-80% of stream reach channelized & disrupted; stream does not have a normal pattern.	Banks shored with gabion or cement; >80% of the stream reach channelized & disrupted, stream is a straight channel. Instream habitat greatly altered or removed entirely.
Score_____	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
7) Frequency of riffles (or bends)	Occurrence of riffles relatively frequent; ratio of distance between riffles divided by stream width is <7:1 (generally 5 to 7); variety of habitat is key. In streams where riffles are continuous, placement of boulders or other large, natural obstruction is important.	Occurrence of riffles infrequent; distances between riffles divided by stream width is between 7 to 15.	Occasional riffle or bend; bottom contours provide some habitat; distance between riffles divided by stream width is between 15 to 25.	Generally all flat water or shallow riffles; poor habitat; distance between riffles divided stream width is a ratio of >25.
Score_____	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
8) Bank Stablity	Banks stable; evidence of erosion or bank failure absent/minimal; little potential for future problems. <5% of bank affected.	Moderately stable; infrequent, small areas of erosion mostly healed over. 5-30% of bank in reach has areas of erosion.	Moderately unstable; 30-60% of bank in reach has areas of erosion; high erosion potential during floods.	Unstable; many eroded areas; "raw" areas frequent along straight sections and bends; obvious bank slouging; 60-100% of bank has erosional scars.
Score (RB)_____	Right bank 10 9	8 7 6	5 4 3	2 1 0
Score (LB)_____	Left bank 10 9	8 7 6	5 4 3	2 1 0
9) Bank Vegetative Protection	>90% of the streambank surfaces covered by native vegetation, including trees, understory shrubs, or nonwoody macrophytes; vegetative disruption through grazing or mowing minimal or not evident; almost all plants allowed to grow naturally.	70-90% of the streambank surfaces covered by native vegetation, but one class of plants is not well-represented; disruption evident but not affecting full plant growth potential to any great extent; more than one-half of the potential plant stubble height remaining.	50-70% of the streambank surfaces covered by vegetation; disruption obvious; patches of bare soil or closely cropped vegetation common; less than one-half of the potential plant stubble height remaining.	<50% of the streambank surfaces covered by vegetation; disruption of streambank vegetation Is very high; vegetation has been removed to 5 centimeters or less in average stubble height
Score (RB)_____	Right bank 10 9	8 7 6	5 4 3	2 1 0
Score (LB)_____	Left bank 10 9	8 7 6	5 4 3	2 1 0
10) Riparian Vegetative Zone Width	Width of riparian zone >40 meters; human activities (parking lots, roadbeds, clear-cuts, lawns or crops) have not impacted zone.	Width of riparian zone 40-20 meters; human activities have impacted zone only minimally.	Width of riparian zone 20-10 meters; human activities have impacted zone a great deal.	Width of riparian zone <10 meters; little or no riparian vegetation due to human activities
Score (RB)_____	Right bank 10 9	8 7 6	5 4 3	2 1 0
Score (LB)_____	Left bank 10 9	8 7 6	5 4 3	2 1 0

Appendix E: Benthic Sample Log-In Sheet

Benthic Macroinvertebrate Sample Log-in Sheet						
	Site ID	**Watershed**	**Date collected**	**Date delivered to lab**	**Initials**	**# of containers**
1						
2						
3						
4						
5						
6						
7						
8						
9						
#						
#						
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Appendix F: Benthic Chain of Custody Form

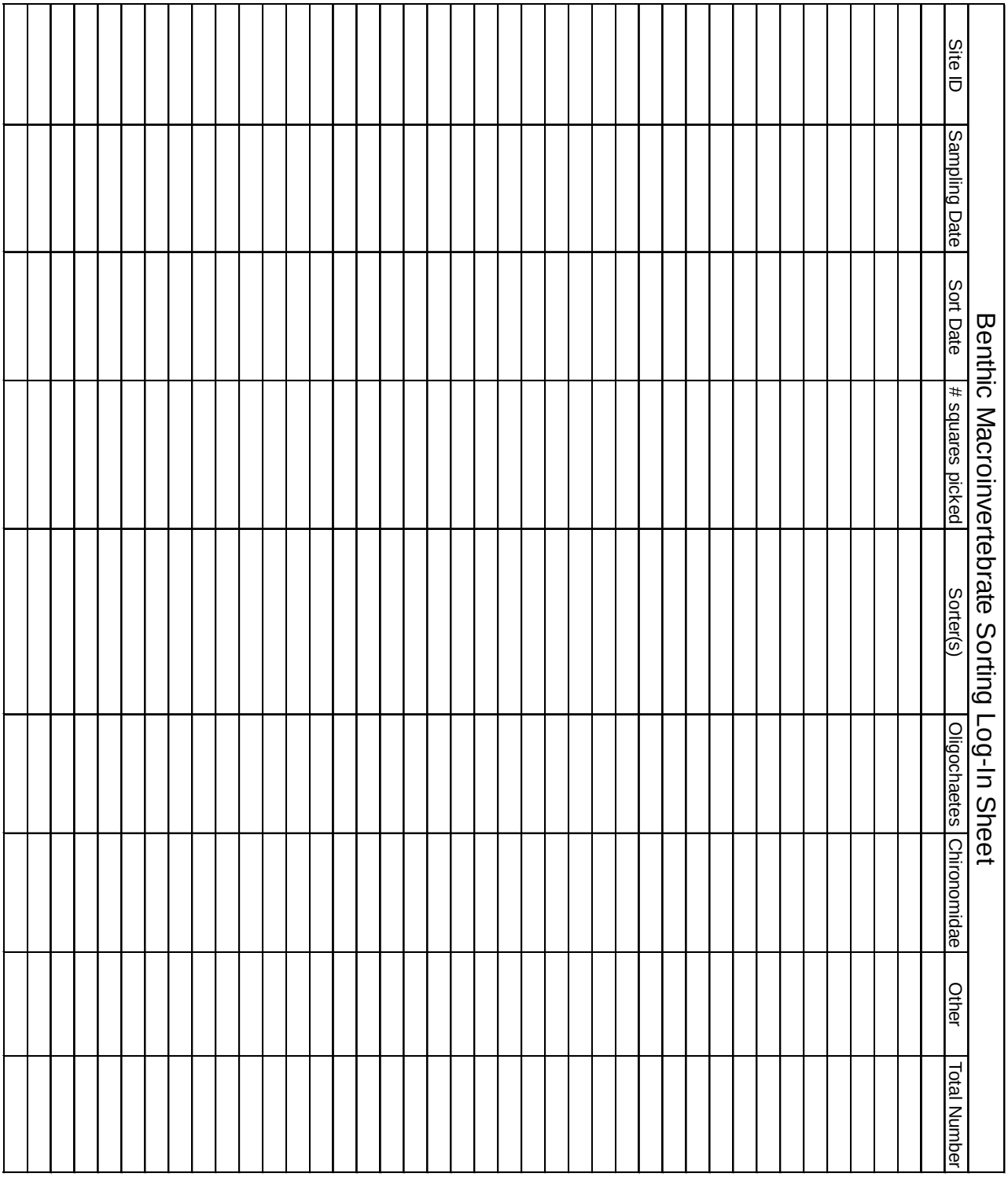
BENTHIC MS4 SAMPLE CHAIN OF CUSTODY FORM

Name: Fairfax County DPWES/SWPD **Address: 12000 Government Center Parkway Suite 449** **Fairfax, VA 22035** **Phone Number: 703-324-5500**	**Delivered to: DPWES Water Quality Lab** **6800 Industrial Rd, Springfield, VA 22151** **Lab Phone #:** **Lab Contact:** **Lab Email:**

Date Sampled	Time Sampled AM/PM	Site ID	Sample Location Stream Name	Sample Type
_ _/_ _/_ _ _ _	_ _ _ _			Benthic

Collected/Relinquished by:			
Print Name	**Signature**	**Date/Time Collected**	**Date/Time Relinquished**
Relinquished to:			
Print Name	**Signature**	**Date Relinquished**	**Time Relinquished**
Delivered to Laboratory by:			
Print Name	**Signature**	**Date Delivered**	**Time Delivered**

Appendix G: Benthic Sorting Log-In Sheet



Appendix H: Benthic Macroinvertebrate Identification Form (Page 1)

SITE ID: _____

Benthic Macroinvertebrate Identification Sheet

Taxonomist:		**Identification Start Date:**			
		Identification Finish Date:			
Watershed:					
		Collection Date:			
QC Sample? Y N	**QC Site? Y N**	**Sorting Date(s):**			
Organisms			**#**	**Tally**	**Exc?**
Order	**Family**	**Genus**			
Oligochaeta					
Chironomidae					
Hirudinea					
Isopoda					
Amphipoda					
Decapoda					
Ephemeroptera					
Plecoptera					
Trichoptera					
		Subtotal:			

Appendix H: Benthic Macroinvertebrate Identification Form (Page 2)

SITE ID: _____

Benthic Macroinvertebrate Identification Sheet

Organisms			#	Tally	Exc?
Order	Family	Genus			
Odonata					
Hemiptera					
Lepidoptera					
Megaloptera					
Coleoptera					
Diptera					
Gastropoda					
Bivalves					
Acariformes					
Other					
		Subtotal:			
		Total from front:			
		Grand Total:			

Fairfax County 2021 MS4 Program Plan and Annual Report

Appendix P14

Standard Operating Procedures for the MS4 In-Stream Monitoring Program

VSMP Permit Number VA0088587
9-30-2021

Department of Public Works and Environmental Services
POLICIES AND PROCEDURES Memorandum No.: SWPD16-06

SUBJECT: Standard Operating Procedures for the MS4 In-Stream Monitoring Program

Effective: 07/01/2016 Revised: Approval: _____

I. Purpose

Fairfax County's (renewed) 2015 Virginia Stormwater Management Program (VSMP) Municipal Separate Storm Sewer System (MS4) permit includes provisions to evaluate the condition of select streams within the county by conducting in-stream monitoring. The applicable requirement of the permit (Part I, Section C.2) states:

The permittee shall continue to implement an in-stream monitoring program to evaluate the condition of select streams within Fairfax County as follows:

- *Five (5) stream sites within Fairfax County shall be selected for monitoring during the term of this permit.*
- *Monitoring shall be conducted once per two months between January 1st and December 31st at each monitoring location.*
- *Monitoring shall be performed for the following parameters:*
  - *pH*
  - *Dissolved Oxygen*
  - *Temperature*
  - *Total Suspended Solids*
  - *Ammonia as Nitrogen*
  - *Nitrate plus Nitrite Nitrogen*
  - *Total Kjeldahl Nitrogen*
  - *Total Nitrogen (calculated)*
  - *Dissolved Phosphorus*
  - *Total Phosphorus*
  - *Escherichia coli*
- *Monitoring for the parameters listed in Part I.C.2.c) shall be in accordance with Part II.A of this state permit.*
- *The permittee may replace a sampling location with a new proposed location after 15 samples are collected and analyzed. Written notification of the monitoring plan revisions shall be given to the Department in writing and shall include a statistical analysis of the monitoring results, conclusions regarding the data, the proposed new monitoring location, and the reasoning for site location choice.*

SPECIFIC REPORTING REQUIREMENTS:

- *The annual report due October 1, 2016 shall include the list of sites to be monitored during the term of the state permit and monitoring protocols.*

- *Beginning with the annual report due October 1, 2017, each annual report shall include a summary of the monitoring results and analyses and an interpretation of that data with respect to long-term patterns/trends.*

This In-Stream Monitoring Program Standard Operating Procedure (SOP) describes Fairfax County's site selection and sampling protocols for executing this program and provides a framework for compliance with the above MS4 permit requirements.

This document contains the following: -

- Site Selection Protocol -
- Field Protocol for In-Stream Monitoring -
- Documentation/Reporting Procedures -
- Appendices -

II. Site Selection for MS4 In-Stream Monitoring Program

Since 2007, Fairfax County has been conducting an in-stream monitoring program in partnership with the United States Geological Survey (USGS). This program was designed by USGS and Fairfax County Stormwater Planning staff to accomplish the following objectives:

- Generate long-term monitoring data to describe:
    - Current water-quality (sediment and nutrients) and quantity conditions,
    - Trends in water-quality and quantity,
    - Nutrient and sediment loads and yields.
- Evaluate relationships between observed conditions/trends and best management practice (BMP) implementation throughout Fairfax County.
- Transfer the understanding gained from intensively monitored watersheds to less-intensively monitored ones.

In order to utilize an existing network to support the MS4 Permit requirements, Fairfax County will supplement this study with all required parameters and adhere to the monitoring frequency as stated in the MS4 Permit. The dataset already collected will provide significant value in satisfying the permit in regard to data interpretation with respect to long-term patterns and trends. If this long-term study with USGS would cease due to some unforeseen reason, the sites chosen for MS4 monitoring would continue to be monitored by Fairfax County to ensure consistency.

A. Site Selection Protocol

For the MS4 Permit, Fairfax County has chosen the five most intensely monitored sites within the existing partnership study with USGS. The site selection was based on available watershed characterization data, the presence of a (Board of Supervisors-adopted) watershed management plan, the timetable for BMP implementation, and local knowledge of the watersheds. In general, an effort was made to limit the size of basins to 6 mi^2 or smaller to ensure that changes in the basins were detectable. Watershed characterization data from the Fairfax County watershed management plans along with other available datasets were used to classify and evaluate all potential monitoring basins. Ultimately, the primary factors used in the analysis and site selection process were:

- Land Use (10 land use types)
- Presence of water quality and/or quantity controls (and % area served by controls within each basin) -
- Existing Index of Biotic Integrity (IBI) scores -
- Percent impervious cover in each basin -
- Average basin slope -

- Planned stormwater BMP implementation

The goal is to ensure that the monitoring network effectively characterizes the range of watershed conditions within Fairfax County. In order to accomplish this, a cluster analysis was performed (using SPLUS) to group the basins into similar types and to select representative sampling sites from the resultant clusters. Hierarchical clustering was performed, and the complete linkage approach was used for joining clusters because little was known about the variance and sample size for each cluster. Land use was shown to be the most influential factor in the cluster analysis. Table 1 displays the name and watershed characterization for each selected site.

Table 1: Site Name and Characterization for Fairfax County In-Stream Monitoring Program.

Site Name	Watershed	Drainage Area ($mi^{2)}$	% Impervious
Dead Run	Dead Run	2.09	30.97
Difficult Run	Difficult Run	5.47	27.61
Flatlick Branch	Cub Run	4.26	28.60
Long Branch	Accotink	3.79	25.66
South Fork Little Difficult Run	Difficult Run	2.71	14.02

A map of the five in-stream monitoring sites, along with site-specific maps of each location, can be found in Appendix A.

III. Field Protocol for MS4 In-Stream Monitoring Program

This section provides details of the protocols to be followed during in-stream monitoring events and includes descriptions of safety procedures, sampling frequency, proper sampling equipment, and sampling protocols.

A. Health and Safety

Ensuring the health and safety of field personnel is the responsibility of every member of the staff for the project. The collective effort of all staff members in providing a healthy and safe work environment helps to minimize or eliminate the potential for accidents. In general, the following safety protocol is followed to protect the field staff:

- Perform field work in teams of at least two. -
- Bring mobile phone and first aid kit on all field site visits. -
- Exercise caution when encountering any wildlife and hazardous plants.
- Take proper precautions (e.g. seek shelter,) during electrical storms and/or when severe conditions (e.g., high wind, hail) develop. The safety of field staff overrides all other considerations.

Additional information on Health and Safety may be found in Appendix B, including information on field staff conduct, personal protective equipment, confined space entry, dangerous flora and fauna, unknown hazardous substances and wastes, bloodborne pathogens, remote areas, hand tool safety, weather-related hazards, and heat and cold stress.

B. Sampling Frequency

As specified by the permit, monitoring shall be conducted once per two months between January 1st and December 31st at each monitoring location. In order to characterize the full range of possible water quality conditions, this sampling shall be a scheduled event to be conducted in dry or wet conditions, unless otherwise noted due to severe weather. It is imperative that County staff head out into the field as early as possible in order to deliver samples to lab in within the established holding times (See Table 2).

C. Field Work Preparation

1. Equipment Checklist

Before heading out into the field, staff should assemble the following equipment:

- Field Form
- Chain of Custody
- Weatherproof Labels for Bottles
- Coolers and ice for samples
- Sharpies/Pens
- Thermometer
- Multi-Parameter Water Quality Sonde
- Nitrile Gloves
- Paper Towels
- Clipboard

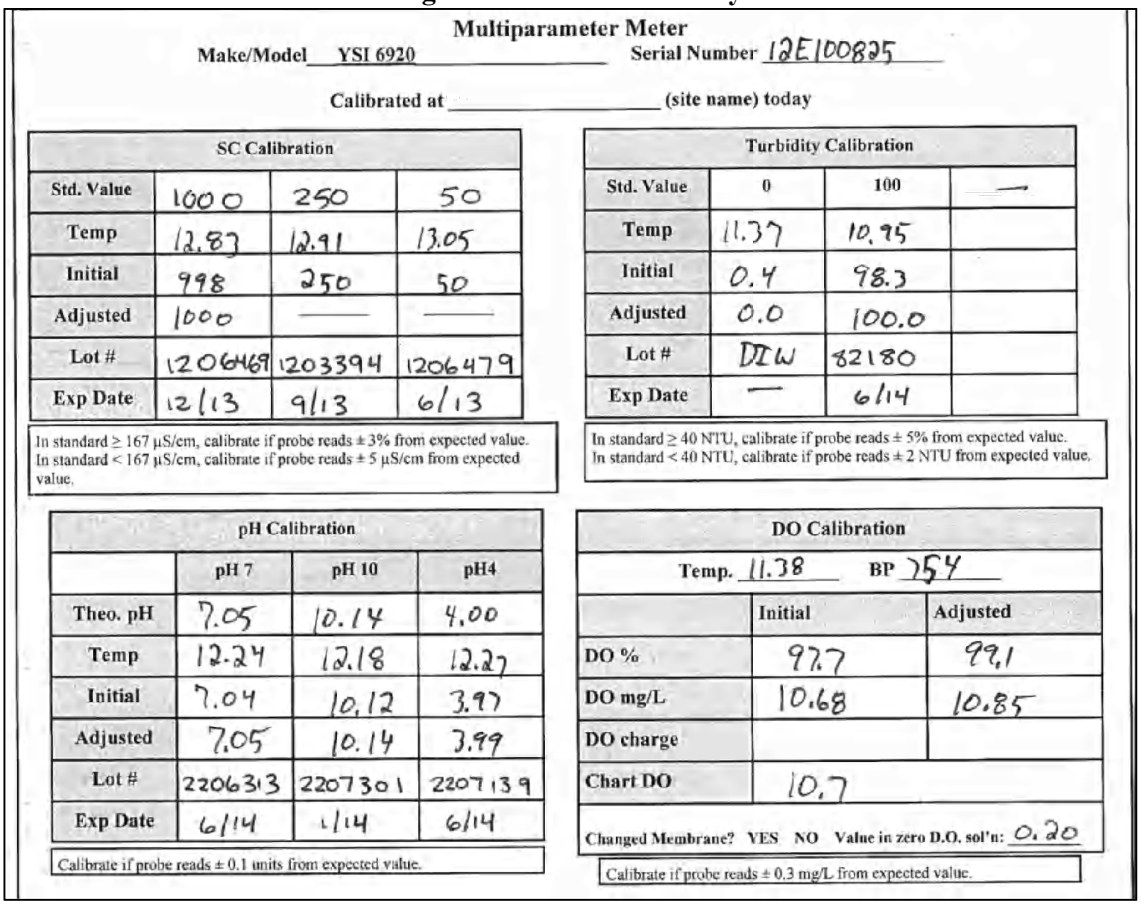
2. Water Quality Sonde Calibration

Calibration of the water quality sonde must be completed prior to sample collection. Calibration procedures can be found in Appendix C and provide a step-by-step guide to ensure accuracy of the sonde. A few steps to follow prior to calibration:

- All buffers and standards should be at a similar temperature as the stream in order to ensure accurate calibrations. For winter months, this requires staff to either keep them on ice or place them in the refrigerator the night before.
- Check to make sure that the sonde has a charged battery - for backup, bring 4 'C' batteries in the field.

The sonde can be calibrated either in the office or from the back of the vehicle prior to leaving for the sampling run. Calibration readings should be entered on the back of the field form (Figure 1) for the first site – the site name should then be referenced on each subsequent field form instead of re-entering the calibration values. Values for all field form sections within this SOP are included for illustrative purposes as not all fields are used for this monitoring program. Blank field forms are generated for each new sampling run as the routes are randomized in consultation with USGS.

Figure 1: Calibration Entry



Multiparameter Meter

Make/Model YSI 6920 Serial Number 12E100825

Calibrated at _____ (site name) today

SC Calibration			
Std. Value	1000	250	50
Temp	12.87	12.91	13.05
Initial	998	250	50
Adjusted	1000	—	—
Lot #	1206469	1203394	1206479
Exp Date	12/13	9/13	6/13

In standard ≥ 167 µS/cm, calibrate if probe reads ± 3% from expected value.
In standard < 167 µS/cm, calibrate if probe reads ± 5 µS/cm from expected value.

Turbidity Calibration			
Std. Value	0	100	—
Temp	11.37	10.95	
Initial	0.4	98.3	
Adjusted	0.0	100.0	
Lot #	DIW	82180	
Exp Date	—	6/14	

In standard ≥ 40 NTU, calibrate if probe reads ± 5% from expected value.
In standard < 40 NTU, calibrate if probe reads ± 2 NTU from expected value.

pH Calibration			
	pH 7	pH 10	pH4
Theo. pH	7.05	10.14	4.00
Temp	12.24	12.18	12.27
Initial	7.04	10.12	3.97
Adjusted	7.05	10.14	3.99
Lot #	2206313	2207301	2207139
Exp Date	6/14	1/14	6/14

Calibrate if probe reads ± 0.1 units from expected value.

DO Calibration		
Temp. 11.38	BP 754	
	Initial	Adjusted
DO %	97.7	99.1
DO mg/L	10.68	10.85
DO charge		
Chart DO	10.7	

Changed Membrane? YES NO Value in zero D.O. sol'n: 0.20

Calibrate if probe reads ± 0.3 mg/L from expected value.

D. Sample Collection

This section will describe the steps to be completed and the areas of the form to be filled out. Please see Appendix D for a copy of the field form.

1. Field Measurements

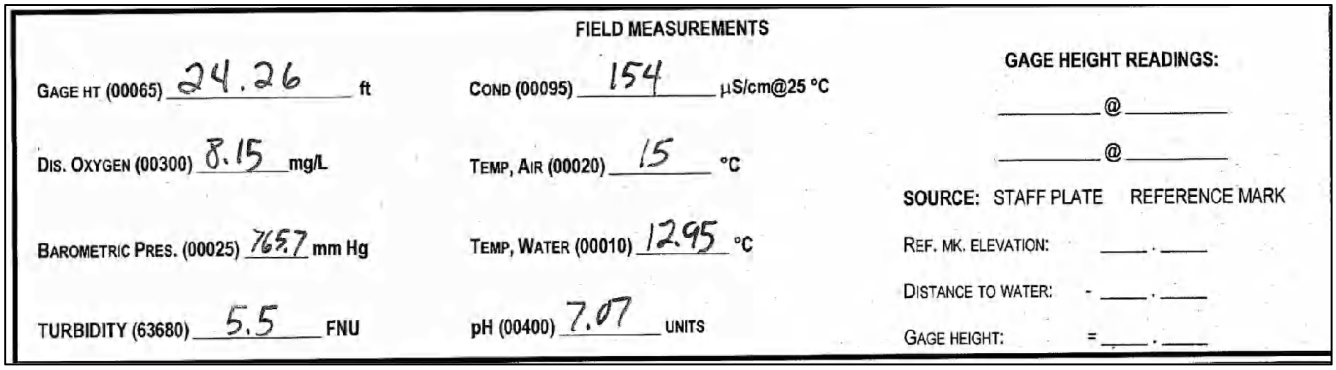
Some basic tips for using the water quality sonde in field monitoring:

- The unit should be on for about 10 minutes before readings are taken.
- Place the sonde guard on the unit to protect the probes during readings.
- Ensure the probes are fully immersed in flowing water upstream of any other collection activity.

- Allow the readings to stabilize before taking a reading, especially in winter months.
- Always write out measurements to the full precision of the instrument.

Figure 2 shows how to fill out the field measurements on the form. Gage height readings (as seen on form) are not necessary for the collection of these measurements.

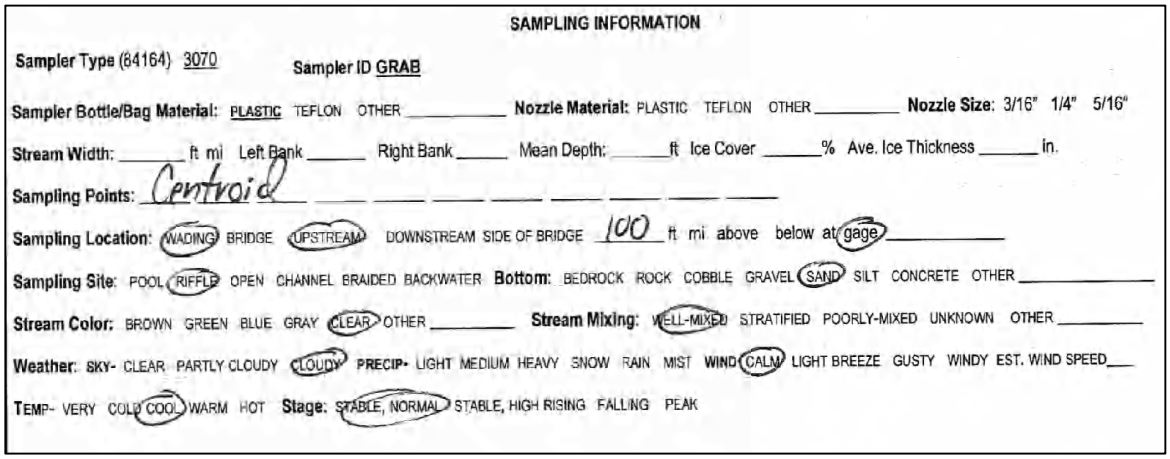
Figure 2: Field Measurements



2. Sampling Information

Located just below the field measurements is a section to describe the environment being sampled. Ideally, all samples should be taken in the center of the stream along a riffle or other flowing water. This information, along with water and weather conditions should be transcribed in the sampling information section. Figure 3 is an example of how to fill out this section.

Figure 3: Sampling Information



3. Grab Samples

Three grab samples are to be collected at each site. All grab sample labels should include the following information:

- Sample Date
- Sample Time
- Sample Location
- Sample Collector

All samples should be taken in a reach with well mixed, flowing water. Be sure that grab samples are taken downstream of water quality measurements to ensure accuracy. Be aware of any disturbed sediments from sonde placement and avoid collection of this water. For nutrient samples, rinse bottle with sample water three times before filling. Sediment and E. coli bottles should not be rinsed prior to collection.

The nutrient, bacteria and sediment samples should be given the same time. ***Always round the sample time to the nearest 15 minute increment - XX:00, XX:15, XX:30, XX:45.*** For a regular field sample, staff must fill out both the time and the sample type on the field form. For a regular sample, the sample type is **'9'.** As noted on the field form, if a replicate sample is collected, staff must label both the regular and replicate '**7**'. The sample times should be noted 15 minutes apart, even if they are taken concurrently. Figures 4 and illustrates both examples below.

Figure 4: Regular Sample Time and Type

Time: Label Fairfax replicates 15 minutes past regular samples and blanks 5 minutes before regular samples. **Sample Type**: A regular sample is Sample Type 9. If a replicate is collected, label both regular and replicate 7. If a blank is collected, label the blank Sample Type 2 and the regular sample Sample Type 9.

Sample Type	Time	Medium	Sample Type	Dupl. Type 99105	
Regular	1000	WS	9		
Replicate		WSQ	7	30 (split)	

Figure 5: Replicate Sample Time and Type

Time: Label Fairfax replicates 15 minutes past regular samples and blanks 5 minutes before regular samples. **Sample Type**: A regular sample is Sample Type 9. If a replicate is collected, label both regular and replicate 7. If a blank is collected, label the blank Sample Type 2 and the regular sample Sample Type 9.

Sample Type	Time	Medium	Sample Type	Dupl. Type 99105	
Regular	1215	WS	7		
Replicate	1230	WSQ	7	30 (split)	

All nutrient and bacteria samples should be stored in a cooler with wet ice. Sediment bottles can be stored without ice. As an additional precaution, be sure that

the bottles remain upright in the cooler, as it is possible that the lids are not completely sealed.

4. Sample Drop-off

Once all sites in the sampling route have been completed, staff will immediately transport samples to the Fairfax County Environmental Monitoring Laboratory at the Noman M. Cole, Jr., Pollution Control Plant. This lab is certified under the Virginia Environmental Laboratory Accreditation Program (VELAP). The samples will then be processed according to the analyte suite listed in Table 2 within the applicable holding times.

5. Analytes

Per the permit requirements, parameters to be tested are sediment, bacteria and a suite of nutrients. These parameters will provide information about suspended material transport, the presence of pathogenic material, and deposition and mobilization of nutrients commonly used in detergents and fertilizers. The analyte suite is shown below in Table 2.

Table 2: Field and Laboratory Analytes with Method Detection and Reporting Limits for Fairfax County In-Stream Monitoring Program.

Parameter	Method Detection Limit	Reporting Limits	Method	Holding Time
pH	NA	NA	Field Measurement	Analyze at collection
Dissolved Oxygen	NA	NA	Field Measurement	Analyze at collection
Temperature	NA	NA	Field Measurement	Analyze at collection
Total Suspended Solids	0.1 mg/L	1.0 mg/L	SM 22nd Ed 2540 D	7 Days
Ammonia as Nitrogen	0.047 mg/L	0.1 mg/L	EPA 350.1	28 Days
Nitrate plus Nitrite Nitrogen	0.026 mg/L	0.1 mg/L	EPA 353.2	28 Days
Total Kjeldahl Nitrogen	0.056 mg/L	0.2 mg/L	EPA 351.2	28 Days
Total Nitrogen	NA	NA	Calculated	NA
Dissolved Phosphorus	0.0080 mg/L	0.03 mg/L	SM 22nd Ed. 4500 P-E	28 Days
Total Phosphorus	0.0080 mg/L	0.03 mg/L	SM 22nd Ed. 4500 P-E	28 Days
Escherichia coli	<1 MPN/100 mL	1 MPN/100 mL	Colilert MPN	8 Hours

IV. Documentation/Reporting Procedures

A. Documentation of Field Monitoring

For sample events, a dedicated field form (Appendix D) is used to document the following information:

- Site Name

- Sample Date -
- Sample Time -
- Field crew -
- Stream Condition -
- Field Measurements -

B. Chain of Custody

Chain of custody (COC) forms, used for all samples, are a permanent record of transfer of sample custody. Custom COC forms for this project are preprinted with the site names and sample date. Field staff need only to complete the sample time during collection and indicate laboratory delivery date and time during drop-off of samples. Chain of custody should also be signed by receiving laboratory once samples are delivered. Field staff should make a copy of signed chain of custody and retain for their records.

V. In-Stream Monitoring Reports

For the In-Stream Monitoring Program, Fairfax County will produce an annual report that shall include a summary of the monitoring results and analyses for the five selected sites. Along with this information, an interpretation of the data with respect to long-term patterns and trends will be initiated and built upon with each additional year of data.

A. Monitoring Yearly Report

At the end of each MS4 reporting year (July 1 – June 30), a report on in-stream monitoring is prepared for use in the development of the County's annual MS4 report to VA DEQ. The yearly report includes the following:

- The list of locations where in-stream monitoring was conducted
- Sample date for each collection
- A compilation of analytical results for each site

Year 2 through Year 5 reports will include comparisons to prior years monitoring efforts and results. The Year 5 report will also include an overall summary of the five years of monitoring with respect to any developing patterns or trends discerned in the data.

VI. Administrator of the SOP

This SOP document is administered by the Stream Monitoring Section within the Stormwater Planning Division. For more information about this document, please call the Stormwater Planning Division at (703) 324-5500.

VII. Appendices

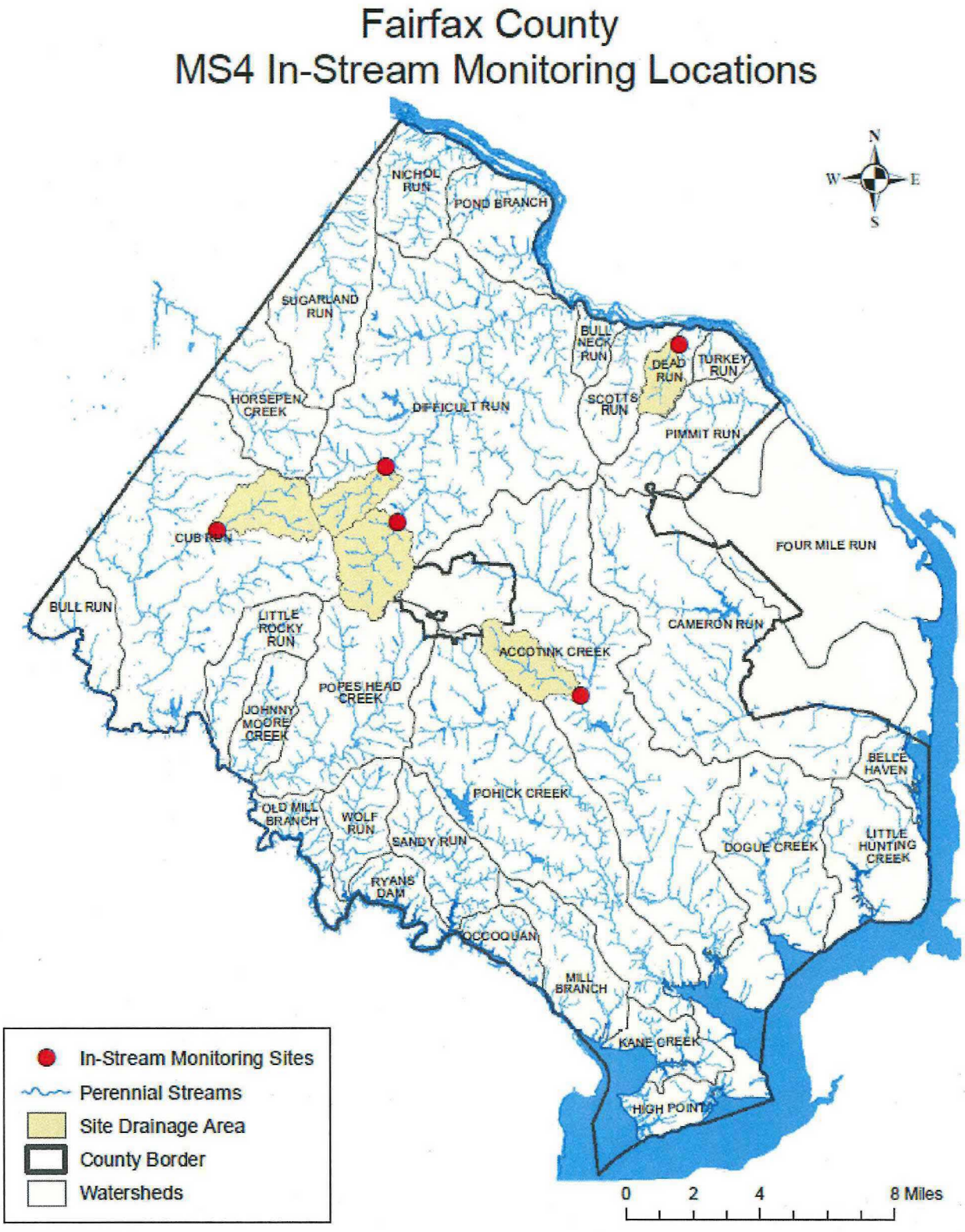
A. Fairfax County MS4 In-Stream Monitoring Locations

B. Health and Safety Guidance for In-Stream Monitoring Field Work

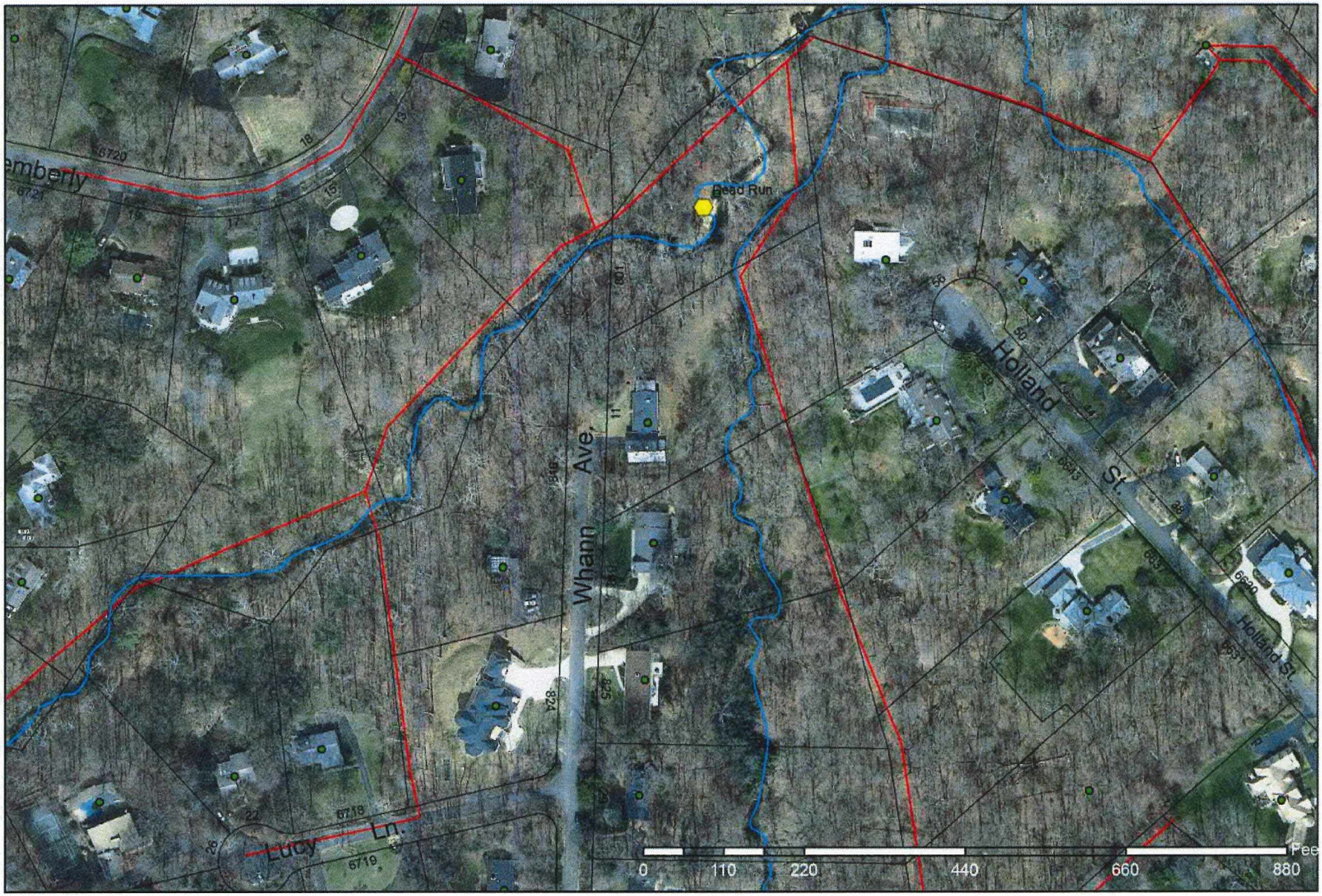
C. Calibration Procedures for Water Quality Field Instruments

D. In-Stream Monitoring Field Form

Appendix A: Fairfax County MS4 In-Stream Monitoring Locations



Dead Run USGS Sites
Tax Map 21-2

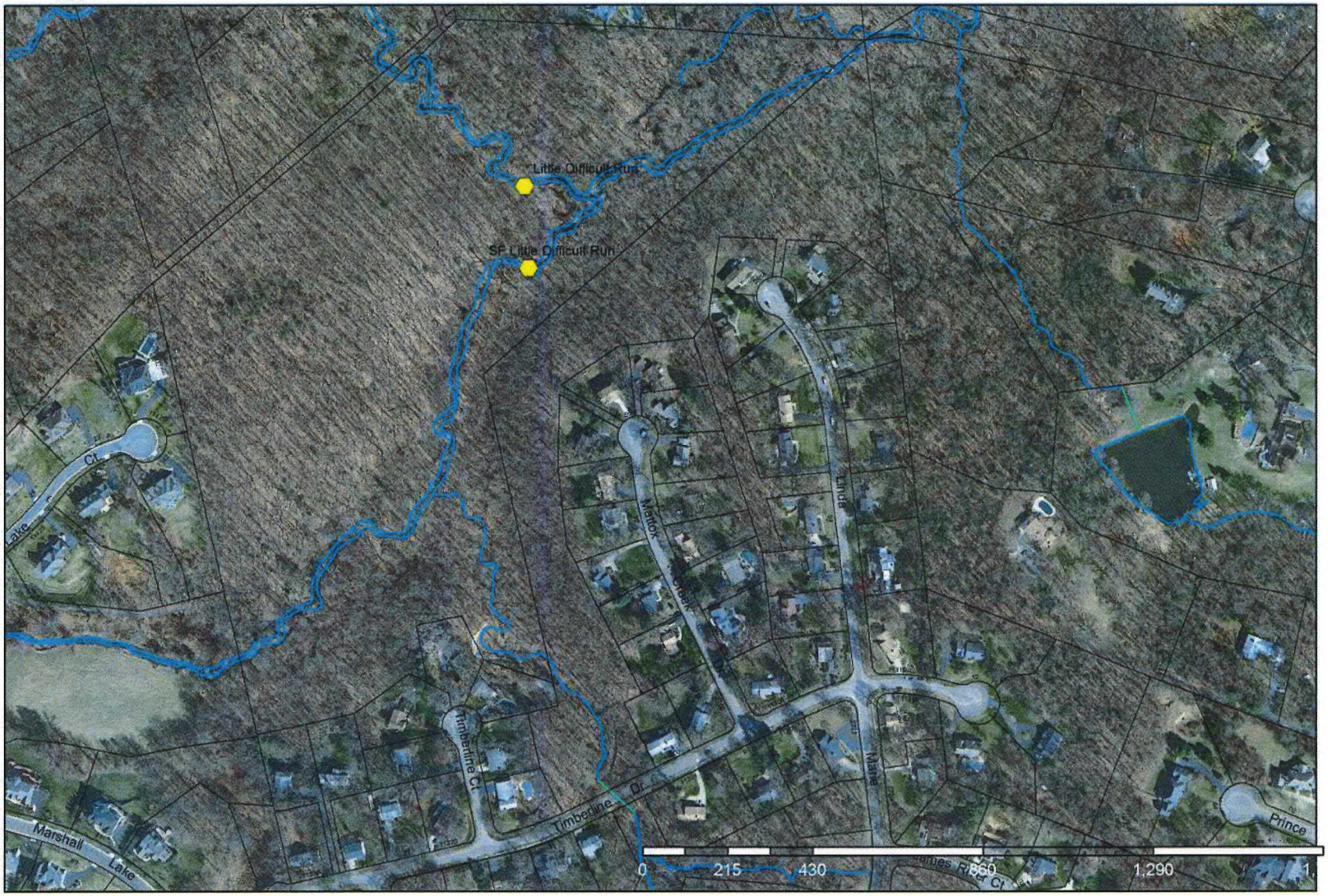


Difficult Run USGS Sites
Tax Map 47-1

Flatlick and Frog Branches (Cub Run) USGS Sites
Tax Map 44-2

Long Branch (Accotink Creek) USGS Site
Tax Map 70-3

N. & S. Fork Little Difficult Run USGS Sites
Tax Map 36-2



Appendix B: Health and Safety Guidance for In-Stream Monitoring Field Work

General

Health and safety responsibility and accountability involves every employee. The collective effort of all employees in providing a healthy and safe work environment will minimize or eliminate the potential for accidents. In general, field sampling will require the following safety protocol to protect the field staff:

1. - Perform field work in teams of at least two.
2. - Bring cell phone and first aid kit on all field site visits.
3. - Exercise caution when encountering any wildlife and hazardous plants. In addition, many outfalls are located in remote areas that may be near gathering places for homeless or transient individuals. Do not enter a potentially hostile area.
4. - Take proper precautions (e.g. seek shelter) during electrical storms and/or when severe conditions (e.g., high wind, hail) develop. The safety of field staff overrides all other considerations.
5. - Storm sewers contain a variety of water-borne bacteria and other harmful chemicals. Wash hands or use anti-bacterial wipes or hand gels liberally, especially prior to lunch breaks, etc.

Conduct

All field staff are expected to:

- Understand and comply with health and safety policies. Each employee is not only responsible and accountable for his/her own actions, but for those others around him/her.
- All employees shall show professional courtesy to fellow employees, clients, subcontractors, regulators, and visitors.
- Understand and follow good health and safety practices.
- Horseplay, practical joking, inattention to work or other inappropriate accident- causing behavior will not be tolerated.
- Smoking, eating, drinking and chewing shall be conducted only in designated areas.
- Use of alcohol or controlled substances is prohibited.
- While traveling to and from the job site, employees shall: obey all federal, state and local regulations regarding seat belt use, all traffic laws, and any other laws regarding proper conduct in public areas.

Personal protective equipment (PPE)

Engineering and administrative controls will be used as the primary means of exposure control, as required by OSHA standards. However, PPE may also be necessary to further minimize potential employee exposure. All employees shall dress appropriately for the tasks to be performed. Specialized health and safety equipment, including personal protective equipment, monitoring equipment, and other devices designed to protect the employee shall be issued to the employee on an as-needed basis.

Employees performing field activities and certain laboratory functions have the potential of coming in contact with hazardous materials. Many of these hazardous materials can cause significant injury or illness through acute or chronic exposures. For field work (including industrial operations), all field employees are required to wear the following basic PPE:

- Appropriate work clothing
- ANSI-approved steel-toed, steel-shank boots
- ANSI-approved safety glasses
- ANSI-approved hard hat (when overhead hazards exist)
- Hearing Protection (when appropriate)
- Rain Gear (when appropriate)

Confined space entry program

A confined space is any location not intended for human occupation, has limited or no ventilation, has the potential for containing dangerous or lethal atmospheres, and has limited ingress/egress. OSHA has addressed confined space entry requirements and procedures in 29 CFR 1910.146 (Permit Required Confined Spaces) and 1926.651 (Excavations). Confined space entry, if necessary, will be performed in accordance with OSHA confined space entry procedures, industry-standard practices, and will be performed by confined space trained personnel.

The Team Leader will provide ongoing, real time ambient air monitoring of the locations to be sampled to determine the need for personal protection. Entry of the sampling personnel will be allowed if the following criteria are met:

- Oxygen level greater than 19.5%. Atmospheres with oxygen concentrations less than 19.5% are considered oxygen deficient and must be treated as Immediately Dangerous to Life and Health (IDLH) atmospheres.
- Lower explosive limit (LEL) reading is less than 3%

Dangerous flora and fauna

During the course of field activities, employees may come in contact with a wide range of dangerous or toxic animals and plants. Dangerous animals may include: black widow and brown recluse spiders; fire ants; mosquitoes and biting flies; bees, wasps and hornets; ticks and chiggers; microbial organisms (e.g., found in water, soil, and air and on carrier/host organisms); rabid mammals; and poisonous snakes. Dangerous plants may include: thorny plants; poison ivy, oak, and sumac; and molds, mildews, and fungi (which may cause allergic reactions). Contact with these organisms can cause effects from simple discomfort (such as from thorny bush scratches) to severe allergic reactions and possibly death. If interactions do occur, take appropriate actions related to specific interaction and individual response to interaction.

Unknown hazardous substances and wastes

The nature of environmental consulting often times requires the investigation of hazardous substances or wastes whose identity is not known. Because of the serious personal and environmental consequences of unintentional release of chemicals, very specific health and safety procedures must be implemented to monitor ambient conditions, mitigate releases to the environment, and protect workers from exposure. Most of these procedures dovetail with site investigation, sampling, and remediation techniques outlined by EPA policy and should be included in the project comprehensive work plan.

Bloodborne pathogens

Exposure to bloodborne pathogens (BBP) is possible in the case of certain emergency situations. Personnel may be exposed to body fluids such as blood, saliva, vomit, mucus or others. These fluids could contain pathogens that have the potential for causing disease in humans. Should personnel be required to administer lifesaving procedures, such as CPR, the following procedures will be followed to minimize the potential for exposure:

1. - Wear disposable gloves when hand contact with blood, mucus membranes, non-intact skin or other potentially infectious materials could be involved;
2. - Use disposable mouthpieces, pocket masks or other ventilation devices for administering artificial ventilation;
3. - Wash hands with soap and water after administering first aid;
4. - In the case of eye contact, flush eyes using an eye wash for at least 15 minutes;
5. - Remove garments contacted by blood or other body fluids as soon as possible;
6. - Do not eat, drink, smoke or handle contact lenses in areas with possible BBP exposure; and
7. - Persons cleaning up an accident scene should not pick up broken glass or other sharp objects by hand. All clothes and other items at the first aid scene should be safely secured prior to leaving.

Employees who may have been exposed to BBPs should report the incident at once.

Remote areas

The sampling team may be located in areas not readily accessible by vehicle. Radio communication will be maintained from the sampling team to a base station in the event of an emergency.

Heavy lifting

It may be necessary to carry sampling equipment (e.g., coolers, sampling containers, and equipment) during the course of the field activities. Care must be taken to avoid injury while carrying equipment to the sampling locations.

Hand tools

Some of the field activities and sampling procedures may require the use of hand tools with sharp edges including machetes, scissors, clippers, knives, and razor blades. Care must be taken during their use to prevent injuries from cuts.

Weather related hazards

Weather-related hazards include the potential for heat or cold stress, electrical storms, treacherous weather-related working conditions, high winds, and limited visibility. These hazards correlate with the season in which site activities occur. In the event of adverse weather conditions, the Field Team Leader will determine if work can continue without endangering the health and safety of site personnel.

Heat stress

Heat stress is a significant potential hazard during the warmer months. Heat stress manifests itself as one of three conditions: heat cramps, heat exhaustion, or heat stroke. Heat cramps are brought about by a

prolonged exposure to heat. As an individual sweats, water and salts are lost by the body, triggering painful muscle cramps. The signs and symptoms of heat cramps include:

- Severe muscle cramps, usually in the legs and abdomen;
- Exhaustion, often to the point of collapse; and
- Dizziness or periods of faintness.

First aid treatment includes shade, rest, and fluid replacement. The individual will drink electrolyte-replacement fluids (e.g., Gatorade, Squencher, 10-K), which will be made available to field personnel. If the individual has not recovered within ½ hour, then he/she will be transported to the hospital for medical attention.

Heat exhaustion usually occurs in a healthy individual who has been exposed to excessive heat while working or exercising. Blood collects near the skin in an effort to rid the body of excess heat. The signs and symptoms of heat exhaustion include:

- Rapid and shallow breathing;
- Weak pulse;
- Cold and clammy skin, with heavy perspiration;
- Skin appears pale;
- Fatigue, weakness, and/or dizziness; and
- Elevated body temperature.

First aid treatment includes cooling the victim, elevating the feet, and replacing fluids. If the individual has not recovered within ½ hour, he/she will be transported to the hospital for medical attention.

Heat stroke occurs when an individual is exposed to excessive heat, and their body systems become overwhelmed by heat and begin to stop functioning. This condition is a medical emergency, requiring the immediate cooling of the victim and transport to the hospital immediately. The signs and symptoms of heat stroke include:

- Victim has stopped sweating;
- Dry, hot, red skin;
- Body temperature approaching or above 105° F;
- Dilated (large) pupils; and
- Loss of consciousness; victim may lapse into a coma.

Local weather conditions may produce an environment which will require restricted work schedules in order to protect employees. The Field Team Leader will observe workers for any potential symptoms of heat stress. Adaptation of work schedules and training in recognition of heat stress conditions will help prevent heat-related illnesses from occurring.

Cold stress

Cold stress is a danger at low temperatures and when the wind chill factor is low. Cold stress is generally described as a local cooling (frost nip, frost bite, and freezing) or a general cooling (hypothermia). Personnel working outdoors in temperatures at or below freezing may be subject to local cooling. Areas of

the body that have a high surface area-to-volume ratio, such as fingers, toes, and ears, are the most susceptible. The three categories of local cooling include:

- Frost nip - characterized by a blanching or whitening of the skin;
- Frost bite - skin has a waxy or white appearance and is firm to the touch, but the tissue beneath is resilient; and
- Freezing - skin tissue is cold, pale, and solid.

Frost nip and frost bite first aid includes covering the affected area with warmth and retreating to a warm area. Frozen tissue is a medical emergency, and the victim will be transported to the hospital immediately.

General cooling (hypothermia) occurs when exposure to cold reduces body temperature. With prolonged exposure, the body becomes unable to maintain its proper internal temperature. Without treatment, hypothermia will lead to stupor, collapse, and death. The signs and symp- toms of mild hypothermia include:

- Shivering; -
- Numbness; and -
- Drowsiness. -

First aid for mild hypothermia includes using heat to raise the individual's body temperature. Heat may be applied to the victim in the form of heat packs, hot water bottles, and blankets.

The signs and symptoms of severe hypothermia include:

- Unconsciousness; -
- Slowed respiration or respiratory arrest; -
- Slowed pulse or cardiac arrest; -
- Irrational or stuporous state; and -
- Muscular rigidity. -

First aid for severe hypothermia includes handling the victim very gently; rough handling may set off an irregular heartbeat. Do not attempt to re-warm the severely hypothermic victim; re-warming may cause the development of an irregular heartb eat. Severe hypothermia is a medical emergency, and the victim will be transported to the hospital immediately.

Prevention of cold stress is a function of whole body protection. Adequate insulated clothing will be worn when the air temperature drops below 50 °F. Reduced work periods may be necessary in extreme conditions to allow adequate periods in a warm area.

Appendix C: Calibration Procedures for Water Quality Field Instruments

The following is the typical order in which field staff should calibrate a sonde in preparation for a day of water quality sampling. The order in which individual probes are calibrated is not important, but we recommend calibrating the SC probe before the pH probe – pH standards have a very high specific conductance (an order of magnitude higher than SC standard), and any standard accidentally left in the calibration cup could throw off the SC calibration.

Try to keep your standards within 5 °C of expected stream temperatures to ensure accurate calibrations. This may require putting the standards in the vehicle the day before calibrating to cool them overnight or placing the standards in a refrigerator overnight. Do not allow standards to freeze. It is recommended to bring standards into the field in order to recalibrate the field meter should some issue arise while away from the office.

Dissolved Oxygen

Make sure the instrument is turned on and the sonde is running. To calibrate DO% in water saturated air, pour a small amount of water (1/8 inch) in the plastic storage cup. Make sure there are no water droplets on the DO membrane or temperature sensor. Then install the storage sleeve over the sensor. Screw it on to the cable and then disengage one or two threads to ensure atmospheric venting. Wait approximately 5 – 15 minutes to allow the chamber to equilibrate and become completely saturated.

Go through the calibration steps from the main menu screen. **Be sure to calibrate only to one point at 100% saturation.** Return to the sonde run screen.

Specific Conductivity

Remove the black cap from the cal cup and pour a small amount of 1000 µS/cm standard onto the SC probe (the probe with 2 open holes and the metal thermistor protruding from the plastic probe body). Cap the cup and shake vigorously to cover all interior surfaces with standard. Discard this standard and repeat twice more (a "triple rinse"). Then, pour in enough standard to submerge the SC probe and replace the black cap. Record this SC value along with the standard temperature, standard lot number, and standard expiration date. (Also record the lot numbers and expiration dates of the other SC standards used). If the reading is ±3% from the expected value, the probe needs to be calibrated. It is recommended to calibrate if the sonde is reading ±1.5% from the expected value. **The specific conductivity probe is only ever calibrated to 1000 µS/cm**, and any readings in other standards are just to confirm that the calibration was a valid calibration. Record the temperature and SC after the probe is calibrated. Return to the sonde run screen.

Triple rinse in 250 µS/cm standard, then record the reading in the same standard. Repeat for 50 µS/cm standard. The reading in 250 µS/cm standard should be within 3%, and the reading in 50 µS/cm should be within 5 µS/cm.

If either of these is off, go back and calibrate in 1000 µS/cm standard (if not already done) and repeat the checks in 250 and 50 µS/cm standard. If the values continue to be off, try to troubleshoot the probe – clean the probe ports with an SC probe brush, rinse with DIW before using the SC standard, or open fresh bottles of standard.

In winter months, follow all of this up with a check reading in 10,000 µS/cm standard to make sure the SC probe is operating well in the high SC range.

pH

Triple rinse with pH 7 standard and record the standard temperature as well as a reading from the pH probe. Take this opportunity to write down hypothetical pH values for the 7, 10, and 4 pH standards, all lot numbers, and all expiration dates of the standards. You may need to let the pH probe equilibrate for a few minutes if the standards are cold before recording the first reading. It is recommended that the pH probe is calibrated every time it is used, and the manufacturer recommends that the probe be calibrated if it gives readings ± 0.2 units from the hypothetical pH value.

To calibrate, follow the steps for a three point pH calibration from the main menu. Triple rinse with each standard before actually calibrating, and enter the hypothetical pH values as the values to which the probe should be calibrated. **Always start by calibrating to pH 7**, then calibrate to pH 10 and pH 4 (the order of these two standards is not important). Be sure to record the reading after the probe is actually calibrated. Once fully calibrated, return to the sonde run screen.

Your water quality field instrument is ready for use in the field.

Appendix D: Field Form for In-Stream Monitoring

STATION NO: 01645704 SAMPLE DATE: 9/21/2012 PURPOSE OF SITE VISIT (50280) 1001

STATION NAME : Difficult Run Above Fox Lake Nr Fairlax, VA MEAN SAMPLE TIME (CLOCK) 1045 TIME DATUM: EST (EDT)

PROJECT NO.: GC13LM009RO3500 PROJECT NAME: FAIRFAX MONITORING HYDRO EVENT 9 HYDRO COND 9

SAMPLING TEAM : JKMcCulla, JDJastram TEAM LEAD SIGNATURE James McCulla DATE 9/22/2012

Time: Label Fairfax replicates 15 minutes past regular samples and blanks 5 minutes before regular samples.
Sample Type: A regular sample is Sample Type 9. If a replicate is collected, label both regular and replicate 7. If a blank is collected, label the blank Sample Type 2 and the regular sample Sample Type 9.

Analysis Source 5
Collecting Agency USGSVAWC

Sample Type	Time	Medium	Sample Type	Dupl. Type 99105	
Regular	1045	WS	9		
Replicate		WSQ	7	30 (split)	
Lab Split		WSQ	7	200 (lab-split)	
Blank		OAQ	2		
Reference		OAQ	6		
Other					

SAMPLES COLLECTED
SUSP. SED. X
NUTRIENTS X
OTHER: _____

FIELD MEASUREMENTS

GAGE HT (00065) 0.84 ft
COND (00095) 164 µS/cm@25 °C
DIS. OXYGEN (00300) 8.26 mg/L
TEMP, AIR (00020) 19.5 °C
BAROMETRIC PRES. (00025) 756 mm Hg
TEMP, WATER (00010) 16.28 °C
TURBIDITY (63680) 2.0 FNU
pH (00400) 7.09 UNITS

GAGE HEIGHT READINGS:
0.84 @ 1058
_____ @ _____
SOURCE: STAFF PLATE
OTHER: _____ (REASON: _____)

SAMPLING INFORMATION

Sampler Type (84164) 3070 Sampler ID GRAB
Sampler Bottle/Bag Material: PLASTIC TEFLON OTHER _____ Nozzle Material: PLASTIC TEFLON OTHER _____ Nozzle Size: 3/16" 1/4" 5/16"
Stream Width: _____ ft mi Left Bank _____ Right Bank _____ Mean Depth: _____ ft Ice Cover _____ % Ave. Ice Thickness _____ in.
Sampling Points: CENTROID SAMPLE THREE FIVE EQUIDISTANT STATIONS Standard: _____
Sampling Location: WADING BRIDGE UPSTREAM DOWNSTREAM SIDE OF BRIDGE 40 ft mi above below at gage _____
Sampling Site: POOL RIFFLE OPEN CHANNEL BRAIDED BACKWATER Bottom: BEDROCK ROCK COBBLE GRAVEL SAND SILT CONCRETE OTHER _____
Stream Color: BROWN GREEN BLUE GRAY CLEAR OTHER _____ Stream Mixing: WELL MIXED STRATIFIED POORLY-MIXED UNKNOWN OTHER _____
Weather: SKY: CLEAR PARTLY CLOUDY CLOUDY PRECIP: LIGHT MEDIUM HEAVY SNOW RAIN MIST WIND: CALM LIGHT BREEZE GUSTY WINDY EST. WIND SPEED _____
TEMP: VERY COLD COOL WARM HOT Stage: STABLE, NORMAL STABLE, HIGH RISING FALLING PEAK
Sampling Method (82398): EWI [10] GRAB [70] SINGLE VERTICAL [30] MULT VERTICAL [40]

COMPILED BY: _____ CHECKED BY: _____ DATE: _____

Fairfax County 2021 MS4 Program Plan and Annual Report

Appendix P15

Floatables Monitoring Standard Operating Procedures

VSMP Permit Number VA0088587
9-30-2021

Department of Public Works and Environmental Services
POLICIES AND PROCEDURES Memorandum No.: SWPD17-01

SUBJECT: Standard Operating Procedures for the MS4 Floatables Monitoring Program

Effective: 3/30/2017 **Revised:** 11/14/2019 Approval:

Clean Fairfax Council Approval:

I. Purpose

Under the MS4 permit, Fairfax County is required to develop and implement a floatables monitoring program to determine the loading of floatables from the MS4 to streams within Fairfax County. This SOP describes Fairfax County's program for floatables monitoring.

Fairfax County's (renewed) 2015 Virginia Stormwater Management Program (VSMP) Municipal Separate Storm Sewer System (MS4) permit includes the following provisions for floatables monitoring (Part I, Section C.3):

No later than 24 months after the effective date of the permit, the permittee shall develop and implement a floatables monitoring program. The intent of the monitoring program is to determine the loading of floatables from the MS4 to streams within Fairfax County. The permittee will implement the floatables monitoring program as follows:

a. *Monitoring shall be conducted at five (5) monitoring sites located at MS4 outfalls and/or streams receiving discharges from the MS4.*
b. *Monitoring shall be conducted once per quarter after program implementation.*
c. *The monitoring program shall include the count of floatables visually observed and length or area of sites assessed.*

SPECIFIC REPORTING REQUIREMENTS:

- *The annual report due October 1, 2016 shall include an update on the development of the floatables monitoring program.*
- *The annual report due October 1, 2017 shall include the monitoring protocols for the floatables monitoring program.*
- *Beginning with the annual report due October 1, 2018, each following annual report shall include a list of sites monitored, a summary of the monitoring protocols used, and a summary of the monitoring results and analyses.*

This Floatables Monitoring Program Standard Operating Procedure (SOP) describes Fairfax County's site selection, field reconnaissance, and floatables monitoring protocols for evaluating the loading of floatables from the County's MS4 and provides a framework for full compliance with the above MS4 permit requirements. This SOP may be modified over time as additional data are gathered or as the needs of Fairfax County's program change.

This document contains the following sections:

- Project Management
- Site Selection and Priority Determination
- Field Protocol for Floatables Monitoring
- Data Management and Reporting
- Public Education and Outreach

II. Project Management

The MS4 Program Coordination Section (MPCS) of the Stormwater Planning Division (SWPD) of the Department of Public Works and Environmental Services (DPWES) has partnered with the Clean Fairfax Council, Inc. (CFC) to conduct the floatables monitoring required by the MS4 permit and to develop a litter prevention public education and outreach plan. All major project decisions are made jointly by CFC and the MPCS, and CFC is responsible for conducting field work, data entry, ensuring data quality, and preparing reports. The site selection procedure is detailed below.

Floatables monitoring is used to assess the effectiveness of the County's litter prevention program by documenting trends in trash discharged from the MS4. More specifically, the project will determine the floatables loading rates at monitoring locations selected to be representative of the County's MS4 service area.

III. Site Selection and Priority Determination

a. Criteria for Identifying Candidate Sites

The intent of the floatables monitoring program is to determine the loading of floatables from the MS4 to streams within Fairfax County. The County used the data listed in Table 1 to target appropriate sites for floatables monitoring. The way these data sources were used to identify suitable areas for floatables monitoring during the desktop GIS analysis is described below.

Table 1: GIS layers used to select floatable sites for monitoring

GIS Layer	Dataset Name
MS4 service area	FairfaxCounty_MS4ServiceArea_2016
Land use	IPLS.IPLS_GENER_EXIST_LAND_USE
Fairfax hydrography layer	GISMGR.HYDRO_EDGES
Easements	STWMGR.EASEMENTS_POLYGONS

Floatable monitoring activities are focused on those areas that are regulated under the County's VSMP MS4 discharge permit. The County's MS4 service area consists of those drainage areas that discharge to an MS4 outfall that is owned or operated by Fairfax County. An MS4 outfall is defined as a point of discharge from a man-made channel or conveyance to surface waters of the State.

One key factor in selecting candidate areas for monitoring is land use, as represented by the County's land use codes for parcels. Additional factors to be considered when determining representative monitoring locations are geographic location within the county, and the contributing drainage area (size).

1. Land Cover

Detailed land uses categories are organized into generalized index values according to the predominant activities occurring on the parcel that consist of agricultural, commercial, industrial, institutional, recreational, open land, low density residential (LDR), medium density residential (MDR), and high density residential (HDR). Appendix A contains a list of all of the detailed land use categories in the county and

their corresponding generalized values (or types). The distribution of land use types in the County's MS4 service area is presented in Table 2.

Table 2: Distribution of Land Use Types in the County's MS4 Service Area

Rank	Land Use Type	Acres	Percentage (%)
1	Low Density Residential	39,122.1	56.4
2	Open Land	10,203.1	14.7
3	Commercial	4,517.3	6.5
4	Institutional	4,272.4	6.2
5	Medium Density Residential	3,244.6	4.7
6	High Density Residential	2,779.3	4.0
7	Recreational	2,687.4	3.9
8	Industrial	1,459.3	2.1
9	Utilities	580.2	0.8
10	Public	428.2	0.6
11	Agricultural	20.0	0.03
	Total	**69,313.8**	**100.0**

The top six land uses (low density residential (LDR), open land, commercial, institutional, medium density residential (MDR), and high density residential (HDR)) comprise the majority (92.5%) of the County's MS4 service area. Because there is no target audience for litter prevention messaging in open land areas, and they are not likely to be a significant source of litter, this land use type is not included in the land uses targeted for site selection. As a result, the five land use types initially recommended for candidate monitoring locations are HDR, MDR, LDR, institutional, and commercial.

2. Contributing Area

In addition to characterizing land use, monitoring locations should be selected to be representative of the service area in other aspects, such as the contributing drainage area. Initial monitoring locations, selected to characterize land cover classes, ranged in size from 11.1 to 28.7 acres (average = 18.7). However, an examination of the distribution of sizes for the entire population of individual service areas (figure 1.) shows that 71% of MS4 outfalls drain less than 10 acres of land. Monitoring locations should be selected to ensure that loading rates from these smaller drainage areas are adequately represented and analysis should clearly specify what population of the MS4 service area a location is intended to characterize.

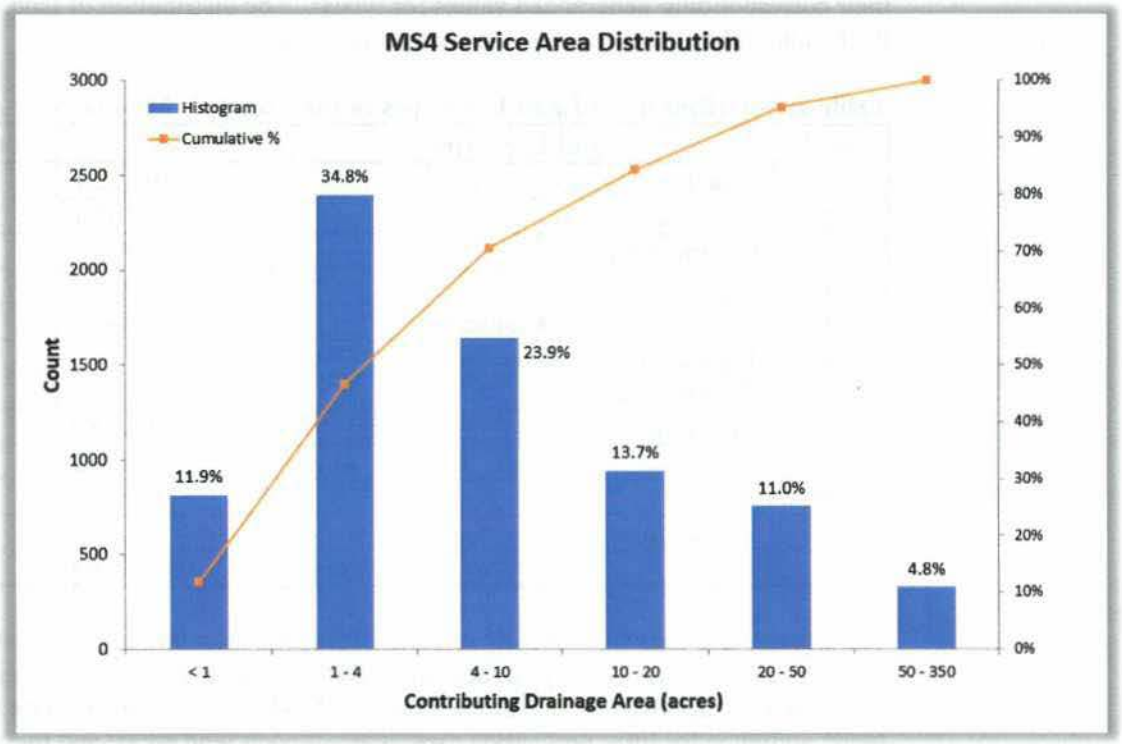


Figure 1. MS4 Service Area Size Distribution

3. Identification of Stream Segments

The County's hydrography layer is used to identify stream segments that receive stormwater discharges from MS4 service areas and are of sufficient length for sampling.

4. Easements

Maintenance and repair easements are required to allow the County to legally access portions of the storm drain network on private property for the purpose of conducting monitoring. The presence of easements is therefore another key factor in selecting candidate areas for monitoring.

b. Site Selection Protocols

The goal of the floatables monitoring program is to characterize the loading rate of floatables from the County's MS4. The most prevalent land uses in the MS4 service area were identified and prioritized for site selection as described in the previous section. This approach allows the floatables data collected at each site to be used to help target litter prevention outreach to each drainage area, and to detect any changes in the floatables loading from each area following targeted outreach efforts.

Level 1: Desktop Analysis

Step 1: Overlay the County MS4 service area and land use layers to determine the proportions of each land use type for individual service areas.

Step 2: Identify the predominant land use for the contributing drainage area of each MS4 outfall.

Step 3: Select monitoring location segments that are minimally impacted by other outfalls and tributaries with upstream floatable sources.

Step 4: Identify the watershed and supervisor district where sites are located to ensure sites are distributed across the County and therefore more likely to be representative of the floatables loads from each land use type.

Step 5: Identify any nearby community groups that may help conduct stream cleanups, if needed.

Step 6: Coordinate with internal stakeholders to ensure that candidate sites are not scheduled for outfall repair, stream restoration activities, or trash collection device installation.

Level 2: Field Reconnaissance

Step 7: Candidate sites from the site selection protocol are visited to assess suitability for monitoring, accessibility, safety, cooperative residents, and presence of a flowing stream.

1. Confirm that the MS4 outfall discharges to a flowing stream, preferably headwaters.

2. Evaluate site accessibility, landowner permission, and safety of the area for the purpose of conducting stream cleanups. If access to the outfall is impeded by dangerous terrain or fences, then choose another site.

3. Confirm that the source of floatables observed is from the MS4 (not illegal dumping or direct discharges from overland sources).

4. Confirm (if possible) that the monitoring data is representative of the location and that the monitoring is providing useful information.

c. Adaptive Management

As specified in the MS4 permit, the floatables monitoring program will evaluate effectiveness of the program on an annual basis to ensure that program goals are being met by program standard operating procedures. If annual monitoring indicates that site locations are not providing representative data needed to estimate floatable loading rates, staff will address the issue, update the procedures, and document the rationale and corrective measure in the MS4 Annual Report or Program Plan.

d. Site Characterization for Floatables Loading Analysis

For each monitoring site, the following information is used to characterize the location in the GIS data layer:

1. Outfall Stormnet ID
2. Predominant Land Use Type
3. MS4 contributing drainage area in acres
4. Percentage of each land use type
5. Location description (address or street intersection)
6. Magisterial District
7. Watershed
8. Receiving waterbody stream name
9. Community Association (for targeted outreach, support with clean ups)

IV. Field Protocol for Floatables Monitoring

This section provides details of the protocols to be followed during floatables monitoring deployments and includes descriptions of sampling equipment, sampling frequency, and antecedent condition requirements.

a. Health and Safety

Ensuring the health and safety of field personnel is the responsibility of every member of the staff for the project. The collective effort of all staff members in providing a healthy and safe work environment helps to minimize or eliminate the potential for accidents. Safety protocols designed to protect the field staff are outlined in Appendix B of this document.

- STW are to sign out on the board near the administration staff.
- Attempt to perform field work in teams of at least two. If field work must be completed by one person, ensure that the itinerary is shared with staff and confirm check-in on return to the office by phone or in-person.
- Wear hi-visibility vest.
- Bring mobile phone and first aid kit on all field site visits.
- Exercise caution when encountering any wildlife and hazardous plants. In addition, many outfalls are located in remote areas that may be near gathering places for homeless or transient individuals. Do not enter a potentially hostile area.
- Do not conduct sampling during electrical storms and/or when severe conditions (e.g., high wind, hail) develop. The safety of field staff overrides all other considerations.
- Storm sewers contain a variety of water-borne bacteria and other harmful chemicals. Wash hands or use anti-bacterial wipes or hand gels liberally, especially prior to lunch breaks, etc.

Additional information on Health and Safety may be found in Appendix B, including information on field staff conduct, personal protective equipment, dangerous flora and fauna, unknown hazardous substances and wastes, blood borne pathogens, remote areas, hand tool safety, weather-related hazards, and heat and cold stress.

b. Sampling Methods

Monitoring at all five sites is conducted exclusively by SWPD and/or CFC staff. Staff performing monitoring for the first time will be trained in the implementation of this protocol.

1. Site Establishment

At each of the five monitoring sites, staff measure and mark off 100 linear feet of the stream receiving discharge from the MS4. Staff place additional flags at the midpoint (50 feet) of the monitoring area, as well as determine and mark off the bank full width at each site. Staff photograph markings for inclusion in program documentation and to ensure consistency of the monitored area at each site. On monitoring events, all trash is enumerated within the marked area; which consists of the bank full width along the 100-foot stream segment.

2. Site Visits and Monitoring

Field staff use the MS4 Floatables Monitoring data sheets to tally and summarize counts of trash within the sampling area marked at each site. The datasheets consist of:

1. Cover sheet with detailed site identification and a floatable count summary of individual tally sheets on the reverse side, and
2. Tally sheet(s) with floatable subcategory type definitions on the reverse side.

The MS4 Floatables Monitoring data sheets were created through coordination with the MPCS and CFC. Where possible, efforts were made to be consistent with the Metropolitan Washington Council of Governments' Anacostia Watershed Trash Survey form. The tally sheet is organized by five major categories:

1. Food and beverage,
2. Household items,
3. Recreation equipment and advertising,
4. Hazardous materials, and
5. Other trash items.

Each of the major categories contains a series of more detailed subcategory options that are included on the tally sheets. The cover sheet and tally sheet are included in Appendix C.

For each monitoring event, the following occurs:

1. The designated crew chief fills out the cover sheet for the monitoring event.
2. The crew chief determines the number of data recorders needed to enumerate the floatables for the monitoring event and distributes data sheets to the recorders.
3. When a site is subdivided into more than one monitoring area, the crew chief assigns data recorders to clearly delineated sections for each subarea.
4. Data recorders fill out each item in the header section of the datasheet; no items are to be left blank. Slashes, zeros or "N/A" are used for any item as needed, to confirm that there has not been an omission.
5. Data recorders tally the types (subcategories) of floatables observed in the monitoring area on the datasheet in pencil. In order to ensure legibility, mistakes are crossed out instead of erased.
6. Data recorders review the subcategory definitions on the reverse side of the form if there are any questions about the appropriate category for an item.
7. After counting all of the floatables in the monitoring area, data recorders reconvene and identify the total number of data sheets that have been used. Each sheet is then numbered individually, starting with the cover sheet, and including the total number of sheets that have been used.

8. On the tally sheet(s), data recorders count all tally marks and summarize the total numbers for each detailed subcategory of trash in the total column.
9. Data recorders exchange tally sheets and perform independent reviews of each other's datasheet(s) for completeness, and to check the calculation of totals by subcategory and category. The reviewer initials the "Reviewed by" section to document that the review is complete.
10. On the 'Floatable Count Summary' (rear of the cover sheet), the crew chief summarizes the totals for each subcategory of trash from each datasheet to determine the overall total. This summary includes the arithmetic used to determine overall totals.
11. The following digital photographs are taken on each monitoring event and numbered on the cover sheet.
    a. Photo of cover sheet to identify site and subsequent photos
    b. Photo of the MS4 outfall
    c. Photo of the survey area from the downstream end facing upstream.
    d. Photo of the survey area from the outfall looking downstream.
    e. Additional photos of any notable observations
12. The file names of the digital photos are recorded on the cover sheet in the photo documentation section.
13. The crew chief confirms that tally sheets have been reviewed, and reviews the Floatable Count Summary and Cover sheets for completeness and accurate arithmetic.
14. After the site visit, the crew chief scans the completed and reviewed datasheet(s) and saves them on the MS4 SharePoint site using the conventions described in Section V.b (Field Sheet Retention and Storage).

Steps 12 through 14 are conducted when the team returns to the office.

c. Sampling Frequency

The County's permit specifies sampling must take place four times per year at five sites. Under this protocol, sampling is performed once per quarter during a yearly monitoring period at each floatables monitoring site.

The program is designed to monitor immediately downstream from five outfalls on a quarterly basis. Cleanup events are conducted after each monitoring event. Additional outreach and cleanup events are planned to engage local communities and provide education and outreach to target audiences in the monitored sewershed. The Floatable Monitoring Cover sheet includes a section to record the date of the last clean up event, since these events can impact the amount of floatables observed.

d. Rainfall Criteria

Sampling shall not take place if it has rained 0.2 inches or more in the 48 hours preceding the sampling event. This is intended to ensure staff safety and to minimize the possibility of turbid conditions in receiving waters that could interfere with the sampling crew's ability to detect trash items. The Floatable Monitoring Cover sheet includes a section to record the total amount of precipitation within the 48 hours preceding the monitoring event to confirm

adherence to this requirement. Rainfall data is obtained from the National Weather Service weather station at Washington/Dulles International Airport.

V. Data Management and Quality Control

Quality control is designed to ensure a high level of quality for the data collected through the floatables monitoring protocol. This includes the actions necessary to verify and control the quality of the data collected, with an overall goal of producing dependable data. The following elements of the floatables monitoring protocol are implemented in order to ensure data quality:

a. Reliability and Consistency of Recording

In an effort to minimize discrepancies in the recorded data that may stem from interpersonal variability of the field staff, data recorders periodically conduct duplicate surveys of a monitoring area. Staff then compare results and discuss any differences in counts due to differences in the categorization of floatables or other ways that counts were recorded. Staff review the subcategories of floatables (and their descriptions) and repeat these duplicate surveys until consistent results are achieved. Staff clearly identify the datasheets from these exercises as QA/QC, retain them, and file them appropriately.

The process described in Section IV.b.2 provides details on the multiple reviews that are intended to minimize the recording of illegible writing, arithmetic errors, and other oversights. The section also includes procedures intended to minimize the possibility of lost or missing datasheets and misinterpretation of blank values.

b. Field Sheet Retention and Storage

The following processes are used to digitize and store original datasheets to maintain data integrity and to support the necessary reporting requirements.

1. Paper data sheets are used in the field and scanned within 3 business days in the office. Scanned sheets are named using the convention: `SITE-QUARTER-MMDDYYYY` (e.g. HDR-Q2-03262017 (High Density Residential, 2nd quarter, March 26, 2017), LDR-3-06012017 (Low Density Residential, 3rd quarter, June 1st, 2017)).
2. Digital Photos are re-named using the convention: `SITE-QUARTER-MMDDYYYY-#` (e.g. COM-Q2-03262017-1 (Commercial, 2nd quarter, March 26th, 2017, 1st photo)).
3. Scanned datasheets and digital photos are uploaded to the MS4 Coordination SharePoint site (http://fairfaxnet.fairfaxcounty.gov/dept/DPWES/ms4) for the floatable monitoring program into the appropriate directory. The naming convention used for directories is `YEAR-QUARTER` (e.g. 2016-Q2 (second quarter of 2016).
4. Original datasheets are delivered to the MS4 Program Coordination Section and filed by the MS4 program staff.
5. The final, reviewed counts are entered into ArcGIS Collector with seven (7) business days of the monitoring event.

Typically, data entry is completed by CFC. QA/QC of the data entry is performed by comparing the data entered into ArcGIS Collector with the scanned data sheets. In the event that CFC is unable to complete the QA/QC for the data entry, County staff from SWPD will perform it. Tables and figures used in the annual reports are reviewed for accuracy by the MPCS prior to use in the reports.

c. Monitoring Reports Retention and Storage

Floatables Monitoring Program data are stored in ArcGIS Collector. Annually, this data is exported from ArcGIS and analyzed. All analyzed data is placed on the MS4 Coordination SharePoint site. The analysis of this data allows staff to define a target audience and message to conduct public outreach and education, as well as estimate the loading rate of floatables from the MS4. CFC will provide quarterly progress reports via email that include a brief summary of progress and identify any barriers the project has encountered. Annual reports will be created by the MPCS. CFC and the MPCS will retain all data reports for 5 years after the permit expiration date.

d. Monitoring Yearly Report

Annual reporting is conducted by the MPSC at the end of each MS4 reporting cycle (July 1 – June 30) as part of the County's Annual MS4 report to VA DEQ. For permit years two and three, reports will include the monitoring protocols for the floatables monitoring program and data collected using the protocols. For permit years four and five, reports will include comparisons to previous years monitoring efforts and results. The year five report will also include an overall summary of the floatables monitoring program and recommendations for future floatables screening efforts. The report will contain narratives for each area monitored and briefly describe results. The yearly report includes the following:

- a list of the sites monitored,
- a summary of the monitoring protocols used; and
- a summary of the monitoring results and analyses.

VI. Public Education and Outreach

Clean Fairfax Council identifies community gathering places (libraries, churches, community centers, businesses, shopping centers, etc.) located within the area draining to each monitoring site using existing County GIS overlays and field verification. Whenever possible, efforts are made to involve community members in developing solutions to a litter problem. Also, community members are encouraged to join available environmental stewardship programs such as watershed "Friends of" groups.

Outreach and education may include the following:

- Litter prevention educational outreach messages that are specific to each monitored location using compelling and easy-to-understand information about the short- and long-term effects of floatables pollution. This could include articles and/or pictures for newsletters, bulletin board posters, flyers, website postings, and the use of social media.
- Distribution of free reusable water bottles and/or grocery bags, depending on what is the most frequently found item in the monitored area
- CFC will conduct location-specific presentations once per year, following one monitoring/clean up event to engage citizens in their own backyard
- Yearly participant survey to determine changes in attitude and/or behavior regarding litter/recycling and the use of reusable materials
- Installation of additional trash and/or recycling receptacles, anti-littering signage, etc.

VII. Contacts

Agency	Contact	Phone
MS4 Program Coordination Section	Heather Ambrose	703-324-5816
MS4 Program Coordination Section	Marty Hurd	703-324-5644
MS4 Program Coordination Section	Emily Burton	703-324-5637
Clean Fairfax Council, Inc.	Jen Cole	703-324-5471
Clean Fairfax Council, Inc.	Zach Huntington	804-214-1905

VIII. Administrator of the SOP

This SOP document is administered by the MPCS within the SPWD. For more information about this document, please call the Stormwater Planning Division at (703) 324-5500.

IX. Appendices

A. Land Use Codes and Descriptions

B. Health and Safety Guidance for Floatables Monitoring Field Work

C. Floatables Monitoring Field Data Sheets

Appendix A: Land Use Codes (LUC) and Descriptions.

LUC	Detailed Land Use Description	Generalized Value	Sub Category
910	Agriculture activities and related services	AGRICULTURAL	Industrial
920	Forestry activities and related services	AGRICULTURAL	Industrial
930	Horticultural activities	AGRICULTURAL	Industrial
081	Motel w/o restaurant and/or other commercial amenity	COMMERCIAL	Retail
082	Motel w/ restaurant and/or other commercial amenity	COMMERCIAL	Retail
083	Hotel w/o restaurant and/or other commercial amenity	COMMERCIAL	Retail
084	Hotel w/ restaurant and/or other commercial amenity	COMMERCIAL	Retail
085	Tourist home	COMMERCIAL	Retail
089	Other Transient Lodging, NEC	COMMERCIAL	Retail
311	Neighborhood shopping center	COMMERCIAL	Retail
312	Specialty shopping center	COMMERCIAL	Retail
313	Community shopping center	COMMERCIAL	Retail
314	Regional shopping center	COMMERCIAL	Retail
315	Super regional shopping center	COMMERCIAL	Retail
316	Promotional shopping center	COMMERCIAL	Retail
317	Town shopping center	COMMERCIAL	Retail
318	Condo shopping center	COMMERCIAL	Retail
320	Building materials, hardware, farm equipment	COMMERCIAL	Retail
331	Department stores	COMMERCIAL	Retail
332	Discount stores	COMMERCIAL	Retail
333	Variety or junior department stores	COMMERCIAL	Retail
334	Apparel and accessories	COMMERCIAL	Retail
335	Furniture, house furnishings	COMMERCIAL	Retail
336	Drug stores	COMMERCIAL	Retail
337	Condo retail	COMMERCIAL	Retail
341	Supermarket	COMMERCIAL	Retail
342	Supermarket plus general merchandise	COMMERCIAL	Retail
343	Convenience grocery	COMMERCIAL	Retail
349	Other food NEC (including fruit, meat, fish, etc.)	COMMERCIAL	Retail
351	Restaurant with alcohol includes a wide range of b	COMMERCIAL	Retail
352	Restaurant without alcohol typified by a high rat	COMMERCIAL	Retail
353	Carry-out Kitchen distinguishing characteristic is	COMMERCIAL	Retail
354	Carry-out with seating generally a fast food opera	COMMERCIAL	Retail
359	Other eating and drinking NEC	COMMERCIAL	Retail
361	Motor vehicle sales (new and used)	COMMERCIAL	Retail
362	Gasoline and service station	COMMERCIAL	Retail
363	Gasoline sale only	COMMERCIAL	Retail
364	Gasoline sales and car wash	COMMERCIAL	Retail
365	Service station out of operation, but not yet conv	COMMERCIAL	Retail

LUC	Detailed Land Use Description	Generalized Value	Sub Category
369	Other automotive, marine, aircraft, and accessories	COMMERCIAL	Retail
390	Other retail NEC	COMMERCIAL	Retail
410	Office Park	COMMERCIAL	Office
421	General low rise office	COMMERCIAL	Office
422	Medical and/or dental low rise office	COMMERCIAL	Office
425	Condominium office (general, low rise)	COMMERCIAL	Office
426	Condominium office (medical and/or dental, low ris	COMMERCIAL	Office
427	Cluster office (general, low rise)	COMMERCIAL	Office
428	Cluster office (medical and/or dental, low rise)	COMMERCIAL	Office
429	Converted residential office (ex-dwellings which h	COMMERCIAL	Office
431	General medium or high rise office	COMMERCIAL	Office
432	Medical and/or dental medium or high rise office	COMMERCIAL	Office
435	Condominium office (general, medium or high rise)	COMMERCIAL	Office
436	Condominium office (medical and/or dental, medium	COMMERCIAL	Office
490	Other office NEC	COMMERCIAL	Office
510	Finance, insurance, real estate and professional s	COMMERCIAL	Retail
520	Personal services	COMMERCIAL	Retail
530	Motor vehicle repair when provided separately from	COMMERCIAL	Retail
540	Other repair services	COMMERCIAL	Retail
490	Other office NEC	COMMERCIAL	Office
338	Comm Use in Res Condo Dev	COMMERCIAL	
040	Garden apartments, rental	HIGH DENSITY RESIDENTIAL	Multi-family
041	Garden apartments, condominium	HIGH DENSITY RESIDENTIAL	Multi-family
042	Medium rise apartments, apartments rental	HIGH DENSITY RESIDENTIAL	Multi-family
043	Medium rise apartments, condominium	HIGH DENSITY RESIDENTIAL	Multi-family
044	High rise apartments, rental, without commercial/p	HIGH DENSITY RESIDENTIAL	Multi-family
045	High rise apartments, condm, without commercial/p	HIGH DENSITY RESIDENTIAL	Multi-family
046	High rise apartments, rental, with commercial/prof	HIGH DENSITY RESIDENTIAL	Multi-family
047	High rise apartments, condm, with commercial/p	HIGH DENSITY RESIDENTIAL	Multi-family
048	Combination of structure types, predominantly apts.	HIGH DENSITY RESIDENTIAL	Multi-family
049	Apartments, NEC, including cooperatives	HIGH DENSITY RESIDENTIAL	Multi-family
071	Rooming and boarding houses	HIGH DENSITY RESIDENTIAL	Government/Institution

LUC	Detailed Land Use Description	Generalized Value	Sub Category
072	Membership lodgings	HIGH DENSITY RESIDENTIAL	Single Family
073	Residence halls and dormitories	HIGH DENSITY RESIDENTIAL	Multi-family
074	Retirement homes and orphanages	HIGH DENSITY RESIDENTIAL	Multi-family
075	Religious quarters	HIGH DENSITY RESIDENTIAL	Government/Institution
076	Nursing homes	HIGH DENSITY RESIDENTIAL	Government/Institution
079	Other group quarters NEC (except. Military & Correc	HIGH DENSITY RESIDENTIAL	Government/Institution
111	Planned industrial park	INDUSTRIAL	Industrial
112	Industrial conglomeration	INDUSTRIAL	Industrial
121	Durable manufacturing	INDUSTRIAL	Industrial
126	Durable manufacturing (where in a condominium devl	INDUSTRIAL	Industrial
127	Durable manufacturing (where in a cluster devl.)	INDUSTRIAL	Industrial
131	Nondurable manufacturing	INDUSTRIAL	Industrial
135	Printing and publishing	INDUSTRIAL	Industrial
136	Nondurable manufacturing (where in a condo devl.)	INDUSTRIAL	Industrial
137	Nondurable manufacturing (where in a cluster devel	INDUSTRIAL	Industrial
140	Research and testing, where not in office bldg or	INDUSTRIAL	Industrial
146	Research and testing (where in condo devl.)	INDUSTRIAL	Industrial
147	Research and testing (where in cluster devl.)	INDUSTRIAL	Industrial
150	Wholesale, warehousing and storage	INDUSTRIAL	Industrial
151	Mini-warehouses	INDUSTRIAL	Retail
156	Wholesale, warehousing and storage (where in a con	INDUSTRIAL	Industrial
157	Wholesale, warehousing and storage (where in a clu	INDUSTRIAL	Industrial
160	Contract construction	INDUSTRIAL	Industrial
166	Contract construction (where in condo devl.)	INDUSTRIAL	Industrial
167	Contract construction (where in cluster devl.)	INDUSTRIAL	Industrial
190	Other industrial NEC	INDUSTRIAL	Industrial
941	Sand and gravel quarrying	INDUSTRIAL	Industrial
949	Other resource production and extraction	INDUSTRIAL	Industrial
550	Veterinary hospitals	INSTITUTIONAL	Retail
610	Cemeteries	INSTITUTIONAL	Government/Institution
620	Hospital and health facilities (except nursing home	INSTITUTIONAL	Government/Institution
660	Correctional institutions	INSTITUTIONAL	Government/Institution
670	Military institutions	INSTITUTIONAL	Government/Institution
680	Welfare and charitable services	INSTITUTIONAL	Government/Institution
690	Other public and quasi public service land uses NE	INSTITUTIONAL	Government/Institution

LUC	Detailed Land Use Description	Generalized Value	Sub Category
710	Chruches, synagogues	INSTITUTIONAL	Government/Institution
720	Civic, social, fraternal, professional, business a	INSTITUTIONAL	Government/Institution
730	Libraries	INSTITUTIONAL	Government/Institution
740	Permanent exhibitions	INSTITUTIONAL	Government/Institution
751	Nursery schools	INSTITUTIONAL	Government/Institution
752	Public elementary, intermediate, secondary, high a	INSTITUTIONAL	Government/Institution
753	Private schools	INSTITUTIONAL	Government/Institution
754	College, universities	INSTITUTIONAL	Government/Institution
755	Special training schools	INSTITUTIONAL	Government/Institution
759	Other educational services NEC	INSTITUTIONAL	Government/Institution
790	Other cultural and entertainment service land uses	INSTITUTIONAL	Government/Institution
011	Single-family, detached	LOW-DENSITY RESIDENTIAL	Single Family
012	Single-family, semidetached or garden court	LOW-DENSITY RESIDENTIAL	Townhouse
051	Mobile homes in park or court	LOW-DENSITY RESIDENTIAL	Multi-family
052	Mobile homes not in park or court	LOW-DENSITY RESIDENTIAL	Single Family
060	Residential hotels and motels	LOW-DENSITY RESIDENTIAL	Multi-family
091	Other residential on separate but adjacent parcel	LOW-DENSITY RESIDENTIAL	Low Density Single Fam
099	Other residential NEC	LOW-DENSITY RESIDENTIAL	Low Density Single Fam
013	Two or more single-family, detached on single parcel	MEDIUM-DENSITY RESIDENTIAL	Single Family
014	Single-family structure NEC	MEDIUM-DENSITY RESIDENTIAL	Single Family
015	Single-family residences located in an area where	MEDIUM-DENSITY RESIDENTIAL	Single Family
021	Duplex, either vertical or horizontal	MEDIUM-DENSITY RESIDENTIAL	Townhouse
029	Two-family NEC	MEDIUM-DENSITY RESIDENTIAL	Townhouse
031	Townhouse, in ownership development	MEDIUM-DENSITY RESIDENTIAL	Townhouse
032	Townhouse, in condominium development	MEDIUM-DENSITY RESIDENTIAL	Townhouse
033	Townhouse, in rental development	MEDIUM-DENSITY RESIDENTIAL	Townhouse
034	Multiplex (except duplex) in ownership development	MEDIUM-DENSITY RESIDENTIAL	Multi-family
035	Multiplex (except duplex) in ownership development	MEDIUM-DENSITY RESIDENTIAL	Multi-family
036	Multiplex (except duplex) in rental development	MEDIUM-DENSITY RESIDENTIAL	Multi-family

LUC	Detailed Land Use Description	Generalized Value	Sub Category
037	Combination of structure types, predominantly townh	MEDIUM-DENSITY RESIDENTIAL	Townhouse
039	Townhouse or mutiplex structures NEC, including co	MEDIUM-DENSITY RESIDENTIAL	Townhouse
092	Private open space with a planned development or	OPEN LAND, NOT FORSTED OR DEVELOPED	Private Open Space
093	Private open space, not in a planned development	OPEN LAND, NOT FORSTED OR DEVELOPED	Private Open Space
950	Permanent conservation areas	OPEN LAND, NOT FORSTED OR DEVELOPED	Private Open Space
971	Vacant land	OPEN LAND, NOT FORSTED OR DEVELOPED	Vacant Land
972	"Improved lands with dilapidated structure of no v	OPEN LAND, NOT FORSTED OR DEVELOPED	Vacant Land
990	Other resource uses and undeveloped are NEC	OPEN LAND, NOT FORSTED OR DEVELOPED	Vacant Land
423	Government leased low rise office	PUBLIC	Government/Institution
424	Government owned low rise office	PUBLIC	Government/Institution
433	Government leased medium or high rise office	PUBLIC	Office
434	Government owned medium or high rise office	PUBLIC	Government/Institution
630	Post offices	PUBLIC	Government/Institution
640	Police Stations	PUBLIC	Government/Institution
650	Fire and rescue stations	PUBLIC	Government/Institution
760	Places of public assembly	PUBLIC	Government/Institution
811	Private recreation facilities and parks outdoor	RECREATION	Private Open Space
812	Commercial recreation facilities and parks Outdoor	RECREATION	Private Open Space
813	Government owned open to public with or without fe	RECREATION	Public Recreation
821	Private recreation facilities INDOOR	RECREATION	Retail
822	Commercial recreation facilities and parks INDOOR o	RECREATION	Private Recreation
823	Government owned open to public without fee INDOO	RECREATION	Government/Institution
831	Private golf course	RECREATION	Private Recreation
832	Commercial golf course	RECREATION	Private Recreation
833	Government owned golf course	RECREATION	Private Recreation
841	OUTDOOR swimming pools (except HOA pools)	RECREATION	Private Recreation
842	INDOOR swimming pools (except HOA pools)	RECREATION	Private Recreation
850	Boating Marinas	RECREATION	Government/Institution
851	Condominium Boat slips	RECREATION	Government/Institution
094		RECREATION	
211	Railroad	UTILITIES	Government/Institution
212	Rail rapid transit	UTILITIES	Government/Institution
213	Bus	UTILITIES	Government/Institution
214	Motor freight transportation	UTILITIES	Industrial
215	Street and highway right-of-way	UTILITIES	Industrial

LUC	Detailed Land Use Description	Generalized Value	Sub Category
216	Auto parking	UTILITIES	Industrial
217	Air	UTILITIES	Government/Institution
218	Marine terminals	UTILITIES	Industrial
219	Other transportation NEC	UTILITIES	Industrial
221	Utilities, Electric	UTILITIES	Government/Institution
222	Utilities, Gas	UTILITIES	Government/Institution
223	Utilities, Water	UTILITIES	Government/Institution
224	Utilities, Sewage	UTILITIES	Government/Institution
225	Utilities, Solid waste disposal	UTILITIES	Government/Institution
226	Pipeline rights-of-way and pressure control station	UTILITIES	Government/Institution
229	Other Utilities	UTILITIES	Government/Institution
231	Telephone and telegraph	UTILITIES	Industrial
232	Radio and television	UTILITIES	Industrial
239	Other communications, NEC	UTILITIES	Industrial

Appendix B: Health and Safety Guidance for Floatables Monitoring Field Work

General

Health and safety responsibility and accountability involves every employee. The collective effort of all employees in providing a healthy and safe work environment will minimize or eliminate the potential for accidents. In general, field sampling will require the following safety protocol to protect the field staff:

1. Stormwater staff will sign in/out on the board near the administration staff.
2. Perform field work in teams of at least two.
3. Bring cell phone and first aid kit on all field site visits.
4. Exercise caution when encountering any wildlife and hazardous plants. In addition, many outfalls are located in remote areas that may be near gathering places for homeless or transient individuals. Do not enter a potentially hostile area.
5. Use common sense during electrical storms and/or when severe conditions (e.g., high wind, hail) develop. The safety of field staff overrides all other considerations.

Conduct

All field staff are expected to:

- Understand and comply with health and safety policies. Each employee is not only responsible and accountable for his/her own actions, but for those others around him/her.
- All employees shall show professional courtesy to fellow employees, clients, contractors, regulators, and visitors.
- Understand and follow good health and safety practices.
- Horseplay, practical joking, inattention to work or other inappropriate accident- causing behavior will not be tolerated.
- Smoking, eating, drinking and chewing shall be conducted only in designated areas.
- Use of alcohol or controlled substances is prohibited.
- While traveling to and from the job site, employees shall: obey all federal, state and local regulations regarding seat belt use, all traffic laws, and any other laws regarding proper conduct in public areas.

Personal protective equipment (PPE)

Fairfax County high visible vest shall be worn during all monitoring. All employees shall dress appropriately for the tasks to be performed. Specialized health and safety equipment, including personal protective equipment, monitoring equipment, and other devices designed to protect the employee shall be issued to the employee on an as-needed basis.

Dangerous flora and fauna

During the course of field activities, employees may come in contact with a wide range of dangerous or toxic animals and plants. Dangerous animals may include: black widow and brown recluse spiders; fire ants; mosquitoes and biting flies; bees, wasps and hornets; ticks and chiggers; microbial organisms (e.g., found in water, soil, and air and on carrier/host organisms); rabid mammals; and venomous snakes. Dangerous plants may include: thorny plants; poison ivy, oak, and sumac; and molds, mildews, and fungi (which may cause allergic reactions). Contact with these organisms can cause effects from

simple discomfort (such as from thorny bush scratches) to severe allergic reactions and possibly death. If interactions do occur, take appropriate actions related to specific interaction and individual response to interaction.

Unknown hazardous substances and wastes

The nature of environmental consulting often times requires the investigation of hazardous substances or wastes whose identity is not known. Because of the serious personal and environmental consequences of unintentional release of chemicals, very specific health and safety procedures must be implemented to monitor ambient conditions, mitigate releases to the environment, and protect workers from exposure. Most of these procedures dovetail with site investigation, sampling, and remediation techniques outlined by EPA policy and should be included in the project comprehensive work plan.

Bloodborne pathogens

Exposure to blood borne pathogens (BBP) is possible in the case of certain emergency situations. Personnel may be exposed to body fluids such as blood, saliva, vomit, mucus or others. These fluids could contain pathogens that have the potential for causing disease in humans. Should personnel be required to administer lifesaving procedures, such as CPR, the following procedures will be followed to minimize the potential for exposure:

1. Wear disposable gloves when hand contact with blood, mucus membranes, non-intact skin or other potentially infectious materials could be involved;
2. Use disposable mouthpieces, pocket masks or other ventilation devices for administering artificial ventilation;
3. Wash hands with soap and water after administering first aid;
4. In the case of eye contact, flush eyes using an eye wash for at least 15 minutes;
5. Remove garments contacted by blood or other body fluids as soon as possible;
6. Do not eat, drink, smoke or handle contact lenses in areas with possible BBP exposure; and
7. Persons cleaning up an accident scene should not pick up broken glass or other sharp objects by hand. All clothes and other items at the first aid scene should be safely secured prior to leaving.

Employees who may have been exposed to BBPs should report the incident at once.

Weather related hazards

Weather-related hazards include the potential for heat or cold stress, electrical storms, treacherous weather-related working conditions, high winds, and limited visibility. These hazards correlate with the season in which site activities occur. In the event of adverse weather conditions, the Field Team Leader will determine if work can continue without endangering the health and safety of site personnel.

Heat stress

Heat stress is a significant potential hazard during the warmer months. Heat stress manifests itself as one of three conditions: heat cramps, heat exhaustion, or heat stroke. Heat cramps are brought about by a prolonged exposure to heat. As an individual sweats, water and salts are lost by the body, triggering painful muscle cramps. The signs and symptoms of heat cramps include:

- Severe muscle cramps, usually in the legs and abdomen;
- Exhaustion, often to the point of collapse; and
- Dizziness or periods of faintness.

First aid treatment includes shade, rest, and fluid replacement. The individual will drink electrolyte-replacement fluids (e.g., Gatorade, Squencher, 10-K), which will be made available to field personnel. If the individual has not recovered within ½ hour, then he/she will be transported to the hospital for medical attention.

Heat exhaustion usually occurs in a healthy individual who has been exposed to excessive heat while working or exercising. Blood collects near the skin in an effort to rid the body of excess heat. The signs and symptoms of heat exhaustion include:

- Rapid and shallow breathing;
- Weak pulse;
- Cold and clammy skin, with heavy perspiration;
- Skin appears pale;
- Fatigue, weakness, and/or dizziness; and
- Elevated body temperature.

First aid treatment includes cooling the victim, elevating the feet, and replacing fluids. If the individual has not recovered within ½ hour, he/she will be transported to the hospital for medical attention.

Heat stroke occurs when an individual is exposed to excessive heat, and their body systems become overwhelmed by heat and begin to stop functioning. This condition is a medical emergency, requiring the immediate cooling of the victim and transport to the hospital immediately. The signs and symptoms of heat stroke include:

- Victim has stopped sweating;
- Dry, hot, red skin;
- Body temperature approaching or above 105° F;
- Dilated (large) pupils; and
- Loss of consciousness; victim may lapse into a coma.

Local weather conditions may produce an environment which will require restricted work schedules in order to protect employees. The Field Team Leader will observe workers for any potential symptoms of heat stress. Adaptation of work schedules and training in recognition of heat stress conditions will help prevent heat-related illnesses from occurring.

Cold stress

Cold stress is a danger at low temperatures and when the wind chill factor is low. Cold stress is generally described as a local cooling (frost nip, frost bite, and freezing) or a general cooling (hypothermia). Personnel working outdoors in temperatures at or below freezing may be subject to local cooling. Areas of the body that have a high surface area-to-volume ratio, such as fingers, toes, and ears, are the most susceptible. The three categories of local cooling include:

- Frost nip - characterized by a blanching or whitening of the skin;
- Frost bite - skin has a waxy or white appearance and is firm to the touch, but the tissue beneath is resilient; and
- Freezing - skin tissue is cold, pale, and solid.

Frost nip and frost bite first aid includes covering the affected area with warmth and retreating to a warm area. Frozen tissue is a medical emergency, and the victim will be transported to the hospital immediately.

General cooling (hypothermia) occurs when exposure to cold reduces body temperature. With prolonged exposure, the body becomes unable to maintain its proper internal temperature. Without treatment, hypothermia will lead to stupor, collapse, and death. The signs and symp- toms of mild hypothermia include:

- Shivering;
- Numbness; and
- Drowsiness.

First aid for mild hypothermia includes using heat to raise the individual's body temperature. Heat may be applied to the victim in the form of heat packs, hot water bottles, and blankets.

The signs and symptoms of severe hypothermia include:

- Unconsciousness;
- Slowed respiration or respiratory arrest;
- Slowed pulse or cardiac arrest;
- Irrational or stuporous state; and
- Muscular rigidity.

First aid for severe hypothermia includes handling the victim very gently; rough handling may set off an irregular heartbeat. Do not attempt to re-warm the severely hypothermic victim; re-warming may cause the development of an irregular heartbeat. Severe hypothermia is a medical emergency, and the victim will be transported to the hospital immediately.

Prevention of cold stress is a function of whole body protection. Adequate insulated clothing will be worn when the air temperature drops below 50 °F. Reduced work periods may be necessary in extreme conditions to allow adequate periods in a warm area.

Appendix C: Floatables Monitoring Field Data Sheet

Fairfax County MS4 Floatables Monitoring Survey Cover Page

Date	
Fiscal Quarter	
Date of Last Cleanup	
Total Precipitation in last 48 hours (inches)	
Crew Conducting Survey	
Reviewer Initials	
Start Time	
End Time	

Monitoring Site		
STORMNET #	**General Land Use**	**Check Site Monitoring is Being Conducted**
STMN0212404236	Low Density Residential	
STMN0402414843	Medium Density Residential	
STMN0791456509	High Density Residential	
STMN0293016090	Commercial	
STMN0583435398	Institutional	

General Site Description	
Total of Photos Taken	

Total Number of Observed Items	
Food & Beverage	
Household Items	
Recreation Equipment & Advertising	
Hazardous Materials	
Other Trash Items	
TOTAL	

Indicate total number of sheets for a given monitoring event and number of current sheet Page 1 of ___

Floatables Monitoring Program – DATA COLLECTION

Site: *Date:* *Photos Taken (Y/N):*

Name: *Reviewed by:*

DIRECTIONS:

- Add all tally sheets for each category and place category total count in colored box.
- Have reviewer check totals and sign at top.

FOOD & BEVERAGE **TOTAL:**	
Plastic Bags (SHOPPING):	
Plastic Bags (GARBAGE):	
Plastic Bags (OTHER):	
Wrappers:	
Water Bottles(PLASTIC):	
Other Beverage Bottles(PLASTIC):	
Glass Beverage Bottles:	
Beverage Cans:	
Disposable cups/lids/plates/cutlery/straws:	
Metal Food Cans:	
Fast Food To-Go Containers/Bags:	
Juice Boxes:	
Beverage Boxes/6-Pack Rings:	
Brands/Comments/Other:	
HOUSEHOLD ITEMS **TOTAL:**	
Boxes/Cardboard:	
Packing Materials:	
Clothing/Fabric/Carpeting:	
Misc. (PLASTIC, METAL, GLASS):	
Newspapers/Magazines:	
Hangers:	
Brands/Comments/Other:	
RECREATION EQUIPMENT & ADVERTISING TOTAL:	
Balls/ Toys/ Balloons:	
Fishing:	
Signs/Flyers:	
Brands/Comments/Other:	
HAZARDOUS MATERIALS: **TOTAL:**	
Smoking Products:	
Paint Cans:	
Medical Waste:	
Auto Chemicals and Parts:	
Bio-Waste:	
Brands/Comments/Other:	
OTHER TRASH ITEMS: **TOTAL:**	
Tires:	
Shopping Carts:	
Bikes:	
Furniture:	
Electronics/Appliances:	
Construction Debris:	
Intact Bricks	
Brands/Comments/Other:	

Indicate total number of sheets for a given monitoring event and number of current sheet Page ___ of ___

Floatables Monitoring Program – DATA COLLECTION

Site: *Date:* *Photos Taken (Y/N):*

Name: *Reviewed by:*

FOOD & BEVERAGE
Plastic Bags (SHOPPING): *grocery bags and department store bags; indicate brands below*
Plastic Bags (GARBAGE): *usually large black or clear bags*
Plastic Bags (OTHER): *newspaper bags, sandwich, quart and gallon size bags, dry cleaner bags, etc.*
Wrappers: *chip bags, candy wrappers, labels from bottles, bits of foil*
Water Bottles(PLASTIC):
Other beverage bottles(PLASTIC):
Glass Bottles: *count each collection of broken shards as one bottle; count partial bottle if mostly intact*
Beverage Cans: *soda, beer, etc.*
Disposable cups/lids/plates/cutlery/straws: *count straw separate from lid, lid separate from cup*
Metal Food Cans: *soup, canned meats, etc.*
Fast Food To-Go Containers/Bags: *note brand below*
Juice Boxes:
Beverage Boxes/6-Pack Rings:
Brands/Comments/Other: *Indicate locally traceable brands /Explain as needed/ Add count of unlisted items*
HOUSEHOLD ITEMS :
Boxes/Cardboard:
Packing Materials: ***count each large piece; Styrofoam; bubble wrap; and package bindings***
Clothing/Fabric/Carpeting: ***include shoes; count each large piece of fabric***
Misc. (PLASTIC, METAL, GLASS): ***include toiletry and cleaning product containers; bins; cookware; lids***
Newspapers/Magazines:
Hangers:
Brands/Comments/Other: ***indicate locally traceable brands /Explain as needed/ Add count of unlisted items***
RECREATION EQUIPMENT & ADVERTISING
Balls/Toys/ Balloons: *include bike parts and pieces of toys*
Fishing:
Signs/Flyers: *note origin below*
Brands/Comments/Other:
HAZARDOUS MATERIALS:
Smoking Products: *for large collections of cigarette butts, estimate number*
Paint Cans:
Medical Waste: *rubber tubing, rubber gloves, syringes, etc.*
Auto Chemicals and Parts: *containers from automotive chemical products; smaller auto parts not tires*
Bio-Waste: *dirty diapers, sanitary napkins, tampons, dog waste; count plastic bags separately above*
Brands/Comments/Other: *Indicate locally traceable brands /Explain as needed/ Add count of unlisted items*
OTHER TRASH ITEMS
Tires:
Shopping Carts:
Bikes:
Furniture:
Electronics/Appliances:
Construction Debris: *cinder blocks, large cement chunks, lumber etc.*
Intact Bricks: *Count mostly intact bricks*
Brands/Comments/Other: *Indicate locally traceable brands /Explain as needed/ Add count of unlisted items*

Indicate total number of sheets for a given monitoring event and number of current sheet Page ___ of ___

Fairfax County 2021 MS4 Program Plan and Annual Report

Appendix R1

FY 2022 Fairfax County Adopted Budget Plan
(Vol.2), Stormwater Services Budget

VSMP Permit Number VA0088587
9-30-2021

Fund 40100: Stormwater Services

Mission

To develop and maintain a comprehensive watershed and infrastructure management program to protect property, health, and safety; to enhance the quality of life; and to preserve and improve the environment for the benefit of the public. To plan, design, construct, operate, maintain, and inspect the infrastructure; perform environmental assessments through coordinated stormwater and maintenance programs in compliance with all government regulations utilizing innovative techniques, customer feedback and program review; and to be responsive and sensitive to the needs of the residents, customers, and public partners.

Focus

Stormwater Services are essential to protect public safety, preserve property values and support environmental mandates such as those aimed at protecting the Chesapeake Bay and the water quality of other local jurisdictional waterways. Projects in this fund include repairs to stormwater infrastructure, measures to improve water quality such as stream stabilization, rehabilitation, safety upgrades of state regulated dams, repair and rehabilitation of underground pipe systems, surface channels, flood mitigation, site retrofits and best management practices (BMP), and other stormwater improvements.

The Board of Supervisors approved a special service district to support the Stormwater Management Program as part of the FY 2010 Adopted Budget Plan. This service district provides a dedicated funding source for both operating and capital project requirements by levying a service rate per $100 of assessed real estate value, as authorized by Code of Virginia Ann. Sections 15.2-2400. Since FY 2010, staff has made significant progress in the implementation of watershed master plans, public outreach efforts, stormwater monitoring activities, water quality and flood mitigation project implementation and operational maintenance programs related to existing storm drainage infrastructure including stormwater conveyance, and regulatory requirements.

An ultimate rate of $0.0400 per $100 of assessed value has been estimated to be required to fully support the stormwater program in the future; however, staff is currently evaluating the long-term requirements for the program to address other community needs. Some of the additional community needs under evaluation include debt service to support the Board's approval of the dredging of Lake Accotink, the anticipation of additional flood mitigation requirements, and strengthening the role and financial support for the implementation of stormwater requirements associated with Fairfax County Public Schools sites under renovation. This enhanced program may require incremental changes to the rate over time and may result in a higher ultimate rate to fully support the program. Staff will be evaluating these requirements, as well as the staffing to support them, and analyzing the impact of increased real estate values and revenue projections.

One of the recent initiatives being funded by the Stormwater Fund is the new Public Works complex to consolidate functions and operations and maximize efficiencies between the Stormwater and Wastewater Divisions. Stormwater operations are currently conducted from various locations throughout the County, and a new colocation of both Stormwater and Wastewater staff will provide efficiencies and sharing of resources. Another initiative in progress is the planned dredging of Lake Accotink. Lake Accotink is a 55-acre lake surrounded by managed conservation areas, wetlands, deciduous and evergreen forests, and historic and prehistoric sites. Over 300,000 patrons visit the park annually to enjoy a variety of facilities and activities that vary with the season. Sediment from the upstream areas of the watershed has continued to be deposited in Lake Accotink over the years filling in the lake and limiting recreational use. The estimated cost for dredging including sediment disposal is $30,500,000. Staff has identified the option of a low interest loan via the Virginia Clean Water Revolving Loan Fund (VCWRLF) as the preferred funding mechanism to fund the dredging project costs. The Stormwater fund will pay the future debt costs.

While staff continues to further evaluate the impact of recent initiatives and the long-term requirements for the Stormwater Program, the FY 2022 rate will remain the same as the FY 2021 Adopted Budget Plan level of $0.0325 per $100 of assessed value. However, based on capital project costs and projected revenues, it is anticipated that in the next several years, incremental rate increases will be required based on continued growth of stormwater facilities and infrastructure that must be inspected and maintained by the County, the implementation of flood mitigation projects, and additional requirements in the forthcoming Municipal Separate Storm Sewer System (MS4) Permit. On an annual basis, staff will continue to evaluate the program, analyze future requirements, and develop Stormwater operational and capital resource needs.

The FY 2022 levy of $0.0325 will generate $87,175,738, supporting $24,450,324 for staff and operational costs; $61,600,414 for capital project implementation including, infrastructure reinvestment, regulatory requirements, dam safety, and contributory funding requirements; and $1,125,000 transferred to the General Fund to partially offset central support services such as Human Resources, Purchasing, Budget and other administrative services supported by the General Fund, which benefit this fund.

Stormwater Services Operational Support

Stormwater Services operational support includes funding for staff salaries, Fringe Benefits, and Operating Expenses for all stormwater operations. In addition, Fund 40100 includes positions related to transportation operations maintenance provided by the Maintenance and Stormwater Management Division. All funding for the transportation related salary expenses and equipment is recovered from General Fund Agency 87, Unclassified Administrative Expenses, Public Works Programs, and Capital Projects related to transportation located in Fund 30010, General Construction and Contributions, and Fund 30060, Pedestrian Walkway Improvements, as they do not qualify for expenses related to the stormwater service district.

Fund 40100 also supports the Urban Forestry Management Division (UFMD). The UFMD was established to mitigate tree loss and maximize tree planting during land development, enforce tree conservation requirements and monitor and suppress populations of Gypsy Moth, Emerald Ash Borer, and other forest pests. The division also implements programs needed to sustain the rich level of environmental, ecological, and socio-economic services provided by the County's tree canopy. The UFMD is aligned with the mission of Stormwater Services as it strives to "improve water quality and stormwater management through tree conservation." Tree canopy and forest soils function to mitigate significant levels of water pollution and stormwater runoff.

FY 2022 Stormwater Capital Project Support

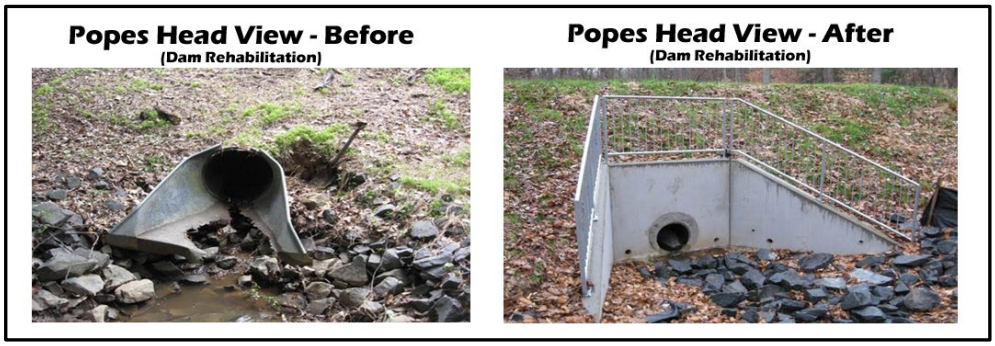
Regulatory Program

The County is required by federal law to operate under the conditions of a state issued MS4 Permit. Stormwater staff annually evaluates funding required to meet the increasing federal and state regulatory requirements pertaining to the MS4 Permit requirements, and State and Federal mandates associated with controlling water pollution delivered to local streams and the Chesapeake Bay. The MS4 Permit allows the County to discharge stormwater from its stormwater systems into state and federal waters. The County currently owns and/or operates approximately 15,000 outfalls, and 7,000 of these outfalls are regulated outfalls within the stormwater system that are governed by the permit. The current permit was issued to the County in April 2015. The permit requires the County to document the stormwater management facility inventory, enhance public outreach and education efforts, increase water quality monitoring efforts, provide stormwater management and stormwater control training to all County employees, and thoroughly document all of these enhanced efforts. The permit also requires the County to implement sufficient stormwater projects that will

reduce the nutrients and sediment delivered to the Chesapeake Bay in compliance with the Chesapeake Bay TMDL implementation plan adopted by the State. Funding in the amount of $4.0 million is included for the Stormwater Regulatory Program in FY 2022.

Dam Safety and Facility Rehabilitation

There are currently more than 2,400 stormwater management facilities in service that range in size from small rain gardens to large state regulated flood control dams. The County is responsible for inspecting both County owned and privately-owned facilities and for maintaining County owned facilities. This inventory increases annually and is projected to continually increase as new development and redevelopment sites occur in the County. This program maintains the control structures and dams that control and treat the water flowing through County owned facilities. This



program improves dam safety by supporting annual inspections of 20 state-regulated dams and the Huntington Levee and by developing Emergency Action Plans required by the state. The Emergency Action Plans are updated annually. In addition, these plans include annual emergency drills and exercises, and flood monitoring for each dam. This initiative also includes the removal of sediment that occurs in both wet and dry stormwater management facilities to ensure that adequate capacity is maintained to treat the stormwater. The program results in approximately 50 projects annually that require design and construction management activities as well as contract management and maintenance responsibilities. Total funding in the amount of $11.0 million is included for Dam Safety and Facility Rehabilitation in FY 2022, including $5.0 million for maintenance and $6.0 million for rehabilitation.

Conveyance System Inspections, Development and Rehabilitation

The County owns and operates approximately 1,500 miles of underground stormwater pipes and improved channels with an estimated replacement value of over one billion dollars. The County

began performing internal inspections of the pipes in FY 2006. The initial results showed that approximately 5 percent of the pipes exhibit conditions of failure, and an additional 5 percent required

maintenance or repair. MS4 Permit regulations require inspection and maintenance of these 1,500 miles of existing conveyance systems, 65,000 stormwater structures, and a portion of the immediate downstream channel at the 7,000 regulated pipe outlets. Acceptable industry standards indicate that one dollar reinvested in infrastructure saves seven dollars in the asset's life and 70 dollars if asset failure occurs. Once the initial internal inspections are complete, the goal of this program is to inspect pipes on a 20-year cycle and rehabilitate pipes and improve outfall channels before total failure occurs. Total funding in the amount of $9.0 million is included for Conveyance System Inspections, Development and Rehabilitation in FY 2022, including $2.0 million for inspections and development and $7.0 million for rehabilitation and outfall restoration.

Stream and Water Quality Improvements

This program funds water quality improvement projects necessary to mitigate the impacts to local streams and the Chesapeake Bay resulting from urban stormwater runoff. This includes water quality projects such as construction and retrofit of stormwater management ponds, implementation of low impact development techniques on stormwater facilities, stream restoration, and approximately

1,900 water quality projects identified in the completed Countywide Watershed Management Plans. This will aid in the reduction of bacteria, sediment, and Polychlorinated Biphenyl (PCB) entering local streams in order to comply with federal Clean Water Act (CWA) water quality standards. It is estimated that between 70 and 80 percent of the streams in the County are considered to be in fair to very poor condition and likely do not meet CWA water quality standards. In addition, TMDL requirements for local streams and the Chesapeake Bay are the regulatory drivers by which pollutants entering impaired water bodies are reduced. The Chesapeake Bay TMDL was established by the EPA and requires that MS4 communities as well as other dischargers implement measures to significantly reduce the nitrogen, phosphorous and sediment loads entering waters draining to the Chesapeake Bay by 2025. MS4 Permit holders must achieve 35 percent of the required reductions within the current five-year permit cycle and 60 percent of the required reductions in the next five-year permit cycle. In addition, compliance with the Chesapeake Bay TMDL requires that the County undertake construction of new stormwater facilities and retrofit existing facilities and properties. The EPA is currently updating the Chesapeake Bay compliance requirements and it is anticipated that the update will result in changes to both the assigned targets as well as how projects are credited, which will likely impact future compliance estimates. In addition to being required to meet the Chesapeake Bay TMDL targets, the current MS4 Permit requires the County to develop and implement action plans to address local impairments. Most of the 1,900 watershed management plan projects contribute toward achieving the Chesapeake Bay and local stream TMDL requirements. Funding in the amount of $26.0 million is included for Stream and Water Quality Improvements in FY 2022.

Emergency and Flood Response Projects
This program supports flood control projects for unanticipated flooding events that impact storm systems and structural flooding. The program provides annual funding for scoping, design, and construction activities related to flood mitigation projects. Funding in the amount of $5.0 million is included for the Emergency and Flood Response Projects in FY 2022.

Stormwater Allocation to Towns
On April 18, 2012, the State Legislature passed SB 227, which entitles the Towns of Herndon and Vienna to all revenues collected within their boundaries by Fairfax County's stormwater service district. An agreement was developed for a coordinated program whereby the Towns remain part of the County's service district and the County returns 25 percent of the revenue collected from properties within each town. This allows for the Towns to provide services independently such as maintenance and operation of stormwater pipes, manholes, and catch basins. The remaining 75 percent remains with the County and the County takes on the responsibility for the Towns' Chesapeake Bay TMDL requirements as well as other TMDL and MS4 requirements. This provides for an approach that is based on watersheds rather than on jurisdictional lines. Funding in the amount of $0.9 million is included for the Stormwater Allocations to Towns project in FY 2022.

Stormwater-Related Contributory Program
Contributory funds are provided to the Northern Virginia Soil and Water Conservation District (NVSWCD) and the Occoquan Watershed Monitoring Program (OWMP). The NVSWCD is an independent subdivision of the Commonwealth of Virginia that provides leadership in the conservation and protection of Fairfax County's soil and water resources. It is governed by a five-member Board of Directors - three members are elected every four years by the voters of Fairfax County and two members are appointed by the Virginia Soil and Water Conservation Board. Accordingly, the work of NVSWCD supports many of the environmental efforts set forth in the Board of Supervisors' Environmental Excellence 20-year Vision Plan. The goal of the NVSWCD is to continue to improve the quality of the environment and general welfare of the citizens of Fairfax County by providing them with a means of dealing with soil, water conservation and related natural resource problems. It provides County agencies with comprehensive environmental evaluations for proposed land use changes with particular attention to the properties of soils, erosion potential, drainage, and the impact on the surrounding environment. NVSWCD has consistently been able to create partnerships and leverage state, federal and private resources to benefit natural resources protection in Fairfax County. FY 2022 funding of $0.6 million is included in Fund 40100 for the County contribution to the NVSWCD.

The OWMP and the Occoquan Watershed Monitoring Laboratory (OWML) were established to ensure that water quality is monitored and protected in the Occoquan Watershed. Given the many diverse uses of the land and water resources in the Occoquan Watershed (agriculture, urban residential development, commercial and industrial activity, water supply, and wastewater disposal), the OWMP plays a critical role as the unbiased interpreter of basin water quality information. FY 2022 funding of $0.2 million is included in Fund 40100 for the County contribution to the OWMP.

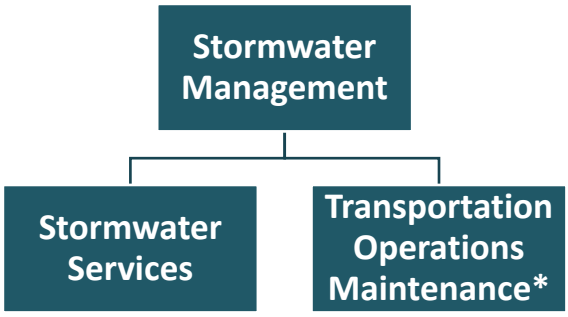
Stormwater/Wastewater Facility
This project will provide funding for a Public Works complex to consolidate functions and operations and maximize efficiencies between the Stormwater and Wastewater Divisions. The current Stormwater program operations are conducted from various locations throughout the County, with the majority of staff at the West Drive facility. Current facilities for field maintenance operations and for field/office-based staff are inadequate and outdated for the increased scope of the stormwater program, and inadequate to accommodate future operations. This project is currently in design with construction anticipated to begin in summer 2021. It is anticipated that the facility will be financed

by EDA bonds with the Stormwater Services Fund and Wastewater Fund supporting the debt service. Funding in the amount of $5.0 million is included in FY 2022 to support the first year of debt service for the Stormwater/Wastewater Facility.

Pandemic Response and Impact

The Department of Public Works and Environmental Services' mission includes several essential and legally mandated services for the protection of public health and safety that are executed through field operations. All these essential services have remained operational from the initiation of the COVID-19 pandemic response. These include solid waste collections, transfer, and disposal; stormwater management and facility maintenance; and wastewater collections and treatment. Other parts of the department have continued to work at full capacity through vastly augmented telework schedules while also continuing to carry out their field duties such as construction inspections, stream and dam monitoring, and facility inspections. All of these activities have required considerable innovation, hard work, and adaptation (e.g., additional personal protective equipment, facility cleaning, distancing measures, equipment, and new tools) that have increased resource requirements. Planning and monitoring are ongoing to address the phased public access reopening of the County facilities while sustaining operations under public health measures to reduce the spread and consequences of the COVID-19 pandemic.

Organizational Chart



*Denotes functions that are included in both the General Fund, Agency 87, Unclassified Administrative Expenses, and Fund 40100, Stormwater Services.

Budget and Staff Resources

Category	FY 2020 Actual	FY 2021 Adopted	FY 2021 Revised	FY 2022 Advertised	FY 2022 Adopted
FUNDING					
Personnel Services				$22,405,602	$22,615,643
Operating Expenses				3,182,636	3,182,636
				782,000	782,000
Capital Projects				61,810,455	61,600,414
Subtotal	**$86,301,879**	**$86,094,931**	**$258,044,417**	**$88,180,693**	**$88,180,693**
Less:					
Recovered Costs	($1,845,248)	($2,129,955)	($2,129,955)	($2,129,955)	($2,129,955)
Total Expenditures	**$84,456,631**	**$83,964,976**	**$255,914,462**	**$86,050,738**	**$86,050,738**
AUTHORIZED POSITIONS/FULL-TIME EQUIVALENT (FTE)					
Regular	202 / 202	202 / 202	202 / 202	200 / 200	200 / 200

FY 2022 Funding Adjustments

The following funding adjustments from the FY 2021 Adopted Budget Plan are necessary to support the FY 2022 program. Included are all adjustments recommended by the County Executive that were approved by the Board of Supervisors, as well as any additional Board of Supervisors' actions, as approved in the adoption of the Budget on May 4, 2021.

Employee Compensation **$210,041**
An increase of $210,041 in Personnel Services is included for a 1.00 percent market rate adjustment (MRA) for all employees effective July 2021.

Position Adjustment **$0**
In order to better support the Department of Public Works and Environmental Services' (DPWES) four core business areas and enhance department-wide initiatives, 2/2.0 FTE positions are transferred from Fund 40100, Stormwater Services, to Agency 25, Business Planning and Support, in FY 2022. These positions will continue to be funded by Fund 40100 through cost distribution in FY 2022. This adjustment is part of the second phase of the IT consolidation in Agency 25. There is no funding impact for Agency 25 and Fund 40100.

Other Post-Employment Benefits **$46,198**
An increase of $46,198 in Personnel Services reflects required adjustments associated with providing Other Post-Employment Benefits (OPEBs) to retirees, including the Retiree Health Benefits Subsidy. For more information on Other Post-Employment Benefits, please refer to Fund 73030, OPEB Trust, in Volume 2 of the FY 2022 Adopted Budget Plan.

Capital Equipment **($572,000)**
Funding of $782,000 in Capital Equipment, a decrease of $572,000 from the FY 2021 Adopted Budget Plan, is included primarily associated with replacement equipment that has outlived its useful life and is critical to stormwater services activities. Replacement equipment includes: $385,000 to replace a heavy construction class track loader; $60,000 to replace two mini walk-behind track loaders; $60,000 to replace a backhoe loader; $24,000 to replace two equipment trailers to excavate work sites, load trucks with bulk material and move heavy objects to support emergency response projects; $165,000 to replace a dump truck that supports all maintenance and emergency response programs by transporting large loads such as snow treatment chemicals and other bulk construction materials and support snow removal operations by being outfitted with a snow plow and a chemical spreader; $65,000 to replace an enclosed water pump that supports flood response requirements in the Belleview and Huntington tidal influenced areas of the County; and $3,000 to replace a flat bottom Jon boat to access and perform maintenance on riser structures offshore at dam sites. New equipment includes $20,000 for the purchase of a wireless pole camera to conduct condition assessment inspections at closed storm structures.

Capital Projects **$2,401,523**
Funding of $61,600,414 in Capital Projects, an increase of $2,401,523 from the FY 2021 Adopted Budget Plan, has been included in FY 2022 for priority stormwater capital projects. This funding will also support 5/5.0 FTE new positions that will be created in Agency 26, Office of Capital Facilities, to address growing workload requirements associated with planned Stormwater projects in the CIP.

Changes to FY 2021 Adopted Budget Plan

The following funding adjustments reflect all approved changes in the FY 2021 Revised Budget Plan since passage of the FY 2021 Adopted Budget Plan. Included are all adjustments made as part of the FY 2020 Carryover Review, FY 2021 Mid-Year Review, FY 2021 Third Quarter Review, and all other approved changes through April 30, 2021.

Carryover Adjustments **$172,897,414**

As part of the *FY 2020 Carryover Review*, the Board of Supervisors approved funding of $172,897,414 based on the carryover of unexpended project balances in the amount of $81,637,417 and a net adjustment of $91,259,997. This adjustment includes the carryover of $949,982 in operating and capital equipment encumbrances and an increase to capital projects of $90,310,015. The adjustment to capital projects is based on the appropriation of bond funding of $88,000,000 to support the construction of the new Stormwater/Wastewater facility at Freds Oak, the remaining operational savings of $1,609,436, miscellaneous revenues received in FY 2020 in the amount of $169,155, higher than anticipated revenues of $449,624, an amount of $81,000 to support the Paul Springs Stream Restoration project at Hollin Hills and revenues of $800 collected through the land development process that will support tree preservation and planting projects in FY 2021.

Third Quarter Adjustments **$0**

As part of the *FY 2021 Third Quarter Review*, the Board of Supervisors approved an increase of $189,465 in Personnel Services for a one-time compensation adjustment of $1,000 for merit employees and $500 for non-merit employees paid in May 2021. This funding was reallocated from Capital Projects.

Position Detail

The FY 2022 Adopted Budget Plan includes the following positions:

STORMWATER SERVICES 200 Positions			
Maintenance and Stormwater Management (MSMD) Administration			
1	Director, Maintenance and SW	1	Safety Analyst I
1	HR Generalist II	1	Administrative Assistant IV
1	HR Generalist I	4	Administrative Assistants III
1	Safety Analyst II		
IT – Director's Office/Stormwater			
0	Network/Telecom. Analysts II [-1T]	0	Information Technology Techs. III [-1T]
1	Network/Telecom. Analyst I		
Finance – Wastewater and Stormwater			
1	Financial Specialist IV	1	Financial Specialist I
1	Financial Specialist II	1	Administrative Assistant III
Contracting Services/Material Support			
1	Material Mgmt. Specialist III	1	Financial Specialist II
2	Contract Analysts I	1	Inventory Manager
Dam Safety and Maintenance Projects/Projects and LID/Inspection and Maintenance			
1	Public Works-Env. Serv. Manager	4	Engineering Technicians III
1	Engineer IV	2	Engineering Technicians II
1	Senior Engineer III	1	Project Manager II
3	Engineers III	2	Project Managers I
1	Ecologist III	1	Assistant Project Manager
1	Ecologist II		
Field Operations			
2	Env. Services Supervisors	11	Motor Equipment Operators
1	Public Works-Env. Serv. Manager	3	Masons
1	Public Works-Env. Bus. Operations	1	Vehicle Maintenance Coordinator
2	Public Works-Env. Serv. Specialists	5	Engineering Technicians III
7	Senior Maintenance Supervisors	1	Engineering Technician II
6	Maintenance Supervisors	1	Carpenter II

Field Operations	
Stormwater Infrastructure Branch	
Transportation Infrastructure Branch	
Stormwater Planning Division	
	Emergency Mgmt. Specialist III
	Code Specialists II
	Financial Specialist II
	Financial Specialist I
	Assistant Contract Specialist
	Administrative Assistants III
Urban Forestry	
	Administrative Assistant II

Performance Measurement Results

The objective to receive no MS4 Permit violations related to inspection and maintenance of public and private stormwater management facilities was met in FY 2018, FY 2019, and FY 2020. It is expected that this objective will also be met in FY 2021 and FY 2022. It should be noted that a new five-year MS4 Permit will be obtained in FY 2021. The objective to update 100 percent of the emergency action plans that Stormwater is responsible for was met in prior years. It is estimated that this trend will continue in both FY 2021 and FY 2022. Lastly, the objective to keep 100 percent of the commuter facilities operational for 365 days was met in prior years. It is expected that this goal will be met in FY 2021 and FY 2022.

Indicator	FY 2018 Actual	FY 2019 Actual	FY 2020 Estimate	FY 2020 Actual	FY 2021 Estimate	FY 2022 Estimate
MS4 permit violations received	0	0	0	0	0	0
Percent of Emergency Action Plans current	100%	100%	100%	100%	100%	100%
Percent of commuter facilities available 365 days per year	100%	100%	100%	100%	100%	100%

A complete list of performance measures can be viewed at
https://www.fairfaxcounty.gov/budget/fy-2022-adopted-performance-measures-pm

FUND STATEMENT

Category	FY 2020 Actual	FY 2021 Adopted Budget Plan	FY 2021 Revised Budget Plan	FY 2022 Advertised Budget Plan	FY 2022 Adopted Budget Plan
Beginning Balance	**$80,801,794**	**$0**	**$78,402,156**	**$6,939**	**$6,939**
Revenue:					
Stormwater Service District Levy	$82,403,834	$85,089,976	$85,089,976	$87,175,738	$87,175,738
Sale of Bonds[1]	0	0	88,000,000	0	0
Stormwater Local Assistance Fund (SLAF) Grant[2]	608,204	0	5,473,269	0	0
Tree Preservation/Planting Fund[3]	800	0	0	0	0
Miscellaneous	169,155	0	81,000	0	0
Total Revenue	**$83,181,993**	**$85,089,976**	**$178,644,245**	**$87,175,738**	**$87,175,738**
Total Available	**$163,983,787**	**$85,089,976**	**$257,046,401**	**$87,182,677**	**$87,182,677**
Expenditures:					
Personnel Services	$19,642,065	$22,359,404	$21,548,869	$22,405,602	$22,615,643
Operating Expenses	3,900,111	3,182,636	4,272,149	3,182,636	3,182,636
Recovered Costs	(1,845,248)	(2,129,955)	(2,129,955)	(2,129,955)	(2,129,955)
Capital Equipment	1,044,497	1,354,000	2,214,469	782,000	782,000
Capital Projects	61,715,206	59,198,891	230,008,930	61,810,455	61,600,414
Total Expenditures	**$84,456,631**	**$83,964,976**	**$255,914,462**	**$86,050,738**	**$86,050,738**
Transfers Out:					
General Fund (10001)[4]	$1,125,000	$1,125,000	$1,125,000	$1,125,000	$1,125,000
Total Transfers Out	**$1,125,000**	**$1,125,000**	**$1,125,000**	**$1,125,000**	**$1,125,000**
Total Disbursements	**$85,581,631**	**$85,089,976**	**$257,039,462**	**$87,175,738**	**$87,175,738**
Ending Balance[5,6]	**$78,402,156**	**$0**	**$6,939**	**$6,939**	**$6,939**
Tax Rate Per $100 of Assessed Value	**$0.0325**	**$0.0325**	**$0.0325**	**$0.0325**	**$0.0325**

[1] In FY 2021, an amount of $88 million in Economic Development Authority (EDA) Bonds was projected to be issued to support the construction of a Public Works complex to consolidate functions and operations and maximize efficiencies between the Stormwater and Wastewater Divisions.

[2] Represents previously approved Virginia Department of Environmental Quality (VDEQ) Stormwater Local Assistance Fund (SLAF) grants to support stream and water quality improvement projects. An amount of $608,204 was received in FY 2020 and an amount of $5,473,269 is anticipated in FY 2021 and beyond.

[3] Reflects revenues collected through the land development process that will support tree preservation and planting projects in FY 2021.

[4] Funding in the amount of $1,125,000 is transferred to the General Fund to partially offset central support services supported by the General Fund, which benefit Fund 40100. These indirect costs include support services such as Human Resources, Purchasing, Budget and other administrative services.

[5] Capital projects are budgeted based on the total project costs. Most projects span multiple years, from design to construction completion. Therefore, funding for capital projects is carried forward each fiscal year, and ending balances fluctuate, reflecting the carryover of these funds.

[6] The ending balance of $6,939 is due to an FY 2020 audit adjustment.

SUMMARY OF CAPITAL PROJECTS

Project	Total Project Estimate	FY 2020 Actual Expenditures	FY 2021 Revised Budget	FY 2022 Advertised Budget Plan	FY 2022 Adopted Budget Plan
Total	**$638,354,271**	**$61,715,206.49**	**$230,008,930.24**	**$61,810,455**	**$61,600,414**

Fairfax County 2021 MS4 Program Plan and Annual Report

Appendix R2

List of All County Lands and Applicable Acreage on Which Nutrients Are Applied to More Than One Contiguous Acre and Status of Implementation of Nutrient Management Plans

VSMP Permit Number VA0088587
9-30-2021

NMP Annual Report - Appendix R2

# of Facilities/Fields:	186	
Total Acreage:	1,124.40	acres
Acreage Covered:	1,124.40	acres
Percent Covered:	100.00%	

Facility	NMP ID	Field Name	Acres	Longitude	Latitude	NMP Completed
Pleasant Valley GC	NMP-233-601	<Null>	76.50	-77.475907	38.887639	Y
Willow Springs ES	NMP-302-163	<Null>	1.30	-77.37866	38.832159	Y
Alabama Drive Park	NMP-014-520	Field #3	1.41	-77.3999	38.967944	Y
Alabama Drive Park	NMP-014-329	Field #1	1.48	-77.399797	38.969464	Y
Annandale HS	NMP-018-171	Field #1	2.41	-77.211097	38.822653	Y
Arrowhead Park	NMP-021-289	Field #2	1.25	-77.406036	38.847838	Y
Baron Cameron Park	NMP-023-333	Field #1	1.15	-77.336118	38.97398	Y
Baron Cameron Park	NMP-023-334	Field #6	1.25	-77.337168	38.974899	Y
Baron Cameron Park	NMP-023-523	Field #4	1.28	-77.336151	38.977402	Y
Baron Cameron Park	NMP-023-292	Field #2	1.58	-77.336412	38.975022	Y
Baron Cameron Park	NMP-023-330	Field #3	1.58	-77.336605	38.97604	Y
Baron Cameron Park	NMP-023-335	Field #9	1.59	-77.337813	38.977711	Y
Baron Cameron Park	NMP-023-336	Field #10	1.66	-77.338678	38.9776	Y
Baron Cameron Park	NMP-023-522	Field #7	1.68	-77.337408	38.976138	Y
Beulah Park	NMP-027-414	Field #1	1.33	-77.1558	38.761564	Y
Beulah Park	NMP-027-413	Field #2	1.64	-77.155399	38.761003	Y
Blake Lane Park	NMP-028-273	Field #2	1.83	-77.293695	38.875841	Y
Braddock Park	NMP-031-489	Field #2	1.58	-77.410917	38.828027	Y
Braddock Park	NMP-031-488	Field #1	1.62	-77.410607	38.829057	Y
Braddock Park	NMP-031-548	Field #5	1.63	-77.407253	38.827395	Y
Braddock Park	NMP-031-484	Field #3	1.65	-77.408726	38.826475	Y
Braddock Park	NMP-031-485	Field #4	1.65	-77.408523	38.827116	Y
Braddock Park	NMP-031-487	Field #6	1.67	-77.407822	38.8283	Y
Bucknell Manor Park	NMP-036-415	Fields #1 & #2	2.67	-77.07049	38.770263	Y
Bull Run ES	NMP-037-090	<Null>	1.17	-77.474513	38.827679	Y
Burke Center	NMP-038-113	<Null>	1.36	-77.277634	38.783122	Y
Burke Lake GC	NMP-039-300	<Null>	54.12	-77.308956	38.764592	Y
Canterbury Woods ES	NMP-044-156	<Null>	1.80	-77.249664	38.819565	Y
Centre Ridge ES	NMP-049-210	<Null>	1.21	-77.447276	38.825763	Y
Centreville HS	NMP-051-173	Field #1	2.39	-77.40886	38.825262	Y
Chandon Park	NMP-052-525	Field #1	1.14	-77.397284	38.959324	Y
Clarks Crossing Park	NMP-058-526	Fields #1 & #2	2.79	-77.287201	38.922076	Y
Clermont Park	NMP-061-417	Field #4	1.60	-77.104558	38.793001	Y
Coates ES	NMP-063-320	<Null>	2.03	-77.420248	38.952459	Y
Colin Powell ES	NMP-064-354	<Null>	1.14	-77.407891	38.846786	Y
Collingwood Park	NMP-065-423	Fields #1 & #3	1.79	-77.05207	38.735141	Y
Collingwood Park	NMP-065-422	Fields #2 & #4	2.55	-77.053392	38.735284	Y
Colvin Run ES	NMP-067-386	Field #2	1.10	-77.266035	38.947623	Y
Colvin Run ES	NMP-067-375	Field #1	1.13	-77.265526	38.947274	Y

Facility	NMP ID	Field Name	Acres	Longitude	Latitude	NMP Completed
Crossfield ES	NMP-070-430	<Null>	1.50	-77.361018	38.915095	Y
Cub Run ES	NMP-071-442	Fields #3 & #4	1.68	-77.458124	38.864442	Y
Cunningham Park	NMP-072-353	Field #1 & #2	1.81	-77.251013	38.891602	Y
Dowden Terrace Park	NMP-077-387	Field #1	1.08	-77.128161	38.840705	Y
Dulles Corner Park	NMP-079-527	Field #1	1.99	-77.427556	38.951922	Y
Dunn Loring Center	NMP-080-540	<Null>	1.49	-77.227642	38.896384	Y
E.C. Lawrence Park	NMP-081-496	Field #6	1.42	-77.438654	38.861004	Y
E.C. Lawrence Park	NMP-081-290	Field #1	1.67	-77.435859	38.857458	Y
E.C. Lawrence Park	NMP-081-291	Field #4	1.84	-77.438446	38.858816	Y
Eakin Community Park	NMP-083-388	Fields #1 & #2	2.68	-77.239882	38.852091	Y
Edison HS	NMP-085-177	Field #1	2.22	-77.13158	38.780876	Y
Elklick Preserve	NMP-999-009	Field #1	14.00	-77.495545	38.859733	Y
Elklick Preserve	NMP-999-010	Field #2	25.00	-77.495545	38.859733	Y
Elklick Preserve	NMP-999-011	Field #3	15.00	-77.495545	38.859733	Y
Falls Church HS	NMP-090-233	Field #1	1.63	-77.209376	38.862399	Y
Flint Hill ES	NMP-091-611	Field #1	1.38	-77.286057	38.896628	Y
Franconia District	NMP-100-426	Field #1	1.53	-77.162936	38.789134	Y
Franconia District	NMP-100-427	Field #2	1.58	-77.162709	38.789854	Y
Franconia District	NMP-100-313	Field #3	1.67	-77.162362	38.787998	Y
Franklin Farm Park	NMP-102-324	Field #2	1.00	-77.415904	38.912207	Y
Franklin MS	NMP-103-650	<Null>	1.60	-77.422018	38.906398	Y
Fred Crabtree Park	NMP-105-295	Field #3	1.75	-77.361359	38.912548	Y
Freedom Hill ES	NMP-106-653	<Null>	1.19	-77.228785	38.910971	Y
Grand Hampton	NMP-112-616	Field #1	1.38	-77.360699	39.006375	Y
Great Falls Grange	NMP-114-617	<Null>	1.53	-77.287295	38.999138	Y
Great Falls Grange	NMP-114-618	Field #1 & #2	1.65	-77.285119	38.99918	Y
Great Falls Nike	NMP-115-296	Field #8	1.42	-77.32859	38.991753	Y
Great Falls Nike	NMP-115-537	Field #7	1.59	-77.328709	38.990495	Y
Great Falls Nike	NMP-115-535	Field #5	2.15	-77.325422	38.990531	Y
Greenbriar Park	NMP-117-325	Field #4	1.16	-77.404562	38.867092	Y
Greenbriar Park	NMP-117-500	Field #3	1.38	-77.403547	38.866937	Y
Greenbriar Park	NMP-117-502	Fields #1 & #6	2.33	-77.404997	38.865519	Y
Greendale GC*	NMP-119-302	<Null>	60.50	-77.121413	38.773088	Y
Grist Mill Park	NMP-120-281	Field #6	1.55	-77.113689	38.709874	Y
Grist Mill Park	NMP-120-432	Field #3	2.09	-77.11509	38.710881	Y
Grist Mill Park	NMP-120-431	Field #4	2.61	-77.116528	38.709522	Y
GW RecCenter	NMP-124-314	Field #2	1.34	-77.09904	38.728869	Y
GW RecCenter	NMP-124-315	Field #1	1.61	-77.100073	38.729044	Y
Hayfield SS	NMP-128-183	Field #1	2.53	-77.141143	38.751867	Y
Herndon ES	NMP-129-011	<Null>	1.25	-77.374875	38.975525	Y
Herndon HS	NMP-130-610	Field #1	1.97	-77.37533	38.988213	Y
Hooes Road Park	NMP-135-284	Field #4	1.32	-77.193252	38.76131	Y
Hooes Road Park	NMP-135-460	Field #2	1.57	-77.192712	38.762281	Y
Hooes Road Park	NMP-135-283	Field #3	1.77	-77.193554	38.762205	Y
Hooes Road Park	NMP-135-461	Field #1	2.11	-77.191708	38.763635	Y
Howery Park	NMP-136-390	Fields #1 & #4	1.75	-77.232477	38.811715	Y
Idylwood Park	NMP-144-355	Field #1	1.27	-77.212985	38.890581	Y

Facility	NMP ID	Field Name	Acres	Longitude	Latitude	NMP Completed
Jefferson GC	NMP-147-351	<Null>	43.23	-77.215176	38.879561	Y
Jefferson HS	NMP-148-206	Field #1	2.25	-77.169125	38.820276	Y
Key MS	NMP-153-041	Field #2	1.06	-77.160616	38.781366	Y
Key MS	NMP-153-042	Field #1	1.67	-77.162258	38.781934	Y
Kilmer MS	NMP-154-044	Field #2	1.01	-77.224872	38.905942	Y
Kilmer MS	NMP-154-043	Field #1	1.67	-77.223932	38.905639	Y
Lake Braddock Park	NMP-160-286	Field #2	1.43	-77.270692	38.807549	Y
Lake Braddock Park	NMP-160-285	Field #1	1.83	-77.270869	38.806496	Y
Lake Braddock SS	NMP-161-184	Field #1	2.53	-77.262891	38.803775	Y
Lake Fairfax Park	NMP-162-538	Field #5	1.40	-77.319338	38.959211	Y
Lake Fairfax Park	NMP-162-541	Field #3	1.44	-77.318961	38.957455	Y
Lake Fairfax Park	NMP-162-297	Field #2	1.67	-77.318791	38.956266	Y
Lake Fairfax Park	NMP-162-338	Field #7	1.69	-77.320355	38.961061	Y
Lake Fairfax Park	NMP-162-339	Field #6	1.69	-77.31998	38.960045	Y
Lake Fairfax Park	NMP-162-337	Fields #8 & #9	14.26	-77.312071	38.960952	Y
Lakeside Park	NMP-165-463	Fields #1 & #2	1.94	-77.285558	38.806022	Y
Langley Fork Park	NMP-167-360	Field #2	1.22	-77.154455	38.947321	Y
Langley Fork Park	NMP-167-359	Field #1	1.44	-77.154451	38.946526	Y
Langley Fork Park	NMP-167-305	Field #3	1.59	-77.155231	38.94831	Y
Langley Fork Park	NMP-167-274	Field #4	1.78	-77.152326	38.94662	Y
Langley HS	NMP-168-237	Field #1	1.05	-77.166256	38.952791	Y
Langley HS	NMP-168-609	Field #1	2.05	-77.16446	38.951303	Y
Larry Graves Park	NMP-170-306	Field #1	1.69	-77.170319	38.876621	Y
Laurel Hill GC	NMP-172-303	<Null>	81.00	-77.246896	38.714386	Y
Laurel Hill Park	NMP-173-465	Field #3	4.14	-77.233801	38.711195	Y
Lee District RecCenter	NMP-175-439	Field #3	1.02	-77.104792	38.776269	Y
Lee District RecCenter	NMP-175-436	Fields #2 & #7	2.38	-77.10406	38.774179	Y
Lee District RecCenter	NMP-175-437	Fields #1 & #6	2.40	-77.104003	38.775201	Y
Lee HS	NMP-177-186	Field #1	2.32	-77.170356	38.778687	Y
Leis Center	NMP-179-054	<Null>	1.59	-77.202873	38.85668	Y
Lewinsville Park	NMP-181-307	Field #4	1.80	-77.191947	38.929268	Y
Lewinsville Park	NMP-181-363	Field #3	1.84	-77.191255	38.92749	Y
Madison HS	NMP-192-187	Field #1	2.29	-77.279657	38.897537	Y
Manchester Lakes Park	NMP-193-282	Field #1	1.57	-77.150369	38.769226	Y
Manchester Lakes Park	NMP-193-316	Field #2	1.66	-77.149244	38.769453	Y
Marshall HS	NMP-195-188	Field #1	2.45	-77.21228	38.904245	Y
Marshall Road ES	NMP-196-074	Field #1	1.94	-77.265136	38.881881	Y
Mason District Park	NMP-198-308	Field #4	1.42	-77.171798	38.835217	Y
Mason District Park	NMP-198-393	Field #2	1.49	-77.172236	38.834183	Y
Mason Neck West Park	NMP-199-443	Field #1	1.05	-77.227999	38.676382	Y
McLean HS	NMP-200-190	<Null>	1.93	-77.185808	38.921557	Y
McLean HS	NMP-200-607	Field #1	2.27	-77.184599	38.92221	Y
McLean Youth Soccer	NMP-201-349	<Null>	2.35	-77.230769	38.937766	Y
McNaughton Park	NMP-203-444	Field #4	1.17	-77.128996	38.729779	Y
McNaughton Park	NMP-203-445	Field #3	1.98	-77.129361	38.728542	Y
MLK Jr Park	NMP-204-448	Fields #1 & #2	2.56	-77.083158	38.737515	Y
Mt Vernon HS	NMP-210-214	Field #1	2.46	-77.092659	38.724756	Y

Facility	NMP ID	Field Name	Acres	Longitude	Latitude	NMP Completed
Muddy Hole Park	NMP-212-317	Field #2	1.53	-77.113852	38.742564	Y
Newington Heights Park	NMP-215-288	Field #1	1.87	-77.23807	38.72547	Y
North Springfield ES	NMP-216-086	<Null>	1.48	-77.207267	38.802468	Y
Nottoway Park	NMP-217-368	Field #2	1.41	-77.277544	38.88412	Y
Nottoway Park	NMP-217-369	Field #3	1.65	-77.277317	38.883026	Y
Nottoway Park	NMP-217-371	Field #6	2.83	-77.272985	38.88309	Y
Oak Marr GC	NMP-219-350	<Null>	52.71	-77.314251	38.878431	Y
Oakton HS	NMP-222-247	Field #2	1.26	-77.280897	38.88101	Y
Oakton HS	NMP-222-191	Field #1	2.22	-77.281933	38.881068	Y
Olney Park	NMP-224-373	Fields #1 & #2	1.23	-77.192076	38.915148	Y
Pine Ridge Park	NMP-230-279	Field #5	1.84	-77.22813	38.852954	Y
Pinecrest GC	NMP-232-352	<Null>	29.50	-77.16394	38.828089	Y
Pohick Estates Park	NMP-236-450	Field #1	1.08	-77.20007	38.71933	Y
Popes Head Park	NMP-237-470	Field #1	1.61	-77.350195	38.814511	Y
Popes Head Park	NMP-237-469	Field #2	1.67	-77.34959	38.813811	Y
Popes Head Park	NMP-237-468	Field #3	1.71	-77.34892	38.813233	Y
Poplar Ford Park	NMP-999-002	Filed #2	2.70	-77.504770	38.83675	Y
Poplar Ford Park	NMP-999-003	Field #3	3.20	-77.504770	38.83675	Y
Poplar Ford Park	NMP-999-004	Field #4	1.60	-77.504770	38.83675	Y
Poplar Ford Park	NMP-999-005	Field #5	1.50	-77.504770	38.83675	Y
Poplar Tree Park	NMP-239-511	Field #1	1.51	-77.407496	38.859947	Y
Poplar Tree Park	NMP-239-514	Field #4	1.64	-77.411097	38.859836	Y
Poplar Tree Park	NMP-239-507	Field #5	2.05	-77.410618	38.860952	Y
Reston North Park	NMP-243-544	Field #2	2.04	-77.35326	38.970305	Y
Riverbend	NMP-999-012	Park Meadow; RB1	2.20	-77.252108	39.019966	Y
Robinson SS	NMP-245-216	Field #2	2.21	-77.305061	38.818296	Y
Robinson SS	NMP-245-251	Field #2	2.46	-77.307867	38.817751	Y
Robinson SS	NMP-245-195	Field #1	2.70	-77.306542	38.817933	Y
Rolling Valley West Park	NMP-248-318	Field #3	1.64	-77.268039	38.772676	Y
Rolling Valley West Park	NMP-248-472	Field #1	1.88	-77.265941	38.773244	Y
Roundtree Park	NMP-250-311	Field #2	1.09	-77.190385	38.852859	Y
South Lakes HS	NMP-259-197	Field #1	2.49	-77.341299	38.934321	Y
South Lakes Park	NMP-260-340	Field #1	1.51	-77.355679	38.939372	Y
South Run Rec Center	NMP-261-478	Field #2	1.39	-77.27164	38.749469	Y
South Run Rec Center	NMP-261-322	Field #3	1.58	-77.273967	38.751117	Y
South Run Rec Center	NMP-261-480	Field #1	2.13	-77.272132	38.751055	Y
Stone MS	NMP-267-131	<Null>	1.27	-77.456688	38.856186	Y
Stratton Woods Park	NMP-269-341	Field #2	1.45	-77.384408	38.942375	Y
Stratton Woods Park	NMP-269-547	Field #3	2.12	-77.385217	38.941644	Y
Stringfellow Park	NMP-270-328	Field #3	1.46	-77.401164	38.847706	Y
Stringfellow Park	NMP-270-327	Field #2	1.60	-77.401377	38.846597	Y
Sully Highlands Park	NMP-272-517	Field #5	2.18	-77.426323	38.92007	Y
Twin Lakes GC	NMP-281-301	<Null>	356.70	-77.403864	38.821128	Y
Wakefield	NMP-286-405	Field #2	1.36	-77.225916	38.814063	Y
Wakefield	NMP-286-410	Fields #3, #4, & #6	2.93	-77.225673	38.815703	Y
Waples Mill ES	NMP-288-260	<Null>	1.57	-77.343981	38.875706	Y
West Potomac HS	NMP-291-261	<Null>	1.06	-77.074593	38.773521	Y

Facility	NMP ID	Field Name	Acres	Longitude	Latitude	NMP Completed
West Potomac HS	NMP-291-608	Field #1	1.99	77.074601	38.774367	Y
West Springfield ES	NMP-292-153	Field #2	1.65	-77.220719	38.769132	Y
West Springfield HS	NMP-293-223	Field #1	2.17	-77.240444	38.78388	Y
Winterset Varsity Park	NMP-304-412	Field #1	1.54	-77.241311	38.839574	Y
Wolf Trails Park	NMP-305-382	Field #1	1.24	-77.266698	38.927683	Y
Wolftrap ES	NMP-306-166	<Null>	1.07	-77.265196	38.917777	Y

Fairfax County 2021 MS4 Program Plan and Annual Report

Appendix R3

List of Illicit Discharges Identified, the Source, a Description of Follow-Up Activities and Whether the Illicit Discharge Has Been Eliminated

VSMP Permit Number VA0088587
9-30-2021

From July 1, 2020 to June 30, 2021, SWPD identified 87 confirmed illicit discharges to the County's MS4. No confirmed illicit discharge cases were referred by the County's Dry Weather Screening (DWS) Program. SWPD also completed two investigations that were ongoing when the previous reporting year ended, denoted by an asterisk (*) next to the IDID number.

IDID Number	**Type**	**Source**	**Follow-Up Activities**	**Discharge Eliminated? (Yes / No)**
IDID-1851845*	Wash water with detergent	Autobody Shop	No referral needed. A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated	Yes
IDID-1869813*	Litter and floatables	Townhomes	VA Department of Environmental Quality was Notified. A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated	Yes
IDID-1873488	Concrete Slurry	Townhomes	No referral needed. A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1877144	White substance	Unconfirmed	No referral needed. Transitory discharge, source unconfirmed. No re-inspection or cleanup required.	Yes
IDID-1877550	Swimming pool discharge	Residence	A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1877767	Concrete	Construction Contractor	No referral needed. A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1878843	Sediment	Private Landfill	VA Department of Environmental Quality was notified. The discharge was determined to be authorized under a state permit.	Yes
IDID-1880649	Construction site runoff	VDOT	VA Department of Environmental Quality was notified. The discharge was determined to be authorized under a state permit.	Yes

IDID Number	Type	Source	Follow-Up Activities	Discharge Eliminated? (Yes / No)
IDID-1881395	Dumped trash / dumpster	Grocery Store	No referral needed. A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1883322	Construction site runoff	VDOT	VA Department of Environmental Quality was notified. VA Department of Transportation was notified. The discharge was determined to be authorized under a state permit.	Yes
IDID-1883317	Litter and floatables	Unconfirmed	Operation Stream Shield was notified. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1883943	Automotive Fluids	Auto Parts Transportation Company	Department of Code Compliance was notified. A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1886283	Litter and floatables	Unconfirmed	Maintenance & Stormwater Management Division was notified. SWPD re-inspected to confirm cleanup and the case was closed.	Yes
IDID-1889533	Cooling tower discharge	Cooling Tower	Wastewater Treatment Division was notified. A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1889461	Dumped trash / dumpster	Shopping Center	Solid Waste Management Program was notified. A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1889670	Swimming pool discharge	Single Family Home	No referral needed. A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes

IDID Number	Type	Source	Follow-Up Activities	Discharge Eliminated? (Yes / No)
IDID-1893034	Pool Plaster Dumped	Townhomes	No referral needed. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1893998	Litter and floatables	Homeless Encampment	Maintenance & Stormwater Management Division was notified. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1894653	Dumped plant material	Single Family Home	No referral needed. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1895512	Paint	Townhomes	No referral needed. A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1896239	Litter and floatables	Community	Maintenance & Stormwater Management Division was notified. Department of Code Compliance was notified.	Yes
IDID-1896528	Drilling Mud	Construction Contractor	No referral needed. A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1896525	Swimming pool discharge	Swimming Pool	No referral needed. Transitory discharge. No re-inspection or cleanup required.	Yes
IDID-1898054	Paint	Unconfirmed	No referral needed. Transitory discharge, source unconfirmed. No re-inspection or cleanup required.	Yes
IDID-1899314	Sanitary sewage	Sewer Line Break	Wastewater Collection Division was notified. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1900218	Swimming pool discharge	Swimming Pool Company	VA Department of Environmental Quality was notified. A Notice of Violation was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes

IDID Number	Type	Source	Follow-Up Activities	Discharge Eliminated? (Yes / No)
IDID-1900471	Dumped trash / dumpster	Autobody Collision Service	No referral needed. A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1901198	Dumped trash / dumpster	Apartments	No referral needed. A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1901779	Milky white substance	Unconfirmed	No referral needed. Transitory discharge, source unconfirmed. No re-inspection or cleanup required.	Yes
IDID-1902777	Sediment	Municipal Drinking Water Authority	VA Department of Environmental Quality was notified. Fairfax Water was notified. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1905476	Granite Waste	Granite/Marble Fabricator	No referral needed. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1905198	Litter and floatables	Apartments	No referral needed. A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1906324	Sediment	Municipal Drinking Water Authority	VA Department of Environmental Quality was notified. Fairfax Water was notified. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1906742	Concrete Slurry	Concrete Company	No referral needed. A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1907026	Dumped plant material	Unconfirmed	No referral needed. Transitory discharge, source unconfirmed. No re-inspection or cleanup required.	Yes

IDID Number	Type	Source	Follow-Up Activities	Discharge Eliminated? (Yes / No)
IDID-1907424	Sediment	Single Family Home	No referral needed. A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1908933	Dumped plant material	Single Family Home	No referral needed. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1908939	Paint	Single Family Home	No referral needed. Transitory discharge, source unconfirmed. No re-inspection or cleanup required.	Yes
IDID-1908800	Paint	Homeowner	No referral needed. A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1911088	Granite Fabrication Wastewater	Granite/Marble Fabricator	A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1911737	Unconfirmed	Unconfirmed	VA Department of Environmental Quality was notified. Transitory discharge, source unconfirmed. No re-inspection or cleanup required.	Yes
IDID-1912526	Swimming pool discharge	Single Family Home	No referral needed. A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1912697	Salt	Salt Pile	No referral needed. A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1913335	Diesel Fuel	Wastewater Bypass Sump Pump	VA Department of Environmental Quality was notified. Fire & Rescue Department was notified. Wastewater Collection Division was notified. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes

IDID Number	Type	Source	Follow-Up Activities	Discharge Eliminated? (Yes / No)
IDID-1914399	Salt	Salt Pile	No referral needed. A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1916076	Fertilizer Granules	Lawn Care Service	No referral needed. A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1916971	Salt	Salt Pile	No referral needed. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1917376	Concrete Dust	Office Building Parking Garage	VA Department of Environmental Quality was notified. A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1917506	Wash water with detergent	Carpet Cleaning Company	No referral needed. Transitory discharge, responsible party unconfirmed. No re-inspection or cleanup required.	Yes
IDID-1921834	Salt	Salt Pile	No referral needed. A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1922348	Sediment	Municipal Drinking Water Authority	VA Department of Environmental Quality was notified. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1922374	Salt	Salt Pile	No referral needed. A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1922632	Salt	Salt Pile	No referral needed. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes

IDID Number	Type	Source	Follow-Up Activities	Discharge Eliminated? (Yes / No)
IDID-1922533	Swimming pool discharge	Single Family Home	No referral needed. A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1923487	Salt	Salt Pile	No referral needed. A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1923460	Sanitary sewage	Single Family Home	VA Department of Environmental Quality was notified. Department of Code Compliance was notified. Health Department was notified. A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1924644	Sediment	Unconfirmed	Land Development Services was notified. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1926321	Swimming pool discharge	Single Family Home	No referral needed. A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1927049	Non-potable water	Contractor	No referral needed. A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1928144	Fats, oils and grease (FOG)	Restaurant	Health Department was notified. A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1930037	Marble Sludge Cuttings	Industrial Park	No referral needed. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes

IDID Number	Type	Source	Follow-Up Activities	Discharge Eliminated? (Yes / No)
IDID-1930734	Litter and floatables	Townhomes	No referral needed. A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1930480	Animal waste	Unconfirmed	No referral needed. Transitory discharge, responsible party unconfirmed. No re-inspection or cleanup required.	Yes
IDID-1933495	Construction site runoff	Site Construction	Land Development Services was notified. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1936586	Litter and floatables	Townhomes	Fairfax County Housing & Community Development was notified. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1936612	Unconfirmed	Unconfirmed	VA Department of Transportation was notified. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1938930	Air duct filter waste	Carpet Cleaning Company	No referral needed. A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1940298	Swimming pool discharge	Pool Contractor	No referral needed. A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1940259	Cooling tower discharge	Apartments	No referral needed. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1940227	Swimming pool discharge	Single Family Home	No referral needed. A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes

IDID Number	Type	Source	Follow-Up Activities	Discharge Eliminated? (Yes / No)
IDID-1941479	Swimming pool discharge	Pool Contractor	No referral needed. A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1941482	Unconfirmed	Unconfirmed	No referral needed. Transitory discharge, source unconfirmed. No re-inspection or cleanup required.	Yes
IDID-1946135	Fats, oils and grease (FOG)	Restaurant	Health Department was notified. Wastewater Treatment Division was notified. A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1946726	Unconfirmed	Unconfirmed	No referral needed. Transitory discharge, responsible party unconfirmed. No re-inspection or cleanup required.	Yes
IDID-1947031	Fats, oils and grease (FOG)	Grease Bin	No referral needed. A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1947640	Yard Debris	Landscaping	A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1947919	Paint	Single Family Home	No referral needed. A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1949444	Fats, oils and grease (FOG)	Grease Bin	VA Department of Environmental Quality was notified. A Corrective Action Notice was issued. This investigation is still ongoing.	No

IDID Number	Type	Source	Follow-Up Activities	Discharge Eliminated? (Yes / No)
IDID-1949831	Sanitary sewage	Single Family Home	VA Department of Environmental Quality was notified. A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1949929	Fats, oils and grease (FOG)	Grease Bin	No referral needed. A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1951421	Wash water with detergent	Mobile Dog Groomer	No referral needed. A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1951673	Dumped plant material	Single Family Home	No referral needed. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1952238	Sanitary sewage	Historic Park	VA Department of Environmental Quality was notified. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1955318	Fats, oils and grease (FOG)	Restaurant	Health Department was notified. A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1955931	Swimming pool discharge	Apartments	A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1956230	Litter, Washwater, and large pieces of debris	Dumpsters, Vehicle Washing	Department of Code Compliance was notified. A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes

IDID Number	Type	Source	Follow-Up Activities	Discharge Eliminated? (Yes / No)
IDID-1956179	Unconfirmed	Unconfirmed	No referral needed. Transitory discharge, responsible party unconfirmed. No re-inspection or cleanup required.	Yes
IDID-1956838	Fats, oils and grease (FOG)	Grease Interceptor	A Notice of Violation was issued. County attorney's office is seeking civil penalty. Activities are ongoing.	No
IDID-1958516	Fats, oils and grease (FOG)	Shopping Center	VA Department of Environmental Quality was notified. A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes

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Appendix R4

A List of Spills, the Source (Identified To The Best of the Permittee's Ability), and a Description of Follow-Up Activities Taken

VSMP Permit Number VA0088587
9-30-2021

From July 1, 2020, to June 30, 2021, spill response personnel responded to 11 spills that had the potential to discharge into the MS4. The investigations are summarized below.

Date	Spill	Source	Follow-up Activities Taken
07/09/20	Diesel Fuel Oil, unknown amount	Accidental release	Spill was mitigated spill by placing booms and pads. Fire service completed clean-up. DEQ was notified.
07/28/20	Diesel Fuel, less than 50 gallons	Accidental release	VA State Police and VDOT completed clean-up of the spill.
08/04/20	Paint (unconfirmed type), less than 10 gallons	Portable Container	Clean-up was completed by the responsible party.
09/24/20	Sediment, unknown amount	Improper Release	A Notice of Violation was issued, and clean-up was completed by the responsible party.
10/21/20	Oil Based Paint, unknown amount	Improper Release	Clean-up was completed by the responsible party.
11/16/20	Diesel Fuel Oil, unknown amount	Accidental release	A Notice of Violation was issued, and clean-up was completed by the responsible party.
11/19/20	Unknown substance and amount	Unknown source	DEQ was notified and clean-up was completed by the responsible party.
12/22/20	Power steering fluid, unknown amount	Accidental release	DEQ was notified. A Notice of Violation was issued, and clean-up was completed by the responsible party.
01/18/21	Hydraulic fluid, unknown amount	Equipment Failure	Clean-up was completed by the responsible party.
04/09/21	Unknown substance and amount	Unknown source	DEQ was notified and clean-up was completed by the responsible party.
05/24/21	Diesel Fuel Oil, Less than 70 gallons	Accidental Release	DEQ, DPWES Stormwater, and VADEM were notified. A Notice of Violation was issued and clean-up was completed by the responsible party.

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Appendix R5

List of Industrial and High-Risk Runoff Facilities Inspected During the Reporting Period

VSMP Permit Number VA0088587
9-30-2021

Fairfax County has established guidelines by which Stormwater Planning Division Code Specialists and Ecologists conduct inspections of points of connection to the Fairfax County municipal separate storm sewer system (MS4) and outdoor activities associated with industrial and high risk runoff (IHRR) facilities located within Fairfax County's regulated MS4 service area. At a minimum, the County will inspect VPDES industrial stormwater permitted outfalls connected to its MS4 once every five years consistent with the MS4 permit requirement, giving priority to facilities with the highest perceived risk, especially major automotive facilities. For more details, see "Standard Operating Procedures for Industrial and High Risk Runoff (IHRR) Program MS4 Point of Connection and Facility Inspections" (Appendix P9 of the Program Plan).

From July 1, 2020 to June 30, 2021, the County evaluated 63 facilities on its list of potential IHRR facilities. The evaluations are listed below. Of the 63 reported inspections, the County inspected the points of connection to the MS4 from 15 facilities in the regulated MS4 service area; these facilities are distinguished below with bold facility ID numbers. The remaining 48 facilities were found to be closed, moved outside the County, or not having industrial or high risk activities; those facilities will be removed from the inspection program as the County continues to refine its facility list.

Facility ID	VPDES Permit Type (if applicable)	Primary SIC Code	Primary SIC Description	Inspection Date
IHR017306567	N.A.	381201	Aerospace Industries (Mfrs)	3/18/2021
IHR017306600	N.A.	376901	Missile & Rocket Research & Dev (Mfrs)	3/18/2021
IHR071406439	N.A.	504403	Copying & Duplicating Machines & Supls	3/22/2021
IHR017306922	N.A.	737415	Internet Service	3/22/2021
IHR024206049	N.A.	421307	Trucking-Heavy Hauling	3/22/2021
IHR024206801	N.A.	753201	Automobile Body-Repairing & Painting	4/7/2021
IHR024206980	N.A.	421401	Movers	4/7/2021
IHR024208002	N.A.	421401	Movers	4/7/2021
IHR024206031	N.A.	751303	Truck Renting & Leasing	4/7/2021
IHR024208583	N.A.	738902	Interior Decorators Design & Consultants	4/7/2021
IHR024206648	N.A.	753801	Automobile Repairing & Service	4/7/2021
IHR024206189	N.A.	421401	Movers	4/7/2021
IHR034109163	N.A.	382204	Controls Control Systems/Regulators-Mfrs	6/3/2021
IHR033210293	N.A.	521152	Cement-Retail	6/3/2021
IHR033209240	N.A.	599920	Home Health	6/3/2021
IHR034310170	N.A.	523110	Glass-Auto Plate	6/3/2021
IHR044109724	N.A.	381201	Aerospace Industries (Mfrs)	6/3/2021
IHR044109506	N.A.	399903	Manufacturers	6/3/2021
IHR034308299	N.A.	738959	Information	6/3/2021
IHR034308650	N.A.	384104	Physicians	6/3/2021
IHR034410065	N.A.	394406	Games	6/3/2021
IHR034408363	N.A.	593229	Pawnbrokers	6/3/2021
IHR034409907	N.A.	177105	Concrete Contractors	6/3/2021

Facility ID	VPDES Permit Type (if applicable)	Primary SIC Code	Primary SIC Description	Inspection Date
IHR029410370	N.A.	594409	Jewelers-Retail	6/7/2021
IHR039409255	N.A.	738944	Events-Special	6/7/2021
IHR039409513	N.A.	738970	Messenger Service	6/7/2021
IHR049209020	N.A.	507205	Fasteners-Industrial (Whls)	6/7/2021
IHR029409285	N.A.	551102	Automobile Dealers-New Cars	6/7/2021
IHR049108565	N.A.	599925	Plaques	6/8/2021
IHR048410122	N.A.	591205	Pharmacies	6/8/2021
IHR024210161	N.A.	363901	Appliances-Household-Major-Manufacturers	6/8/2021
IHR024208924	N.A.	737109	Information Technology Services	6/8/2021
IHR090410194	N.A.	367901	Electronic Equipment	6/9/2021
IHR099108036	N.A.	506304	Security Control Equip	6/9/2021
IHR080109124	N.A.	738923	Business Records	6/9/2021
IHR099109565	N.A.	551105	Truck-Dealers	6/9/2021
IHR099309672	N.A.	376101	Missile	6/10/2021
IHR099208649	N.A.	737317	Voice-Data Network-Internet Svc-Internet	6/14/2021
IHR081409411	N.A.	411903	Limousine Service	6/14/2021
IHR080208029	N.A.	506324	Burglar Alarm Systems (Whls)	6/14/2021
IHR080208162	N.A.	599920	Home Health	6/14/2021
IHR099308060	N.A.	473104	Freight-Forwarding	6/15/2021
IHR099110421	N.A.	152117	Kitchen Remodeling & Planning Svc	6/15/2021
IHR108108001	N.A.	411903	Limousine Service	6/15/2021
IHR047310286	N.A.	142201	Limestone	6/15/2021
IHR046408373	N.A.	243401	Cabinets-Manufacturers	6/15/2021
IHR046409562	N.A.	738999	Business Services Nec	6/15/2021
IHR057109959	N.A.	274105	Publishers (Mfrs)	6/15/2021
IHR080410332	N.A.	152138	Deck Builders	6/15/2021
IHR099310247	N.A.	753801	Automobile Repairing & Service	6/15/2021
IHR099308198	N.A.	209102	Fish Packers (Mfrs)	6/15/2021
IHR099209371	N.A.	832218	Social Service	6/16/2021
IHR083110276	N.A.	174101	Masonry Contractors	6/17/2021
IHR081410318	N.A.	176109	Roofing Contractors	6/17/2021
IHR091110321	N.A.	521127	Marble-Natural-Retail	6/21/2021
IHR091109441	N.A.	411903	Limousine Service	6/21/2021
IHR091109153	N.A.	507505	Air Conditioning Supplies	6/21/2021
IHR090208274	N.A.	731901	Display Designers	6/23/2021
IHR080408359	N.A.	553111	Automobile Parts	6/23/2021
IHR090208630	N.A.	509118	Swimming Pool Equipment	6/23/2021
IHR090208047	N.A.	553111	Automobile Parts	6/23/2021
IHR092408051	N.A.	553111	Automobile Parts	6/24/2021

Facility ID	VPDES Permit Type (if applicable)	Primary SIC Code	Primary SIC Description	Inspection Date
IHR082308043	N.A.	553111	Automobile Parts	6/24/2021

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Appendix R6

Revised List of High Priority Municipal Facilities with a High Potential of Discharging Pollutants

VSMP Permit Number VA0088587
9-30-2021

List of High Priority Municipal Facilities with a High Potential of Discharging Pollutants

Fairfax County High Priority Municipal Facilities with a High Potential of Discharging	**Facility Address**
Huntley Meadows Maintenance Facility	6901 S. Kings HWY, Alexandria, VA 22310
Wakefield Park Maintenance Facility	8100 Braddock Rd. Annandale, VA 22003
Oak Marr Maintenance Facility	3200 Jermantown Rd, Oakton, VA 22124
Fred's Oak (Robert P. McMath Center)	6000 Freds Oak Rd. Burke, VA 22015
Burke Lake Maintenance Facility	10401 Burke Lake Rd, Fairfax Station, VA 22039
Lake Fairfax Maintenance Facility	1410 Hunter Mill Rd. Reston, VA 20190
Greenspring Gardens	4601 Green Spring Rd, Alexandria, VA 22312
Pinecrest Maintenance Facility	4531 Braddock Rd. Alexandria, VA 22312
Jefferson District Maintenance Facility	7900 Lee Hwy. Falls Church, VA 22042
Annandale Maintenance Facility	4030 Hummer Rd. Annandale, VA 22003
Greendale Maintenance Facility	6700 Telegraph Rd. Alexandria, VA 22310
Pleasant Valley Maintenance Facility	4715 Pleasant Valley Rd. Chantilly, VA 20151
Twin Lakes Maintenance Facility	6201 Union Mill Rd. Clifton, VA 20124
Flatlick Maintenance Facility	4501 Brookfield Corporate Dr. Chantilly, VA 20151
Maintenance & Stormwater Management Division	10635 West Dr. Fairfax, VA 22030
Central Maintenance Facility	5414 Ladue Ln. Fairfax, VA 22030
Dulles Maintenance Facility	4450 Upper Cub Run Drive Chantilly, VA 20151
Lake Accotink Park Maintenance Facility	7500 Accotink Park Rd, Annandale, VA 22003
Frying Pan Farm Park	2739 West Ox Rd, Herndon, VA 20171
Laurel Hill Golf Course and Maintenance Facility	9105 Hooes Road, Lorton, VA 22079
Woodson High School	9525 Main St, Fairfax, VA 22031

Fairfax County 2021 MS4 Program Plan and Annual Report

Appendix R7

Public Education and Participation Program Effectiveness Overview

VSMP Permit Number VA0088587
9-30-2021

During the 2021 reporting period, Fairfax County supported the Northern Virginia Clean Water Partners Only Rain Down the Drain campaign, a regional stormwater education campaign. The campaign uses radio advertising, online advertising and cable TV advertising to educate the public about preventing water pollution. The campaign includes several television ads to help residents visualize water pollution, and includes pollution prevention messages related to pet waste, motor oil, and fertilizer.

During June 2021, a survey was conducted of 500 northern Virginia residents to measure the effectiveness of the campaign. Twenty-eight percent of the respondents recalled seeing the advertisements on TV. This is significantly higher than the 2020 respondents who only twenty-two percent recalled the ad. Of those respondents who recalled the ads, forty-six percent state they now pick up their pet waste more often, thirty-two percent state they plan to fertilize fewer times per year, and nineteen percent are more careful with motor oil.

Social media was added to the campaign to reach more residents

Summary of Northern Virginia Clean Water Partners Regional Stormwater Education Campaign	
Television Ads	
Number of views reached	771,115
Social Media	
Impressions (Facebook & Twitter)	1,641,042
Engagement (Facebook & Twitter)	48,095
Annual Survey Results	
Number of residents surveyed	500
Number of survey respondents that recall seeing the Only Rain Down the Storm Drain logo	61%
Number of survey respondents that recalled seeing the TV ads	28%
Those who saw the ads made the following behavior changes:	
Pick up pet waste more often	46%
Fertilize fewer times per year	32%
More careful with motor oil	19%
Have heard of opportunities to participate in water quality activities	30%
Felt confident that they would know where to report potential water pollution	25%
Leave their grass clippings on the lawn	29%
Sweep or blow grass clippings back into the lawn from the street.	54%
Wash their vehicle at home	40%

*Estimated viewership numbers for TV ads; can include viewers who viewed the ad more than once.

Fairfax County has eight partners to assist fulfilling this permit requirement. These partnerships assist the county in reaching 3,623,543 people to ensure the required messages are given to a wide variety of audiences. The MS4 Public Education and Participation Team meets at least once a year with the partners to assess the current outreach efforts. Additional meetings may take place to improve existing outreach or develop new outreach. Below is a summary of outreach and education activities and estimated number of individuals reached for each of the ten messages required in Part I.B.2.j)1) of the permit. The new programs are highlighted in blue.

Date	Activity	Number of individuals reached	Required Public Education/Participation Messages (check all that apply for each activity)								
			Public reporting of illicit discharges or improper disposal	Individual and group involvement in local water quality improvement initiatives	Encourage integrated management practice (IMP) plans at public and private golf courses	Proper management disposal of used oil and household hazardous wastes	Proper disposal of pet waste and household yard waste	Promote and publicize the use of the permittee's litter prevention program	Methods for residential car washing that minimize water quality impacts	Proper use, application, and disposal of PHF by public, commercial, and private applicators and distributors	Target commercial, industrial, and institutional entities likely to have significant stormwater impacts
Multiple Sessions	Storm Drain Marking 1758 storm drains labeled	277 project leaders and volunteers, 5572 households educated	X	X		X	X	X	X	X	
Multiple Sessions	Enviroscape© watershed model (2 presentations)	19, primarily students and scouts		X		X	X	X	X	X	
Multiple Sessions	Volunteer Stream Monitoring Program	38 sites, 54 certified monitors, 230 volunteers		X		X	X	X	X	X	
Multiple Sessions	Watershed Calendar Email List	23018 recipients		X				X			
Multiple Sessions	Conservation Currents Newsletter	4534 recipients (print/email)		X		X	X	X	X	X	
Multiple Sessions	Technical Assistance Site Visits	386 site visits		X			X			X	
Multiple Sessions	Conservation Assistance Program	43 applicants (projects + site visits)		X							
Multiple Sessions	Solving Drainage and Erosion Problems Online Guide for Homeowners	120286 visits, 132765 views		X							
Multiple Sessions	NVSWCD website	155291 unique visitors	X	X		X	X	X	X	X	X
Multiple Sessions	Conservation Planning for managers of 114.2 acres, included 4460 linear feet of new vegetated buffer and 250 feet of renewed buffer plans	Managers for 19 parcels reached		X			X			X	
Multiple Sessions	Earth Friendly Suburban Horse Keeping publication online/print	2070 visits, 2198 page views		X			X			X	
Multiple Sessions	Build-Your-Own Composter Program (13 composter kits distributed)	13 participants built or purchased DIY composter kits					X	X		X	
Multiple Sessions	Build-Your-Own Rain Barrel Program (120 Rain barrels distributed)	103 participants built or purchased rain barrels		X							
Multiple Sessions	Artistic Rain Barrel Program (Two painted rain barrels were placed on display at high-traffic locations in the region)	500+ individuals exposed to rain barrels		X							
Multiple Sessions	Watershed Friendly Garden Tour	2044 virtual visitors, 12 garden sites		X			X			X	
Multiple Sessions	Rain Garden Workshops	209 participants		X							

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Multiple Sessions	Rain Garden Design and Construction Guide for homeowners	5040 downloaded the guide or received print copy		X							
Multiple Sessions	Residential Low Impact Landscaping Guide print/online	487 downloaded		X							
Multiple Sessions	Green Breakfast Seminars, 5X per year	275 attended	X	X							
Multiple Sessions	Seedling Sale (6496 native tree and shrub seedlings distributed)	394 seedling sale customers, webpage received 10999 visits		X						X	
Multiple Sessions	Alice Ferguson Foundation Spring Cleanups at 32 sites cleaned up 15.1 tons of trash	695 volunteers						X			
Multiple Sessions	Get2Green Newsletter	8,500 recipients		X							
				X							
Multiple Sessions	FCPS Earth Week	ongoing		X							
Multiple Sessions	Get2Green Twitter	939 followers, 53,880 tweet impressions		X							
Multiple Sessions	Field Guide to Fairfax County's Plants and Animals (Provided Material)	15,500	X							X	
Multiple Sessions	Fairfax County Field Journal (Provided Material)	16,000									
Multiple Sessions	Sewer Science (Stormwater contributions)	712	X			X	X	X	X		
Multiple Sessions	Presentations on Wastewater Management and Environmental Stewardship	2,108	X			X	X	X	X		
Multiple Sessions	Plant Tours of Noman Cole Treatment Plant	23	X			X	X	X			
4/5/2021	Pohick Creek Cleanup - Noman Cole	14						X			
6/1-2/2021	Virtual Water Quality Field Day (Solid Waste, Wastewater, Stormwater)	175		X							
Multiple Sessions	Salt Messaging Campaign (social media messaging)	91 likes and 20 shared posts	X								X
6/16/2021	Mailing: "Polychlorinated Biphenyls in buildings and facilities" brochure (NVRC)	221	X								X
1/15/2021	Mailing: "Convenience Store Pollution Prevention" fact sheet	195	X								X
5/21/2021	GWGCSA	84			X						
Multiple Sessions	School trips about water habitats K-6	31		X		X	X	X	X		
Multiple Sessions	Scout badge programs	60		X				X			
Multiple Sessions spring cancelled	watershed Clean ups	1064		X				X			
Multiple Sessions	Invasive plant volunteer engagement	340		X		X				X	
Multiple Sessions	Family water education programs	576					x	x		x	
Multiple Sessions	Residents self reporting green actions on the WTGG web map	27		X			X			X	
2/11/2021	Long Branch Watershed Management Update	47		X			X			X	
3/2/2021	Friends of Holmes Run Meeting, introducing WTGG	12		X			X	X		X	
3/7/2021	WTGG Mow Less, Grow More virtual presentation to Friends of Mason Neck Park	33		X			X			X	
3/10/2021	WTGG Mow Less, Grow More virtual presentation to McLean Citizens Association	24		X			X			X	
5/18/2021	WTGG Mow Less, Grow More virtual presentation through Burke Library	6		X			X			X	
6/16/2021	WTGG Native Plant Butterfly Gardens youth presentation through Burke Library	12		X							
6/26/2021	Mount Vernon Environmental Expo	66		X			X	X		X	

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Multiple Sessions	Facebook FCPA 6 WTGG posts	49 engagements		X			X			X	
Multiple Sessions	Facebook invasive yard waste	221		x			x				
Multiple Sessions	Facebook watershed clean up	124		x			x				
7/1/2020	Resources Newsletter WTGG	Total Distribution 4894; 1136 (23.2%) opened; 19 clicks on WTGG		x			x				
9/1/2020	Resources Newsletter WtGG	Total 4226; 1042 (24.7% opened); 22 clicks		x			x			x	
10/20/2021	Resources Newsletter Watershed clean up	Total 3261; 890 (27.3%) opened; 29 clicks		x							
3/21/2021	Resources Newsletter Yard waste	Total 5089; 1241 (24.4% opened); 65 clicks on yard waste (#1 in that issue)		x			x				
4/21/2021	Resources Newsletter invasive trash	Total 6377; 815 (12.8% opened)					x				
5/21/2021	Resources Newsletter mow less grow more	Total 6320; 1270 (20.1% opened; 37 clicks		X			X			X	
7/20/2020	CFC authored white paper on single use plastic for Virginia Conservation Network	2000					X	X			
7/11/2020	CFC Green Breakfast for NVSW	55					X	X			
7/12/2020	CFC and Friends of Accotink Clean up	45		X			X	X			
7/30/2020	CFC presented at Friends of Lake Accotink board meeting	10					X	X			
8/12/2020	CFC hosted FEEE lunch	25						X			
8/15/2020	CFC submitted written testimony opposing HB 5003 at the GA special session. Bill would remove funding from Litter Control and Recycling Fund	20		X			X	X			
9/24/2020	CFC attended EPA webinar about the future of plastic imports and exports	150						X			
9/29/2020	CFC meeting with Congresswoman Wexton's staff about the Break Free From Plastic Pollution Act	20					X	X			
10/2/2020	CFC attended VCN environmental assembly- spoke about previous plastic legislation	175					X	X			
10/19/2020	CFC gave Plastic legislation and solution presentation for Friends of Dyke Marsh, Friends of LHC and Porto Vecchio Condo Assoc	40					X	X			
10/22/2020	CFC Virginia Green Inititative meeting	30					X	X			
10/29/2020	CFC spoke as guest on FFX county enviropod	1000					X	X			
11/13/2020	CFC attended ARC GiS transition call	3					X	X			
11/17/2020	CFC involved in Virginia Plastic Pollution Network call	30					X	X			
11/18/2020	CFC ribbon cutting for oyster and food composting program	15					X	X			
12/4/2020	CFC presented on plastic legislation at VCN legislative preview	400					X	X			
12/15/2020	CFC attended environmental Law Institute single use plastic and the pandemic webinar	50					X	X			

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1/1/2021	CFC featured in 2021 EcoPrint Calendar: Protecting the Natural Beauty of the Bay (February)	1500					X	X			
1/7/2021	CFC presented FFX 350 about plastic waste in the environment,	40	X	X			X	X			
1/12/2021	CFC held new litter task force	10					X	X			
2/9/2020	Second CFC litter task force	7					X	X			
2/18/2021	CFC on Supervisor Walkinshaw's podcast	1000		X			X	X			
3/9/2021	CFC hosted third litter task force meeting	10					X	X			
4/22/2021	CFC Hosted a clean up behind Best Buy in tysons	13		X			X	X			
4/8/2021	CFC co-hosted VCN NoVA general session debrief	75					X	X			
4/13/2021	CFC hosted 4th litter task force meeting	10					X	X			
4/16/2021	CFC attended Fairfax Environmental Educators Meeting	45					X	X			
4/24/2021	CFC held Earth Daze at Aslin	750		X			X	X			
5/11/2021	CFC hosted Litter Task Force	7					X	X			
5/11/2021	CFC participated in VCN Workgroup Meeting	55					X	X			
6/4/2021	CFC attended Break Free From Plastic with LCV Webinar	50					X	X			
6/14/2021	CFC attended VOSRP Planting Event in Gwynn, VA	15					X	X			
6/17/2021	CFC attended Plastic Prevention Advisory Council Mtg	30					X	X			
6/21/2021	CFC attended Fairfax Environmental Educators Meeting	30					X	X			
Multiple Sessions	Industrial and High Risk Runoff (IHRR) Program	140	X								X
Multiple Sessions	Pollution Prevention packet	304	X			X	X	X	X	X	X
Multiple Sessions	Proper Discharge of Swimming Pool Water	1563	X								X
Multiple Sessions	Snow Removal	496	X								X
Multiple Sessions	Clean Water Partners Survey	500	X	X	X	X	X	X	X	X	X
Multiple Sessions	Clean Water Partners TV Ad Views	2,242,313	X	X	X	X	X	X	X	X	
Multiple Sessions	Clean Water Partners Online Ad Views	544,812	X	X	X	X	X	X	X	X	
Multiple Sessions	Apply for Vacuum Leaf Service	404					X				X
Multiple Sessions	A-Z List of Recycling and Trash Topics	4932					X	X			X
Multiple Sessions	Batteries	8156				X					
Multiple Sessions	Commercial Hazardous Waste	1587				X					X
Multiple Sessions	Composting and More	608									X
Multiple Sessions	Composting Organic Waste	2385				X	X				X
Multiple Sessions	Curbside Recycling	12342					X				X
Multiple Sessions	Curbside Yard Waste	27073				X					
Multiple Sessions	Disposal Companies for Specialized or Hazardous Waste	1031						X			
Multiple Sessions	Document Shredding	45056				X					
Multiple Sessions	Electric Sunday (alias)	416				X					X
Multiple Sessions	Electronics	41672					X				
Multiple Sessions	Free Mulch	20446				X	X				X
Multiple Sessions	Household Hazardous Waste	49066					X				X
Multiple Sessions	Household Hazardous Waste (alias)	2297						X			
Multiple Sessions	Leaf Collection Dates	19834	X					X			
Multiple Sessions	MEGABULK Pick Up	2061					X				X
Multiple Sessions	Organic Waste	700						X			X
Multiple Sessions	Paper, Not Plastic: A Public Outreach Toolkit for Proper Disposal of Yard Waste	683						X			X
Multiple Sessions	Plastic	15377				X		X			X
Multiple Sessions	Recycling and Trash FAQs	9891						X			
Multiple Sessions	Recycling and Trash News, Videos and Podcasts	828				X					X
Multiple Sessions	Reduce, Reuse, Recycle	15087					X				X
Multiple Sessions	Shredding (alias)	448	X			X	X				
Multiple Sessions	Special Pick Up	60606	X			X	X				
Multiple Sessions	Subscribe to Vacuum Leaf Collection Email Updates	1844					X				X
Multiple Sessions	Transition from Plastic Bags for Yard Waste Collection FAQs	4283					X				X
Multiple Sessions	Trash and recycling guidelines	141				X					

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Multiple Sessions	Trash Collection E-Updates	2180					X				X
Multiple Sessions	Trash/Recycling Container Request	11808								X	X
Multiple Sessions	Vacuum Leaf Collection	6469	X						X		X
Multiple Sessions	Vacuum Leaf Collection FAQs	1370	X								X
Multiple Sessions	Very Small Quantity Generators (VSQG - formerly CESQGs)	1025	X								X
Multiple Sessions	Yard Waste	19500	X								
Multiple Sessions	Yard Waste Collection Suspension FAQs	1243	X								
Multiple Sessions	A Field Guide to Fairfax County's Plants and Wildlife	1325	X								X
Multiple Sessions	Accotink Creek Tributary at Carrleigh Parkway (AC82-0015) (Project Number: SD-000031-228)	54	X			X	X	X	X	X	X
Multiple Sessions	Accotink Tributary at Danbury Forest Stream Restoration (SD000031-179)	42	X								X
Multiple Sessions	Bull Neck Run at Spring Hill RECenter Stream Restoration (Archived 11/2019)	3									X
Multiple Sessions	Cameron Run Tributary at La Vista Drive Stream Restoration	127	X			X	X	X	X	X	
Multiple Sessions	Car Washing the Right Way	710	X	X	X	X	X	X	X	X	X
Multiple Sessions	Colvin Run Phase II at Lake Fairfax Park Stream Restoration	94									X
Multiple Sessions	Cooling Towers	222	X			X	X	X	X	X	X
Multiple Sessions	Dead Run at Georgetown Pike Stream Restoration (SD-000031-230)	622		X							X
Multiple Sessions	Education Programs (alias)	87	X	X		X	X	X	X	X	X
Multiple Sessions	Facility Fact Sheets	1125	X								X
Multiple Sessions	FAQs: Stormwater Maintenance and Inspections	138									
Multiple Sessions	Headwaters of Popes Head Creek at Brecon Ridge Subdivision Stream Restoration Project (SD-000031-220) (PH9271/PH9272)	47	X								
Multiple Sessions	Illicit Discharge and Improper Disposal (IDID) Program	814	X	X		X	X	X	X	X	
Multiple Sessions	Industrial and High Risk Runoff (IHRR) Program	103		X		X	X	X	X	X	
Multiple Sessions	Lake Accotink Dredging (AC89-0009)	1596						X			
Multiple Sessions	Lake Accotink Dredging (AC89-0009) (alias)	442	X	X		X	X	X		X	
Multiple Sessions	Little Hunting Creek Force Main Replacement Project	279		X							
Multiple Sessions	Little Pimmit Run at Chesterbrook Road Stream Restoration	1004	X					X			
Multiple Sessions	Little Pimmit Run Tributary at Woodland Terrace Stream Restoration	447		X						X	
Multiple Sessions	Long Branch Central Watershed Management Area Project	1178	X	X		X	X	X	X	X	
Multiple Sessions	Maintenance and Inspections	1919	X	X		X	X	X	X	X	
Multiple Sessions	Maintenance Contractors	481	X	X		X	X	X	X	X	
Multiple Sessions	MS4 Program Plan and Annual Reports	459	X	X		X	X	X	X	X	
Multiple Sessions	Municipal Separate Storm Sewer System (MS4) Permit	992	X	X		X	X	X	X	X	
Multiple Sessions	Old Courthouse Spring Branch at Ashgrove Historic Park Stream Restoration, SD-000031-236	115	X	X		X	X	X	X	X	
Multiple Sessions	Paul Spring Branch at Sherwood Hall Stream Restoration, SD000031-237	297	X	X		X	X	X	X	X	
Multiple Sessions	Pimmit Run at George C. Marshall Drive Stream Restoration Project (SD-000031-226)	163	X	X		X	X	X	X	X	
Multiple Sessions	Pollution Prevention packet	389	X	X		X	X	X	X	X	
Multiple Sessions	Private Facility Maintenance	1018	X	X		X	X	X	X	X	
Multiple Sessions	Private Residential Outreach Packet	363	X	X		X	X	X	X	X	
Multiple Sessions	Proper Discharge of Swimming Pool Water	2213	X	X		X	X	X	X	X	
Multiple Sessions	Public Facility Maintenance	391	X	X							
Multiple Sessions	Rocky Run at Hickory Hollow Lane and Ashlawn Park Stream Restoration Project (SD-000031-238)	435	X	X							
Multiple Sessions	Scotts Run at Dolley Madison Stream Restoration Project (SD-000031-250)	36	X	X							
Multiple Sessions	Snow Removal	1356	X	X							
Multiple Sessions	Stormy the Raindrop	297	X	X							
Multiple Sessions	Stream Crime Investigation (SCI)	132	X	X							
Multiple Sessions	Students Help with Floatable Monitoring Program (archived)	3	X	X							

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Multiple Sessions	Tripps Run at Barrett Road Flood Mitigation Study (SD-000032-069)	205	X	X							
Multiple Sessions	Turkeycock Creek at Brookside Office Park Stream Restoration (SD-000031-242)	27	X	X							
Multiple Sessions	Urban Forestry Education Programs	264	X	X							
Multiple Sessions	Volunteer Opportunities and Educational Programs (alias)	35	X	X							
Multiple Sessions	What's that Stuff in the Stream?	6043	X	X							
Multiple Sessions	Sewer Science Program	175	X	X		X	X	X	X	X	
Multiple Sessions	Wastewater Management for Educators and Students	177	X	X		X	X	X	X	X	
Multiple Sessions	Wastewater Treatment Plant Tours	491	X	X		X	X	X	X	X	
Multiple Sessions	At-Home Version of Popular Stream Critter Cube Lab Now Available	56	X	X		X	X	X	X	X	
Multiple Sessions	Controlling and Managing Invasive Plants	577	X	X		X	X	X	X	X	
Multiple Sessions	Destructive Tree Pest Kills Trees	474	X	X		X	X	X	X	X	
Multiple Sessions	Emergency Work at Fort Hunt Road and Hunting Cove Place	75	X	X		X	X	X	X	X	
Multiple Sessions	End of Season Guidance for Draining Swimming Pools	397	X	X		X	X	X	X	X	
Multiple Sessions	Fairfax County Begins Transition from Plastic Yard Waste Bags	2322	X	X		X	X	X	X	X	
Multiple Sessions	Fairfax County Collected 366.85 Tons of Household Hazardous Waste in 2019	19	X	X		X	X	X	X	X	
Multiple Sessions	Fairfax County Farmers Market Composting Pilot Program Expanding to Several Farmers Markets	171	X	X		X	X	X	X	X	
Multiple Sessions	Fats, Oils and Grease (FOG)	1860	X	X		X	X	X	X	X	
Multiple Sessions	Floating Litter Trap Installed in Little Hunting Creek	264	X	X		X	X	X	X	X	
Multiple Sessions	Girl Scouts Jump into Water Event	7	X	X		X	X	X	X	X	
Multiple Sessions	Guidance for Swimming Pool Owners and Managers	45	X	X		X	X	X	X	X	
Multiple Sessions	Infrastructure Week Quality of Water = Quality of Life	102	X	X		X	X	X	X	X	
Multiple Sessions	Invasive Plant Management	13	X	X		X	X	X	X	X	
Multiple Sessions	Litter (alias to new agency-wide page)	1	X	X		X	X	X	X	X	
Multiple Sessions	Litter (new agency wide link)	2473	X	X		X	X	X	X	X	
Multiple Sessions	Managing Trees in Preservation Areas	130	X	X		X	X	X	X	X	
Multiple Sessions	New Rain Garden to Replace Crumbling Fountain	118	X	X		X	X	X	X	X	

Fairfax County 2021 MS4 Program Plan and Annual Report

Appendix R9

Dry Weather Screening Report

VSMP Permit Number VA0088587
9-30-2021

StormNet:	Results of Inspection	Follow-up Actions
STMN0161404805	No Exceedances	
STMN0161404994	No Exceedances	
STMN0161405107	No Exceedances	
STMN0161509515	No Exceedances	
STMN0163515765	No Exceedances	
STMN0252060111	No Exceedances	
STMN0282081088	No Exceedances	
STMN0282086943	No Exceedances	
STMN0282089495	No Exceedances	
STMN0291511639	No Exceedances	
STMN0292076307	No Exceedances	
STMN0301410066	No Exceedances	
STMN0334028291	No Exceedances	
STMN0392024788	No Exceedances	
STMN0392025018	No Exceedances	
STMN0394025198	No Exceedances	
STMN0402414843	No Exceedances	
STMN0402414853	No Exceedances	
STMN0402414865	No Exceedances	
STMN0402415106	No Exceedances	
STMN0402415111	No Exceedances	
STMN0432076044	No Exceedances	
STMN0452033804	No Exceedances	
STMN0483425644	No Exceedances	
STMN0483425899	No Exceedances	
STMN0483425902	No Exceedances	
STMN0483426082	No Exceedances	
STMN0484062972	No Exceedances	
STMN0484424863	No Exceedances	
STMN0484424868	No Exceedances	
STMN0484425162	No Exceedances	
STMN0484425165	No Exceedances	
STMN0494422992	No Exceedances	
STMN0494423036	No Exceedances	
STMN0494423140	No Exceedances	
STMN0502417884	No Exceedances	
STMN0504421795	No Exceedances	
STMN0504421839	No Exceedances	
STMN0504422005	No Exceedances	
STMN0543048519	No Exceedances	
STMN0551042106	No Exceedances	
STMN0551042150	No Exceedances	
STMN0551090198	No Exceedances	
STMN0561041121	No Exceedances	
STMN0561041161	No Exceedances	
STMN0561041588	No Exceedances	
STMN0561044241	No Exceedances	
STMN0561064760	No Exceedances	
STMN0561084645	No Exceedances	
STMN0584435119	No Exceedances	
STMN0642049297	No Exceedances	
STMN0651048556	No Exceedances	
STMN0651048561	No Exceedances	
STMN0651088411	No Exceedances	
STMN0651091592	No Exceedances	
STMN0682442898	No Exceedances	
STMN0682442904	No Exceedances	
STMN0683450295	No Exceedances	
STMN0691441846	No Exceedances	
STMN0703092369	No Exceedances	
STMN0703447607	No Exceedances	
STMN0712071460	No Exceedances	
STMN0712438039	No Exceedances	
STMN0712438349	No Exceedances	
STMN0712438350	No Exceedances	
STMN0723065904	No Exceedances	
STMN0771459073	No Exceedances	
STMN0772458294	No Exceedances	
STMN0772458303	No Exceedances	
STMN0781064373	No Exceedances	
STMN0781457742	No Exceedances	

StormNet:	Results of Inspection	Follow-up Actions
STMN0781458182	No Exceedances	
STMN0781458188	No Exceedances	
STMN0782457037	No Exceedances	
STMN0782457500	No Exceedances	
STMN0784467613	No Exceedances	
STMN0784467664	No Exceedances	
STMN0793466656	No Exceedances	
STMN0794466080	No Exceedances	
STMN0794466084	No Exceedances	
STMN0794466149	No Exceedances	
STMN0794466530	No Exceedances	
STMN0794466531	No Exceedances	
STMN0802091164	No Exceedances	
STMN0802512595	No Exceedances	
STMN0811453764	No Exceedances	
STMN0894482437	No Exceedances	
STMN0894482450	No Exceedances	
STMN0894482464	No Exceedances	
STMN0901474665	No Exceedances	
STMN0901474668	No Exceedances	
STMN0901474787	No Exceedances	
STMN0901474831	No Exceedances	
STMN0901512633	No Exceedances	
STMN0901512681	No Exceedances	
STMN0914480101	No Exceedances	
STMN0992487937	No Exceedances	
STMN0992515956	No Exceedances	
STMN0993495633	No Exceedances	
STMN0993495837	No Exceedances	
STMN1074051812	No Exceedances	
STMN1074068406	No Exceedances	
STMN1074511571	No Exceedances	

Fairfax County 2021 MS4 Program Plan and Annual Report

Appendix R10

Wet Weather Screening Report

VSMP Permit Number VA0088587
9-30-2021

								Analytical Results (event mean concentration)																
SOP Date Range	Site Name	STMN #	Rainfall Start Date	Rainfall Amount (in)	Rain Event Length (h)	Last Rainfall Event Date	Cd (mg/L)	COD (mg/L)	Cr (mg/L)	Cu (mg/L)	Hardness (mg/L)	TKN (mg/L)	Pb (mg/L)	Ni (mg/L)	NO_x (mg/L)	Ortho-P (mg/L)	P (mg/L)	TPH (mg/L)	TSS (mg/L)	Zn (mg/L)	pH	SPC (µS/cm)
July 2014 - June 2021	Fullerton Court	STMN0991488353	10/11/2020*	1.39	27.5	10/2/2020	< 0.00025	< 50	< 0.002	**0.0080**	24	1.1	< 0.001	< 0.001	0.228	0.0522	0.098	< 5.0	4.5	0.0275	7.36	0.073
July 2014 - June 2021	Beacon Center	STMN0931471031	10/29/2020*	2.43	25.0	10/25/2020	< 0.00025	< 50	< 0.002	**0.0048**	11	**2.5**	< 0.001	< 0.001	0.251	0.0843	0.130	< 5.0	28.0	**0.0552**	7.81	0.044
July 2014 - June 2021	Beacon Center	STMN0931471031	12/4/2020	1.60	10.0	11/30/2020	< 0.00025	78	< 0.002	**0.0031**	11	**2.0**	< 0.001	< 0.001	0.132	0.0685	0.088	< 5.0	3.4	**0.0309**	7.28	0.030
July 2014 - June 2021	Fullerton Court	STMN0991488353	12/4/2020	1.74	10.0	11/30/2020	< 0.00025	< 50	< 0.002	**0.0069**	32	**2.0**	0.001	0.0010	0.537	0.0911	0.100	< 5.0	7.6	0.0284	7.31	0.119
July 2014 - June 2021	Beacon Center	STMN0931471031	3/31/2021	1.13	17.0	3/28/2021	< 0.0005	86	0.0022	**0.02**	38	**4.5**	< 0.001	< 0.001	0.33	0.402	0.49	< 5	8.8	0.049	7.73	0.102
July 2014 - June 2021	Fullerton Court	STMN0991488353	3/31/2021	1.17	17.0	3/28/2021	< 0.0005	67	0.0016	**0.011**	17	**2.5**	0.0013	< 0.001	0.16	0.0285	0.055	< 5	11	**0.027**	7.59	0.065
July 2014 - June 2021	Beacon Center	STMN0931471031	5/28/2021	1.40	21.0	5/26/2021	< 0.0006	< 50	< 0.004	**0.00872**	23	0.9	< 0.001	< 0.004	**0.8**	0.048	0.10	< 2.5	3.3	**0.05540**	6.79	0.068
July 2014 - June 2021	Fullerton Court	STMN0991488353	5/28/2021	1.18	21.0	5/26/2021	< 0.0006	< 50	< 0.004	**0.00973**	21	0.7	< 0.001	< 0.004	0.31	0.0531	0.092	< 2.7	8	< 0.03	6.74	0.076

* There were no predictable, qualifying storm events in Q3, 2020 (July-Sept). Two storms were monitored in Q4, 2020 (Oct-Dec).

Analyte value was greater than exceedance criterion

Follow-up actions : All storm event reports with exceedances are sent to our Industrial and High Risk Runoff (IHRR) Group for analysis. Zinc and copper are common urban pollutants, originating from roofs and vehicles. Copper can also come from cooling towers, washing activity, or from water flowing through soil such as groundwater seeps into the storm drainage system joints. Elevated copper and zinc concentrations are common in urban and suburban runoff (Davis, Shokouhian and Ni, 2001), (Pitt, Field, Lalor, & Brown, 1995). The IHRR group performed a desktop analysis and found that observed values were similar to levels commonly found in drinking water, which is an allowable discharge under the permit.

References:

Pitt, R., R. Field, M. Lalor, and M. Brown. 1995. Urban stormwater toxic pollutants: assessment, sources, and treatability. Water Environment Research, 67(3), 260-275.

Davis, A., M. Shokouhian, and S. Ni. 2001. Loading estimates of lead, copper, cadmium, and zinc in urban runoff from specific sources. Chemosphere, 44(5), 997-1009.

							Analytical Results (event mean concentration)																												
SOP Date Range	Site Name; Sample	STMN #	Rainfall Start Date	Rainfall Amount (in)	Rainfall Event Length (h)	Last Rainfall Event Date	Cd (mg/L)	Ca (mg/L)	COD (mg/L)	Cl (mg/L)	Cr (mg/L)	Cu (mg/L)	Fluoride	Hardness	Fe (mg/L)	Pb (mg/L)	Mg (mg/L)	Mn (mg/L)	Ni (mg/L)	NH_3 (mg/L)	TKN (mg/L)	NO_x (mg/L)	Ortho-P (mg/L)	pH	TP (mg/L)	K (mg/L)	Silica (mg/L)	Na (mg/L)	SPC (µS/cm)	SO_4 (mg/L)	TDS (mg/L)	TSS (mg/L)	Zn (mg/L)
October 2020 - June 2021	Bren Marr; Baseflow	STMN0811453764	12/4/2020	1.18	10.5	11/30/2020	< 0.00008	37.70	< 25	215.0	< 0.0005	0.0017	< 0.10	139.00	0.88	0.0001	**11.000**	**0.152**	0.00710	< 0.10	0.56	1.80	< 0.05	7.2	< 0.05	6.84	9.64	130.00	950.0	31.60	**512.00**	3.50	< 0.1250
October 2020 - June 2021	Bren Marr; First Flush	STMN0811453764	12/4/2020	1.18	10.5	11/30/2020	0.00012	< 20	**154.0**	88.5	0.0050	**0.0244**	0.10	66.00	**10.20**	0.0062	**4.040**	**0.147**	0.00590	0.52	**2.50**	1.20	< 0.05	6.6	0.23	4.11	10.90	46.40	407.0	18.20	250.00	**105.00**	**0.1600**
October 2020 - June 2021	Bren Marr; Storm Composite	STMN0811453764	12/4/2020	1.18	10.5	11/30/2020	0.00010	3.53	< 25	1.9	0.0012	**0.0198**	< 0.10	11.90	0.53	0.0012	**0.741**	0.029	0.00098	0.17	0.84	0.16	0.05	6.3	0.08	0.88	3.32	< 2.5	35.4	< 1.0	30.00	14.80	< 0.0500
October 2020 - June 2021	FWA; First Flush	STMN0442033318	12/4/2020	1.94	11	11/30/2020	< 0.00008	34.00	37.2	38.9	0.0018	0.0087	< 0.10	106.00	**2.06**	0.0042	**5.210**	**0.242**	0.00180	0.60	< 0.5	0.84	0.15	7.3	0.32	2.06	11.80	18.50	330.0	8.70	211.00	34.00	0.0638
October 2020 - June 2021	FWA; Storm Composite	STMN0442033318	12/4/2020	1.94	11	11/30/2020	0.00008	4.94	32.6	8.4	0.0019	**0.0043**	< 0.10	15.50	0.67	0.0014	**0.768**	0.021	0.00099	< 0.1	0.54	0.20	0.18	6.5	0.23	1.69	3.20	7.01	74.8	2.50	62.00	13.20	0.0275
October 2020 - June 2021	Bren Marr; Baseflow	STMN0811453764	3/18/2021	0.38	15.5	3/6/2020	< 0.0002	52.30	42.4	347.0	0.0021	0.0230	0.22	190.00	**2.02**	0.0013	**14.400**	**0.157**	0.00970	0.13	**114.00**	**3.40**	< 0.05	7.1	0.07	7.68	8.08	216.00	1500.0	39.10	**806.00**	46.60	0.1470
October 2020 - June 2021	Bren Marr; First Flush	STMN0811453764	3/18/2021	0.38	15.5	3/6/2020	< 0.0002	8.46	**122.0**	68.7	0.0103	**0.0254**	< 0.10	28.80	**6.64**	0.0068	**1.860**	**0.127**	0.00510	0.66	**2.10**	0.62	< 0.05	6.2	0.19	1.50	8.14	44.80	290.0	5.30	155.00	94.90	**0.1900**
October 2020 - June 2021	Bren Marr; Storm Composite	STMN0811453764	3/18/2021	0.38	15.5	3/6/2020	< 0.0002	16.60	56.3	148.0	0.0033	**0.0111**	< 0.10	53.40	**1.44**	0.0019	**2.920**	**0.059**	0.00290	0.27	1.10	0.88	< 0.05	6.6	0.07	2.82	4.50	95.90	615.0	10.00	325.00	27.00	0.0599
October 2020 - June 2021	FWA; First Flush	STMN0442033318	3/18/2021	0.57	18	3/1/2021	< 0.0002	136.00	54.0	652.0	< 0.0001	0.0024	< 0.10	433.00	**2.14**	< 0.0010	**22.400**	**1.190**	0.00120	0.28	1.00	0.85	< 0.05	7.7	0.14	4.02	13.70	370.00	**2510.0**	13.00	**1360.00**	22.80	0.0133
October 2020 - June 2021	FWA; Storm Composite	STMN0442033318	3/18/2021	0.57	18	3/1/2021	< 0.0002	28.60	72.6	156.0	0.0040	**0.0187**	< 0.10	89.70	**2.01**	0.0044	**4.420**	**0.234**	0.00330	0.16	1.20	0.55	< 0.05	6.7	0.16	1.58	9.77	99.80	652.0	6.70	358.00	54.60	0.0614

Starting in October, 2020, Fairfax County began piloting changes to the wet weather screening program with an updated, improved SOP at two new sites listed above. Samples were collected using both the old and updated protocols through June, 2021. The program will fully transition to the updated wet weather screening SOP in July, 2021.

There were no predictable, qualifying storm events in Q2, 2021 (Apr-June). We will attempt to monitor two storms in Q3, 2021 (July-Sept).

Analyte value was greater than exceedance criterion

Follow-up actions : All storm event reports with exceedances are sent to our Industrial and High Risk Runoff (IHRR) Group for analysis. Zinc and copper are common urban pollutants, originating from roofs and vehicles. Copper can also come from cooling towers, washing activity, or from water flowing through soil such as groundwater seeps into the storm drainage system joints. Elevated copper and zinc concentrations are common in urban and suburban runoff (Davis, Shokouhian and Ni, 2001), (Pitt, Field, Lalor, & Brown, 1995). The IHRR group performed a desktop analysis and found that observed values were similar to levels commonly found in drinking water, which is an allowable discharge under the permit.

References:

Pitt, R., R. Field, M. Lalor, and M. Brown. 1995. Urban stormwater toxic pollutants: assessment, sources, and treatability. Water Environment Research, 67(3), 260-275.

Davis, A., M. Shokouhian, and S. Ni. 2001. Loading estimates of lead, copper, cadmium, and zinc in urban runoff from specific sources. Chemosphere, 44(5), 997-1009.

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Appendix R11

Summary of Annual Infrastructure Coordination Meetings with VDOT

VSMP Permit Number VA0088587
9-30-2021

Infrastructure Coordination Meeting Agenda
December 17, 2020 – (3:00 - 5:00)
Online Meeting / Teleconference

Attendees:

NVRC	Normand Goulet	**VDOT**	Kun Dong
Prince William Co.	David Ungar		Scott Crafton
	Benjamin Eib		Marian Carroll
Fairfax Co.	Emily Burton		J. Alex Foraste
	Marty Hurd		David Wilson
Arlington Co.	Diana Handy		Tracey Harmon
	Jason Papacosma		Chris Swanson
	Janet Vick		Michelle Fults
			JJ Lightfoot
			Martin Krebbs

1. Mapping Updates
    a. VDOT developed a new story map of the MS4 (virginiaroads.org). This is publicly available and looks useful.
        i. The map displays where their pet waste and litter control signs are as an educational resource.
        ii. Eventually the public will be able to use this story map as a resource to adopt a roadway.
        iii. Has info on storm drain stenciling programs of localities and tries to link to localities as much as possible.
        iv. A brief training on illicit discharges
        v. Map of all VDOT outfalls and culverts. The map has clickable features with data associated with it.
        vi. Map has photos of nutrient credits and where they are able to pull from.
        vii. The map also displays Census Designated Areas
    b. In April 2020, Fairfax County completed an annual update to their MS4 service area according to the governance process described in our SOP. The updates were relatively minor, consisting of changes related to new infrastructure, updated easement information, & corrections from field staff. By request, the county submitted the Service Area geodatabase to DEQ during our MS4 permit reapplication process. The county is amenable to share the data with adjacent MS4s.
    c. Michelle confirmed that she has been working with Fairfax County's GIS (Keith Appler) RE: data sharing and status updates.
    d. Arlington & Fairfax have not heard anything about their permit reissuance.
        i. Arlington County provided comments to their draft permit to DEQ and it has been shared with EPA's NPDES program.
    e. Arlington – no additional updates to the MS4 service area.

i. Arlington County will provide their service area to VDOT so they can compareit to what is currently being displayed on the virginiaroads.org website. The county's outfalls are relatively static

f. Prince William – updated service area last year with the permit application. They have internal use documentation and have been coordinating with Fairfax on their service area review, update, and publishing process.

2. Illicit Discharge Detection Elimination
   a. VDOT - updates to IDDE Field Guide. This is for the field folks and has been streamlined.
      i. Has a program manual too.
   b. VDOT – updates to the program include working with contract owners to have contractors watch the YouTube videos that VDOT is putting out regarding IDDE. VDOT contractors also watch a video on good housekeeping to raise awareness.
   c. Arlington – updating webpages about salt usages and have provided trainings to fire and rescue on how to report IDDE. They are now getting these reports and seeing an uptick in responses due to the training.
   d. Fairfax - Our annual report documented 84 confirmed illicit discharges, seven of which resulted in corrective actions and/or reinspections to confirm the discharges were eliminated. So far this year, there have already been 81 investigations and 32 confirmed illicit discharges, which included swimming pool discharges, construction site runoff, dumping/dumpster issues, and automotive fluids. The inspectors are addressing all reports they have received.
      i. Brief update on Operation Stream Shield and how this program interacts with IDID.
3. Chesapeake Bay and Local TMDL Action Plans
   a. VDOT
      i. Provided a brief overview of the projects they worked on, including completion of the Pipe Branch stream restoration project in Fairfax county. The project restored over 4,000 linear feet and resulted in reductions of Nitrogen (9,000 lbs/yr) and Phosphorus (3,700 lbs/yr).
      ii. Developed an addendum on their projects. This has a 'one-pager' that is useful for a high-level overview.
         1. They will use this for their pollinator program to identify areas to have these and count them towards their fish and wildlife agreements. ROW has never been mapped to this level.
   b. Fairfax
      i. Fairfax asked for an update on the Fairfax County BOS letter to VDOT requesting that VDOT incorporate the county's local design standards into VDOT construction projects. Chris responded that he was not aware of a formal response, but that it is indeed VDOT's policy to comply with local regulations and design requirements.
      ii. Fairfax asked for an update from last year's meeting regarding the nutrient credit purchases for VDOT construction projects. Fairfax County would prefer that MS4s implement BMPs onsite where waterbodies have TMDLs or water quality impairments. Chris responded that nutrient credit purchases are VDOT's

preferred alternative, given the cost per pound. VDOT does comply with regulations and does not purchase nutrient credits when local VSMP authorities prohibit their use.

iii. Fairfax mentioned the VDOT project near Scott's Run (I-495 widening); the county's stormwater planning staff is working with VDOT project managers to maximize opportunities to implement a partnership project but did not have specific information.

iv. This year, NVRC developed PCB outreach materials that all of the MS4s in the region can use. Our IHRR team is incorporating the material into the materials distributed during inspections of facilities with SIC codes that have the potential to contribute PCBs to the MS4 through stormwater as part of our local PCB TMDL action plan efforts.

c. Arlington and Prince William
    i. No updates.

d. Salt Management Strategy
    i. VDOT provided an overview on the SaMS process and let everyone know that the public comment period is open now.
    ii. Fairfax provided an update on progress made to implement SaMS to date; including enhanced training, improved calibration methods, equipment purchasing, new salt dome construction, and improved recordkeeping to facilitate better tracking and reporting capabilities.
    iii. Arlington is also doing similar things to get ahead of the curve and plan for developments of a Chloride TMDL Action Plan.
    iv. NVRC plans to take over hosting the SaMS information via the internet, but there are no firm plans yet on maintenance or updates to the toolkit.

4. Credits for TMDL Implementation
    a. The MS4 programs continue to coordinate to ensure accurate reporting RE: TMDL progress tracking.
5. Water Quality Monitoring
    a. VDOT does not have any specific needs for monitoring data at this time.
    b. Arlington – RE: MS4 permit negotiations; the county is thinking about what data to collect that will be meaningful.
    c. Fairfax County's Watershed Assessment Branch continues to collect water quality, biological, and physical habitat data and reiterated that the county can provide the information to VDOT and other partners present if it would be useful for their programs.
6. Updates from 2019 VDOT Coordination Meeting
    a. Fairfax - Marty mentioned that Urban Forestry in Fairfax is still looking for ways to meet tree canopy goals and that there could be potential partnership opportunities with VDOT – Marian will act as the initial POC for these discussions.
7. Annual Coordination Meetings moving forward
    a. Norm will set a reminder to re-engage the parties and set up another coordination meeting in the fall of 2021

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Appendix R12

Summary of The Biological Monitoring Results and Analyses and an Interpretation of that Data with Respect to Long-Term Patterns/Trends

VSMP Permit Number VA0088587
9-30-2021

During the 2020 permit cycle, the five selected bioassessment sites within Fairfax County were monitored twice for benthic macroinvertebrates and habitat. Fairfax County uses the EPA rapid bioassessment protocol (RBP) multi-habitat benthic survey (20-jab method) and subsamples to approximately 200 individuals, which are identified to the lowest practicable level (usually genus). In order to calculate the Virginia Stream Condition Index (VSCI), the sample is rarified to 110 individuals and then aggregated to family (and some higher-level taxa) for analysis.

Although the benthic macroinvertebrate assemblage scored consistently higher on the Virginia Stream Condition Index (VSCI) in the fall monitoring period compared to the spring, scores ranged from Slightly Impaired (1) to Severely Impaired (3). While the spring samples were dominated by Chironomidae and oligochaetes, the fall samples continue to be dominated by tolerant Trichoptera (Philopotamidae and Hydropsychidae) with a distinct lack of Chironomidae and oligochaetes. Additionally, the fall samples held an average of four more taxa than the spring samples.

Fairfax County utilizes stream habitat assessments modified from EPA's RBP. Certain environmental factors can influence habitat scores such as differing water levels, vegetative growth depending on the season the assessment was done, or antecedent weather conditions.

With respect to trends, a distinct increase in the fall VSCI scores over the spring samples has been a consistent over the last four years. It appears there is seasonal variation among Piedmont MS4 sites, requiring further study (outside the scope) of the MS4 permit requirements. Valid long-term trend assessments cannot yet be made with only 5 years of annual data. However, sufficient data has been collected to establish a "baseline" biological condition for these sites.

Site ID	Latitude	Longitude	Season	Virginia SCI (out of 100)	Rating	Habitat Scores (out of 200)
01645704 – Difficult Run	38°53'04.5"	77°19'57.8" NAD27	Fall	41.8	Impaired (1)	101
			Spring	18.1	Impaired (3)	110
01645762 – South Fork Little Difficult Run	38°54'35"	77°20'14.6" NAD27	Fall	52.3	Impaired (1)	110
			Spring	18.3	Impaired (3)	111
01646305 – Dead Run	38°57'34.8"	77°10'33.5" NAD27	Fall	33.8	Impaired (2)	141
			Spring	24.7	Impaired (2)	139
01654500 – Long Branch	38°48'39"	77°14'07" NAD27	Fall	40.6	Impaired (1)	107
			Spring	18.9	Impaired (3)	114
01656903 – Flatlick Branch	38°52'56.2"	77°25'55.9" NAD27	Fall	32.8	Impaired (2)	131
			Spring	27.3	Impaired (2)	132

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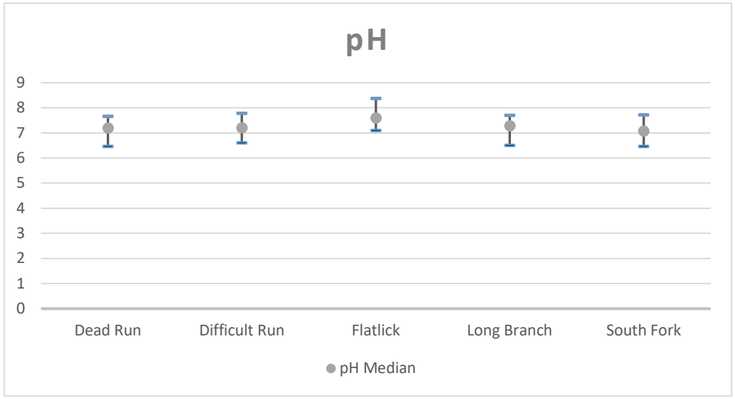
Appendix R13

In-Stream Monitoring Report

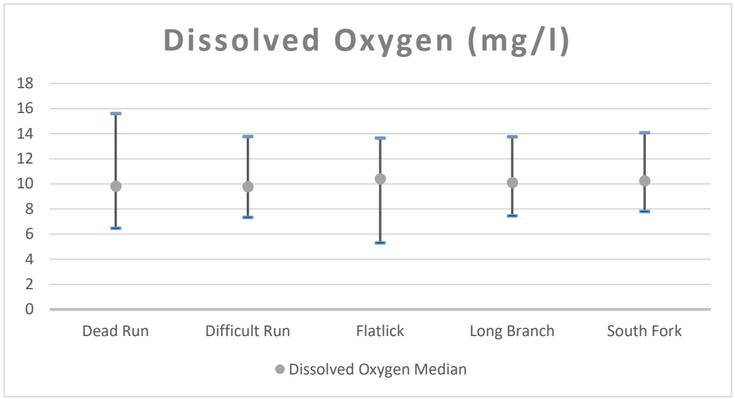
VSMP Permit Number VA0088587
9-30-2021

The in-stream monitoring sites began monitoring during reporting period 2017, trends will be evaluated in the future when sufficient data has been gathered.

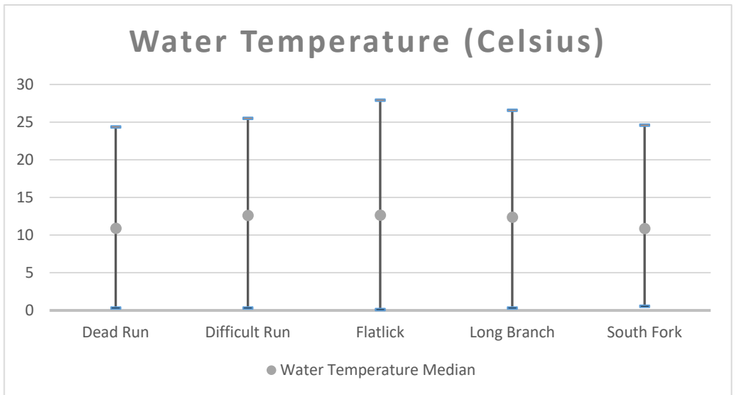
			pH		
	Latitude	Longitude	Min	Max	Median
Dead Run	38°57'34.8"	77°10'33.5" NAD27	6.46	7.66	7.2
Difficult Run	38°53'04.5"	77°19'57.8" NAD27	6.6	7.78	7.21
Flatlick	38°52'56.2"	77°25'55.9" NAD27	7.09	8.37	7.595
Long Branch	38°48'39"	77°14'07" NAD27	6.5	7.7	7.29
South Fork	38°54'35"	77°20'14.6" NAD27	6.46	7.72	7.07



			Dissolved Oxygen		
	Latitude	Longitude	Min	Max	Median
Dead Run	38°57'34.8"	77°10'33.5" NAD27	6.46	15.61	9.82
Difficult Run	38°53'04.5"	77°19'57.8" NAD27	7.33	13.78	9.785
Flatlick	38°52'56.2"	77°25'55.9" NAD27	5.31	13.66	10.415
Long Branch	38°48'39"	77°14'07" NAD27	7.46	13.76	10.1
South Fork	38°54'35"	77°20'14.6" NAD27	7.79	14.07	10.255

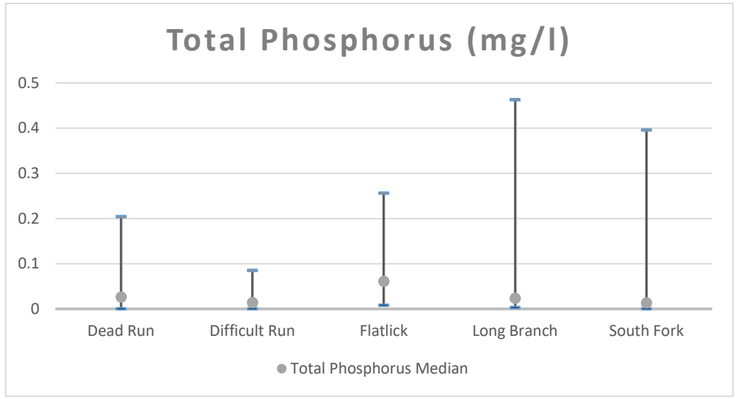


			Water Temperature		
	Latitude	Longitude	Min	Max	Median
Dead Run	38°57'34.8"	77°10'33.5" NAD27	0.305	24.363	10.9255
Difficult Run	38°53'04.5"	77°19'57.8" NAD27	0.33	25.49	12.6395
Flatlick	38°52'56.2"	77°25'55.9" NAD27	0.106	27.91	12.653
Long Branch	38°48'39"	77°14'07" NAD27	0.306	26.588	12.395
South Fork	38°54'35"	77°20'14.6" NAD27	0.55	24.603	10.87

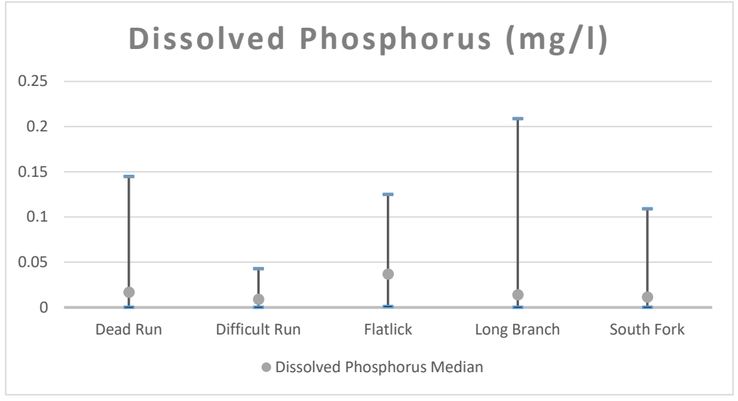


The in-stream monitoring sites began monitoring during reporting period 2017, trends will be evaluated in the future when sufficient data has been gathered.

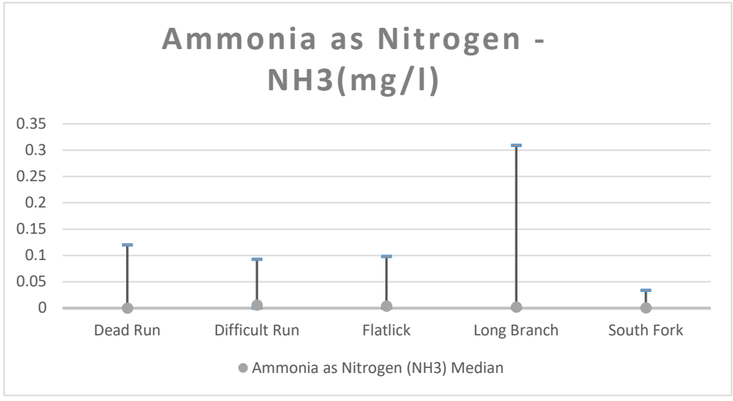
			Total Phosphorus		
	Latitude	Longitude	Min	Max	Median
Dead Run	38°57'34.8"	77°10'33.5" NAD27	0	0.204	0.0265
Difficult Run	38°53'04.5"	77°19'57.8" NAD27	0	0.085	0.014
Flatlick	38°52'56.2"	77°25'55.9" NAD27	0.008	0.256	0.061
Long Branch	38°48'39"	77°14'07" NAD27	0.003	0.463	0.024
South Fork	38°54'35"	77°20'14.6" NAD27	0	0.396	0.0135



			Dissolved Phosphorus		
	Latitude	Longitude	Min	Max	Median
Dead Run	38°57'34.8"	77°10'33.5" NAD27	0	0.145	0.017
Difficult Run	38°53'04.5"	77°19'57.8" NAD27	0	0.043	0.009
Flatlick	38°52'56.2"	77°25'55.9" NAD27	0.001	0.125	0.037
Long Branch	38°48'39"	77°14'07" NAD27	0	0.209	0.014
South Fork	38°54'35"	77°20'14.6" NAD27	0	0.109	0.0115

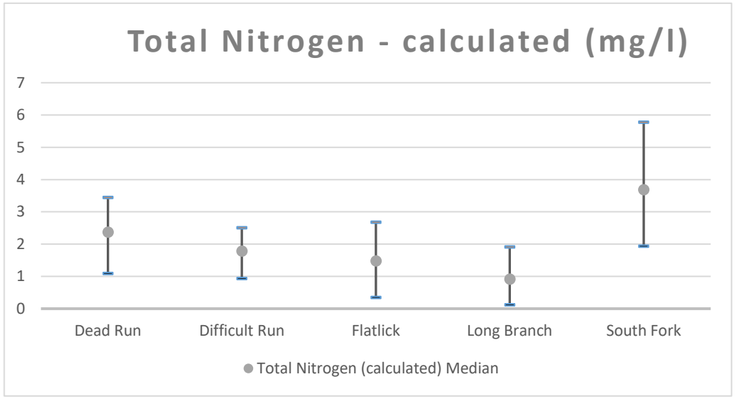


			Ammonia as Nitrogen (NH3)		
	Latitude	Longitude	Min	Max	Median
Dead Run	38°57'34.8"	77°10'33.5" NAD27	0	0.12	0
Difficult Run	38°53'04.5"	77°19'57.8" NAD27	0	0.093	0.006
Flatlick	38°52'56.2"	77°25'55.9" NAD27	0	0.098	0.004
Long Branch	38°48'39"	77°14'07" NAD27	0	0.309	0.002
South Fork	38°54'35"	77°20'14.6" NAD27	0	0.034	0.0005

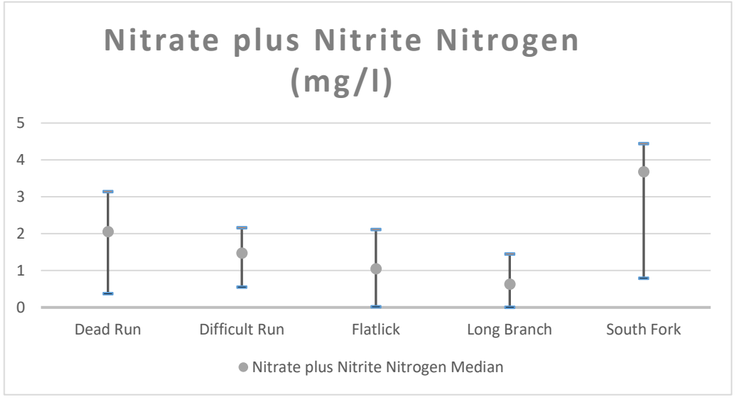


The in-stream monitoring sites began monitoring during reporting period 2017, trends will be evaluated in the future when sufficient data has been gathered.

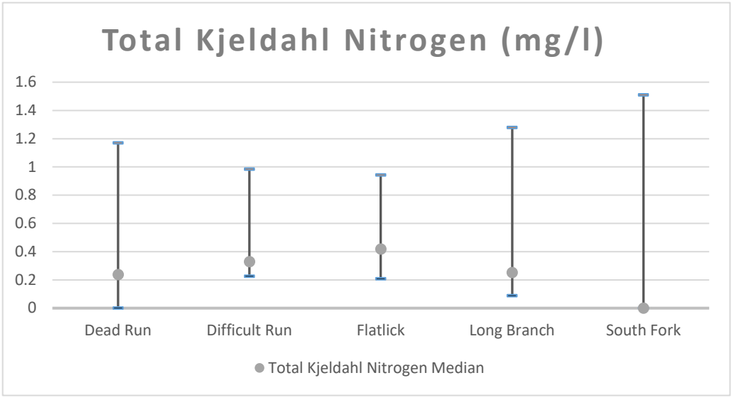
			Total Nitrogen (calculated)		
	Latitude	Longitude	Min	Max	Median
Dead Run	38°57'34.8"	77°10'33.5" NAD27	1.09	3.45	2.375
Difficult Run	38°53'04.5"	77°19'57.8" NAD27	0.937	2.51	1.79
Flatlick	38°52'56.2"	77°25'55.9" NAD27	0.346	2.68	1.48
Long Branch	38°48'39"	77°14'07" NAD27	0.121	1.91	0.918
South Fork	38°54'35"	77°20'14.6" NAD27	1.94	5.78	3.685



			Nitrate plus Nitrite Nitrogen		
	Latitude	Longitude	Min	Max	Median
Dead Run	38°57'34.8"	77°10'33.5" NAD27	0.376	3.14	2.055
Difficult Run	38°53'04.5"	77°19'57.8" NAD27	0.552	2.16	1.475
Flatlick	38°52'56.2"	77°25'55.9" NAD27	0.016	2.11	1.05
Long Branch	38°48'39"	77°14'07" NAD27	0	1.45	0.63
South Fork	38°54'35"	77°20'14.6" NAD27	0.79	4.44	3.685

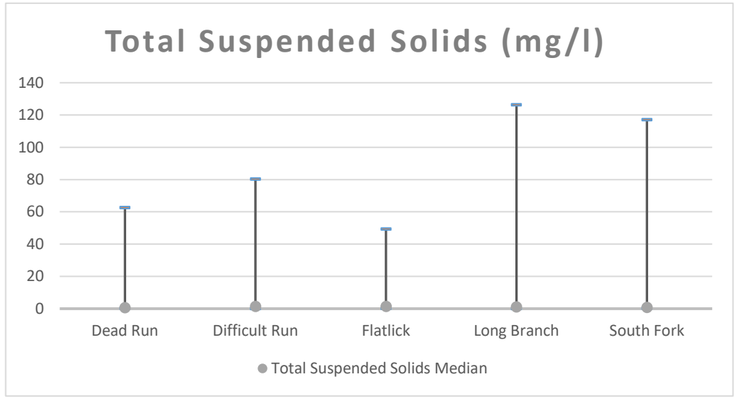


			Total Kjeldahl Nitrogen		
	Latitude	Longitude	Min	Max	Median
Dead Run	38°57'34.8"	77°10'33.5" NAD27	0	1.17	0.2395
Difficult Run	38°53'04.5"	77°19'57.8" NAD27	0.227	0.984	0.3305
Flatlick	38°52'56.2"	77°25'55.9" NAD27	0.209	0.944	0.42
Long Branch	38°48'39"	77°14'07" NAD27	0.088	1.28	0.253
South Fork	38°54'35"	77°20'14.6" NAD27	0	1.51	0

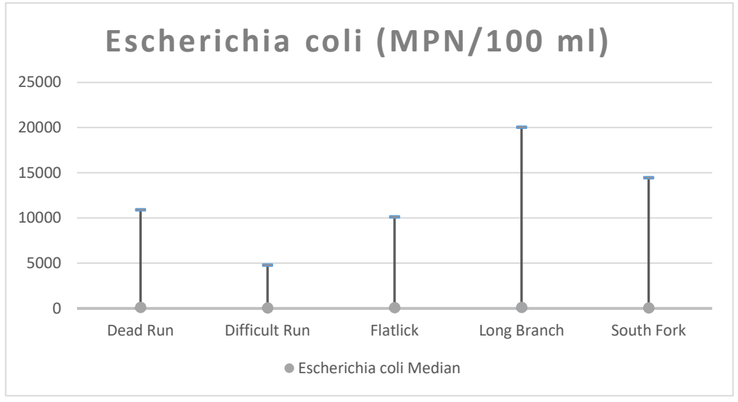


The in-stream monitoring sites began monitoring during reporting period 2017, trends will be evaluated in the future when sufficient data has been gathered.

			Total Suspended Solids		
	Latitude	Longitude	Min	Max	Median
Dead Run	38°57'34.8"	77°10'33.5" NAD27	0.2	62.7	0.75
Difficult Run	38°53'04.5"	77°19'57.8" NAD27	0.1	80.3	1.45
Flatlick	38°52'56.2"	77°25'55.9" NAD27	0.2	49.4	1.55
Long Branch	38°48'39"	77°14'07" NAD27	0.1	126.4	1.15
South Fork	38°54'35"	77°20'14.6" NAD27	0.2	117.2	0.8



			Escherichia coli		
	Latitude	Longitude	Min	Max	Median
Dead Run	38°57'34.8"	77°10'33.5" NAD27	2	10910	125.5
Difficult Run	38°53'04.5"	77°19'57.8" NAD27	8	4780	70
Flatlick	38°52'56.2"	77°25'55.9" NAD27	8	10130	89
Long Branch	38°48'39"	77°14'07" NAD27	9	20050	123
South Fork	38°54'35"	77°20'14.6" NAD27	3	14450	68



LONG BRANCH	Units	7/14/20	9/15/20	11/17/20	1/26/21	3/18/21	5/11/21
pH	pH Units	7.7	7.34	7.17	7.33	7.29	7.29
Dissolved Oxygen	mg/L	8.77	9.21	10.52	12.74	11.39	9.84
Water Temperature	Celsius	26.588	18.437	10.016	3.36	9.06	15.545
Total Phosphorus	mg/L	0.026	0.023	0.007	0.021	0.056	0.04
Dissolved Phosphorus	mg/L	0.015	0.014	0.005	0.012	0.042	0.003
Ammonia as Nitrogen (NH3)	mg/L	0.018	0	0	0.053	0.103	0.04
Total Nitrogen (calculated)	mg/L	0.592	1.14	1.12	1.56	1.91	1.27
Nitrate plus Nitrite Nitrogen	mg/L	0.353	0.848	0.832	1.23	1.2	0.969
Total Kjeldahl Nitrogen	mg/L	0.24	0.29	0.289	0.33	0.718	0.304
Total Suspended Solids	mg/L	1.6	0.2	0.9	0.7	3.6	0.8
Escherichia coli	MPN/100ml	134	306	80	94	1013	24

FLATLICK	Units	7/14/20	9/15/20	11/17/20	1/26/21	3/18/21	5/11/21
pH	pH Units	8	7.81	7.76	8.37	7.1	7.69
Dissolved Oxygen	mg/L	9.31	8.94	11.69	13.58	10.42	11.07
Water Temperature	Celsius	24.981	18.745	9.93	4.872	9.66	16.971
Total Phosphorus	mg/L	0.043	0.045	0.018	0.021	0.051	0.079
Dissolved Phosphorus	mg/L	0.018	0.046	0.005	0.018	0.01	0.032
Ammonia as Nitrogen (NH3)	mg/L	0.008	0	0	0.042	0.068	0.023
Total Nitrogen (calculated)	mg/L	0.951	1.49	1.77	1.43	1.42	1.08
Nitrate plus Nitrite Nitrogen	mg/L	0.605	1.04	1.36	1.07	0.851	0.722
Total Kjeldahl Nitrogen	mg/L	0.346	0.446	0.414	0.366	0.569	0.359
Total Suspended Solids	mg/L	0.7	0.5	0.4	3.4	5.7	0.7
Escherichia coli	MPN/100ml	42	89	145	219	3060	83

DEAD RUN	Units	7/14/20	9/15/20	11/17/20	1/26/21	3/18/21	5/11/21
pH	pH Units	7.35	7.36	7.34	7.36	7.11	6.82
Dissolved Oxygen	mg/L	7.58	9.3	10.84	11.9	10.88	9.06
Water Temperature	Celsius	20.898	18.168	9.348	3.5	9.39	12.885
Total Phosphorus	mg/L	0.023	0.033	0.017	0.004	0.06	0.013
Dissolved Phosphorus	mg/L	0.021	0.032	0.008	0.008	0.035	0.005
Ammonia as Nitrogen (NH3)	mg/L	0.006	0	0	0.01	0.112	0.059
Total Nitrogen (calculated)	mg/L	2.12	3.45	2.36	2.79	2.84	2.56
Nitrate plus Nitrite Nitrogen	mg/L	2.07	2.28	2.36	2.46	1.97	2.5
Total Kjeldahl Nitrogen	mg/L	0.055	1.17	0	0.33	0.87	0.062
Total Suspended Solids	mg/L	0.7	0.5	0.3	1.2	12.6	4.7
Escherichia coli	MPN/100ml	58	2005	120	885	2005	49

SOUTH FORK	Units	7/14/20	9/15/20	11/17/20	1/26/21	3/18/21	5/11/21
pH	pH Units	7.14	7.21	7.07	7.67	6.64	7.06
Dissolved Oxygen	mg/L	7.97	9.24	10.83	12.86	11.03	10.21
Water Temperature	Celsius	21.544	17.215	8.633	3.984	8.815	13.291
Total Phosphorus	mg/L	0.011	0.016	0.009	0.005	0.016	0.018
Dissolved Phosphorus	mg/L	0.007	0.005	0	0.014	0.01	0.012
Ammonia as Nitrogen (NH3)	mg/L	0.001	0	0	0.001	0.016	0.024
Total Nitrogen (calculated)	mg/L	3.99	4.35	3.84	4.36	5.78	4.27
Nitrate plus Nitrite Nitrogen	mg/L	3.99	4.35	3.84	4.36	4.27	4.26
Total Kjeldahl Nitrogen	mg/L	0	0	0	0	1.51	0.015
Total Suspended Solids	mg/L	5.5	0.5	0.5	0.6	3.5	0.8
Escherichia coli	MPN/100ml	91	155	98	104	76	45

DIFFICULT RUN	Units	7/14/20	9/15/20	11/17/20	1/26/21	3/18/21	5/11/21
pH	pH Units	7.24	7.32	7.24	7.78	6.6	7.26
Dissolved Oxygen	mg/L	7.4	8.42	10.38	12.57	10.83	9.54
Water Temperature	Celsius	22.944	18.356	9.398	4.053	9.056	14.759
Total Phosphorus	mg/L	0.005	0.024	0.005	0	0.02	0.008
Dissolved Phosphorus	mg/L	0.003	0.012	0.007	0.008	0.002	0.002
Ammonia as Nitrogen (NH3)	mg/L	0.002	0	0.008	0.029	0.015	0.053
Total Nitrogen (calculated)	mg/L	2.01	1.56	1.94	2.19	2.51	2.37
Nitrate plus Nitrite Nitrogen	mg/L	1.66	1.24	1.59	1.89	2.16	2.02
Total Kjeldahl Nitrogen	mg/L	0.347	0.321	0.348	0.302	0.357	0.341
Total Suspended Solids	mg/L	1.2	3.2	4.3	2.2	10.7	2.3
Escherichia coli	MPN/100ml	186	2000	101	84	150	72

Fairfax County 2021 MS4 Program Plan and Annual Report

Appendix R14

A Summary of the Monitoring Results and Analyses from the Floatables Monitoring

Clean Fairfax
9-30-2021

Monitoring protocol summary and List of sites sampled

Floatables monitoring for permit compliance purposes was conducted at five (5) monitoring sites located at MS4 outfalls. Sites were chosen to be representative of the primary land cover classes that occur in the MS4 service area: High, Medium, and Low Density Residential, Commercial, and Institutional. The StormNet IDs and land cover classifications for the floatable monitoring sites are:

1. STMN0212404236 - 83% Low Density Residential (LDR)
2. STMN0293016090 - 93% Commercial
3. STMN0583435398 - 89% Institutional
4. STMN0651048577 - 100% Medium Density Residential (MDR)
5. STMN0791456509 - 87% High Density Residential (HDR)

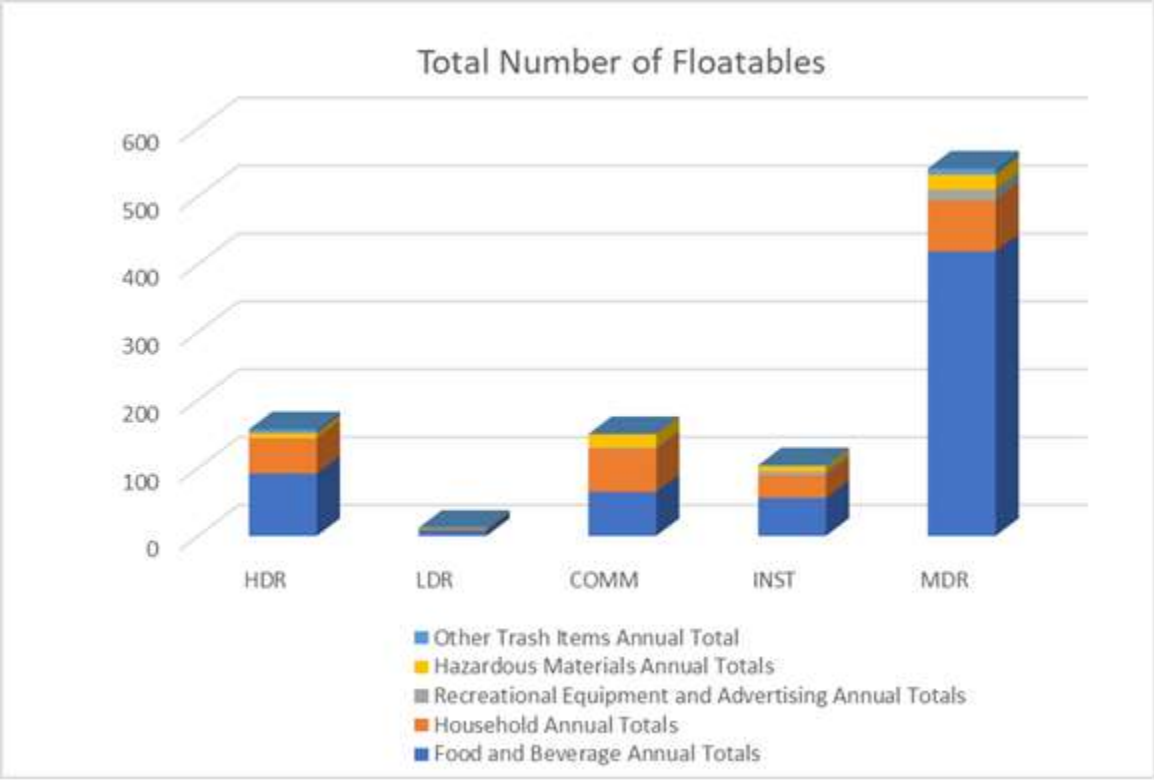
Monitoring is conducted once per quarter. During monitoring events, staff count the number of floatables visually observed within the bank full area for 100 linear feet below the MS4 outfall. Staff remove all litter all from sites immediately after floatable counts are recorded in order to prevent the potential to double-count floatables.

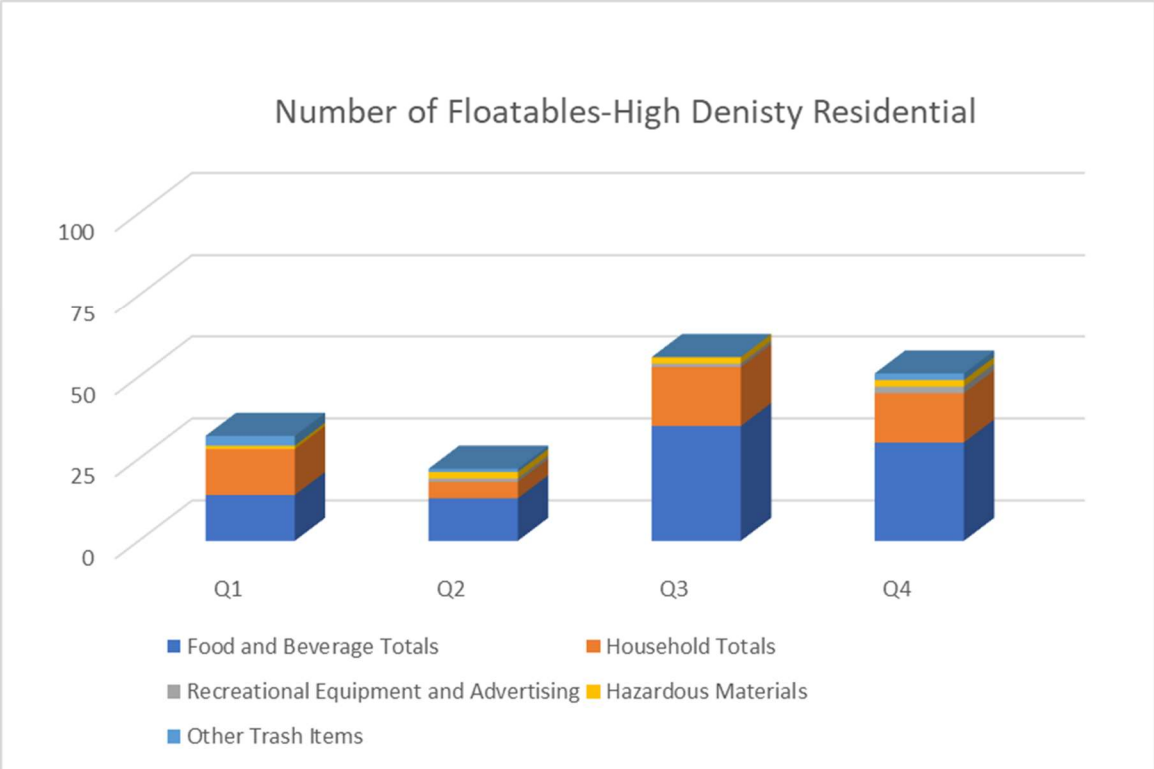
During this reporting period, additional monitoring was conducted at 36 sites. These outfalls were monitored to supplement data collected at compliance sites and provide confidence that data collected for compliance purposes are representative of the County's MS4 discharges. Data collected from these supplemental sites is currently being reviewed and will be included in future summaries of floatables data.

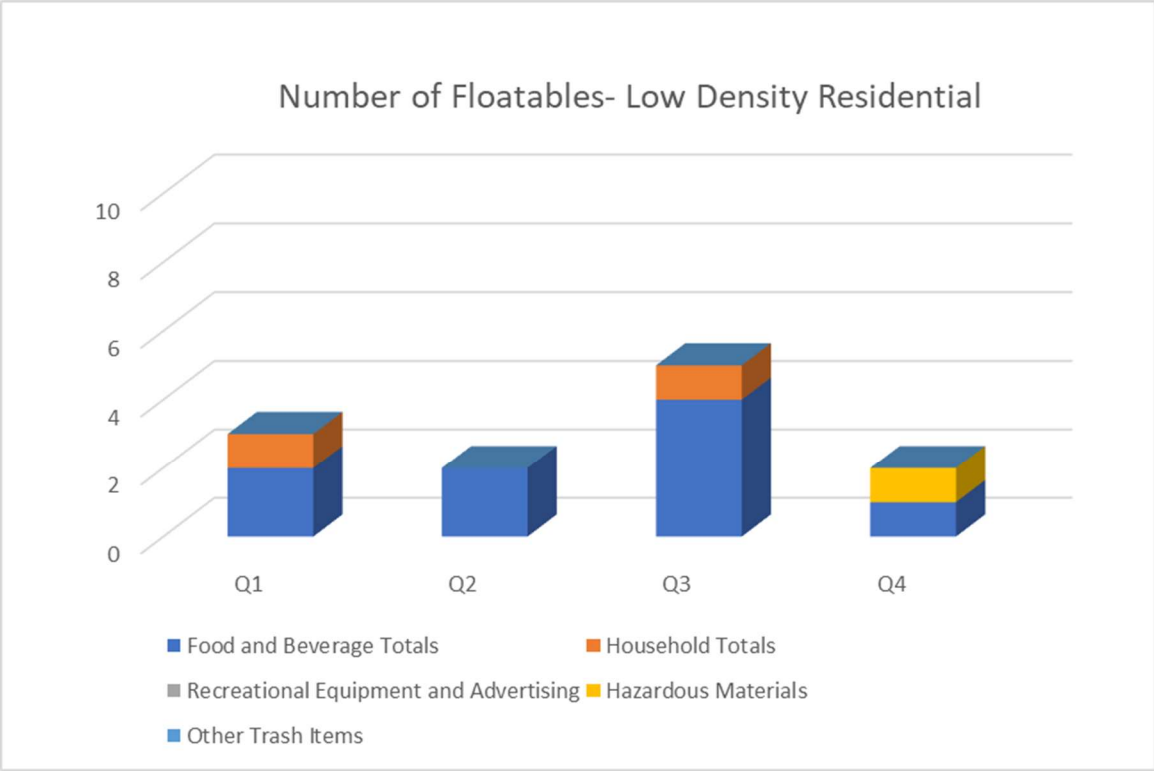
Low Density Residential	Commercial	Medium Density Residential	Institutional
STMN1021485523	STMN0833461205	STMN0824461959	STMN0302408772
STMN1021485536	STMN0833461209	STMN0922471604	STMN0493087995
STMN1021485172	STMN0493424290	STMN0824078259	
STMN1021485168	STMN0493424276	STMN0824461346	
STMN1021485179	STMN0792456075	STMN0824461334	
STMN0302408835	STMN0792456113	STMN0402414865	
STMN0302408790	STMN0792456270	STMN0214507156	
STMN0302408793	STMN0704446331		
STMN0402414843			
STMN0402414853			
STMN0402415025			
STMN0402415048			
STMN0402415004			
STMN0703447606			
STMN0792455970			
STMN0703447609			
STMN0704446364			
STMN0713445800			
STMN0713446083			

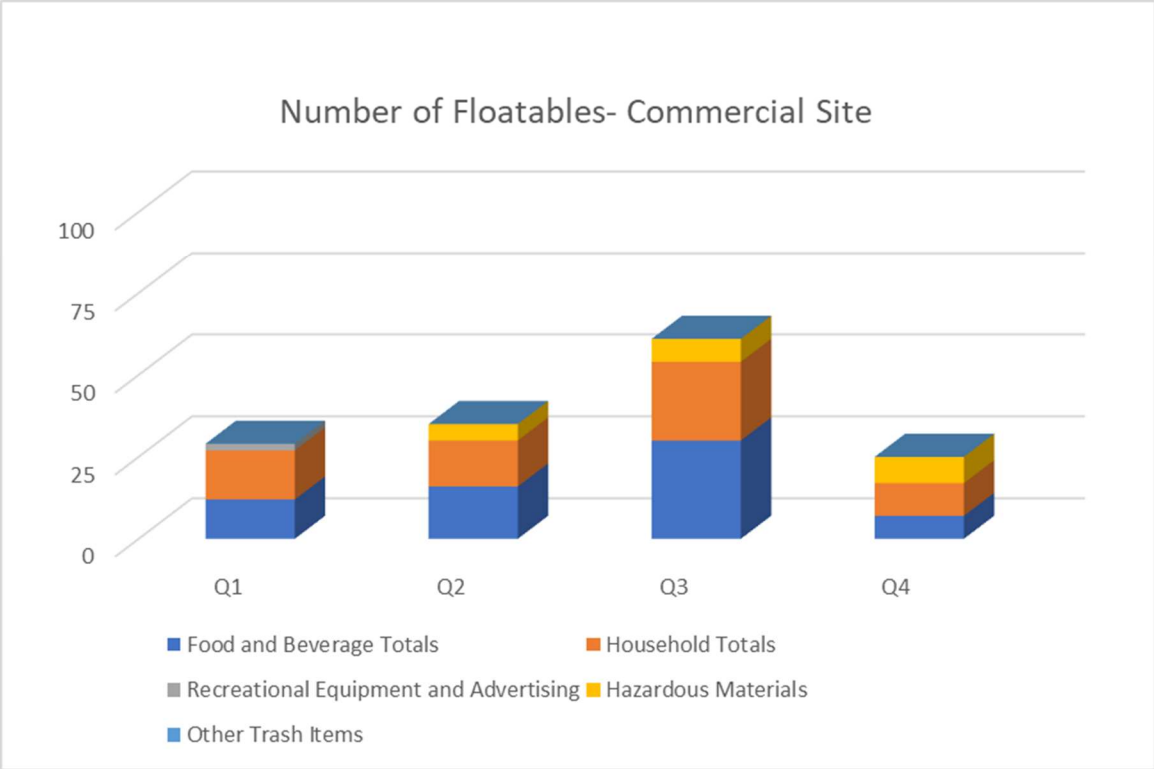
Summary of Monitoring Results

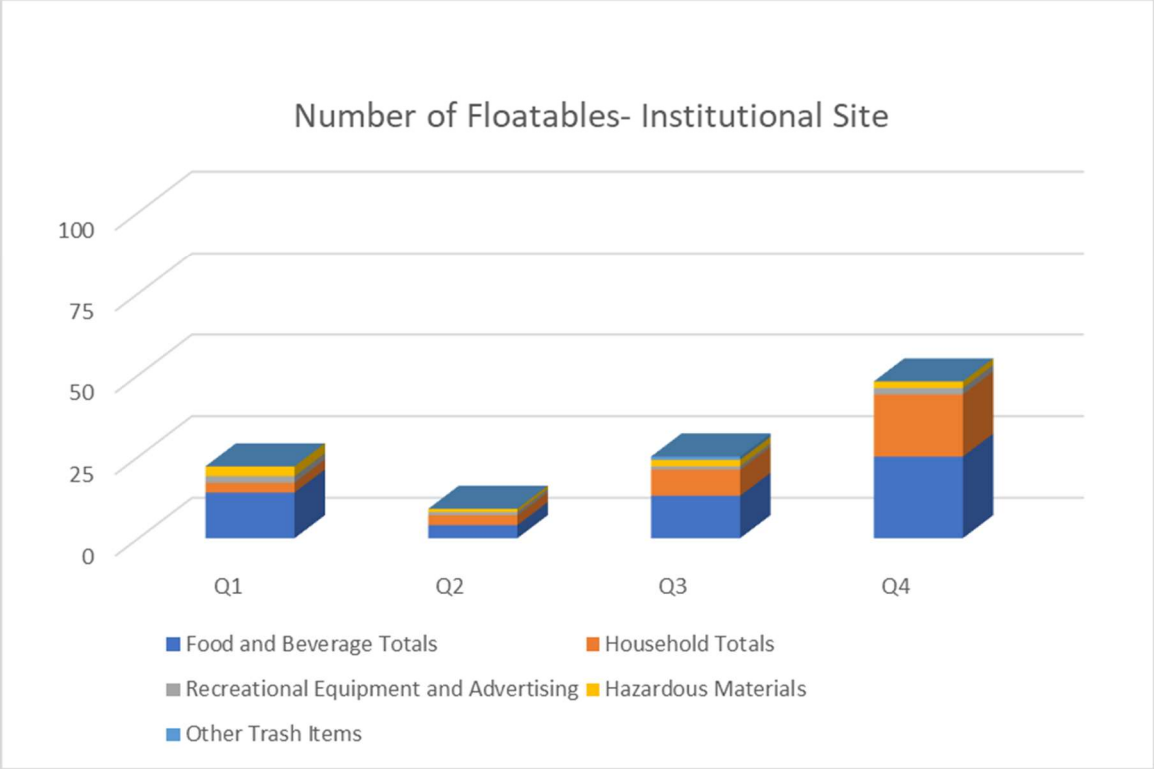
Floatables are consistently found in the highest numbers at the medium density residential site, and in the lowest numbers at the low-density residential site. Food and beverage containers, such as bottles, plastic bags, and wrappers are typically found in highest numbers across all of the sites.

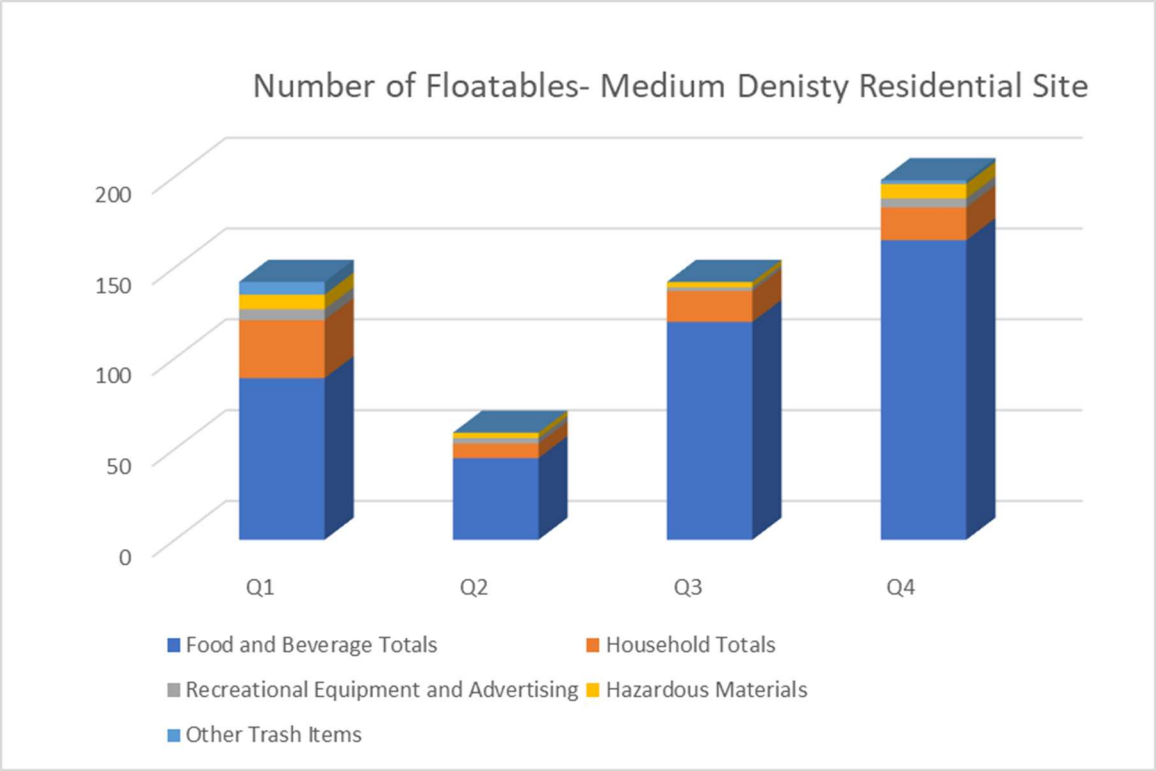



Number of Floatables-High Denisty Residential
100
75
50
25
0
Q1
Q2
Q3
Q4
Food and Beverage Totals
Household Totals
Recreational Equipment and Advertising
Hazardous Materials
Other Trash Items


Number of Floatables- Low Density Residential
10
8
6
4
2
0
Q1
Q2
Q3
Q4
Food and Beverage Totals
Household Totals
Recreational Equipment and Advertising
Hazardous Materials
Other Trash Items


Number of Floatables- Commercial Site
100
75
50
25
0
Q1
Q2
Q3
Q4
Food and Beverage Totals
Household Totals
Recreational Equipment and Advertising
Hazardous Materials
Other Trash Items


Number of Floatables- Institutional Site
100
75
50
25
0
Q1
Q2
Q3
Q4
Food and Beverage Totals
Household Totals
Recreational Equipment and Advertising
Hazardous Materials
Other Trash Items


Number of Floatables- Medium Denisty Residential Site
200
150
100
50
0
Q1
Q2
Q3
Q4
Food and Beverage Totals
Household Totals
Recreational Equipment and Advertising
Hazardous Materials
Other Trash Items

Fairfax County 2021 MS4 Program Plan and Annual Report

Appendix R15

Database of SWM Facilities Brought Online
During the Reporting Period
(FY21_FairfaxCounty_BMPData.xlsx)

VSMP Permit Number VA0088587
9-30-2021

Facility ID	Site ID	Maintained By	Date Installed	BMP Name	Impervious Acres Treated (ac)	Pervious Acres Treated (ac)	Inspection Date/Year	Facility Address	Facility City/State/Zip	PMA	Latitude	Longitude	HUC6	Receiving Water Name	Receiving Water ID	Receiving Water Impaired	Facility Discharges to Fairfax County's MS4?
1199DP	1314S	Public	11/19/2020	EXTENDED DETENTION DRY POND	1.6400	1.1300	FY22	between 7707 & 7709 Tanner Robert Ct.	Springfield, VA 22153	YES	38.735855	-77.210818	PL29	Pohick Creek	VAN-A16R_PCH01B14	Yes	Yes
2121DP	1315S	Public	8/4/2020	EXTENDED DETENTION DRY POND	7.1000	3.0000	FY22	adjacent to 9230 Wood Violet Ct.	Fairfax, VA 22031	NO	38.870404	-77.265554	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	Yes
2123TF	1317S	Public	9/28/2020	MANUFACTURED BMP (PROPRIETARY) / FILTERRA	INFORMATION WAS NOT PROVIDED	INFORMATION WAS NOT PROVIDED	FY23	2205 Rock Hill Rd.	Herndon, VA 20170-4006	NO	38.962338	-77.418188	PL18	Horsepen Run	VAN-A09R_ZZZ18A00	No	No
2124TF	1317S	Public	9/28/2020	MANUFACTURED BMP (PROPRIETARY) / FILTERRA	INFORMATION WAS NOT PROVIDED	INFORMATION WAS NOT PROVIDED	FY23	2205 Rock Hill Rd.	Herndon, VA 20170-4006	NO	38.962317	-77.418066	PL18	Horsepen Run	VAN-A09R_ZZZ18A00	No	No
2125TF	1317S	Public	9/28/2020	MANUFACTURED BMP (PROPRIETARY) / FILTERRA	INFORMATION WAS NOT PROVIDED	INFORMATION WAS NOT PROVIDED	FY23	2205 Rock Hill Rd.	Herndon, VA 20170-4006	NO	38.962858	-77.416875	PL18	Horsepen Run	VAN-A09R_ZZZ18A00	No	No
2126DP	1318S	Public	1/13/2021	EXTENDED DETENTION DRY POND	0.3300	1.3300	FY22	adjacent to 9218 Old Burke Lake Rd. (at street's turnaround end)	Burke, VA 22015	NO	38.801616	-77.263943	PL29	Pohick Creek	VAN-A16R_ZZZ29A00	No	Yes
2127DP	1319S	Public	1/13/2021	EXTENDED DETENTION DRY POND	1.0000	3.4300	FY22	Leesburg Pi. / Royal Estates Dr.	Vienna, VA 22182	YES	38.94703	-77.258457	PL22	Wolftrap Creek	VAN-A11R_WOT01B06	Yes	Yes
2128DP	1320S	Public	1/14/2021	ENHANCED EXTENDED DETENTION DRY POND	2.5500	4.2900	5/6/2021	opposite 4383 Strawflower St.	Fairfax, VA 22030	YES	38.850018	-77.342312	PL22	Difficult Run	VAN-A11R_ZZZ22A00	No	No
2129DP	1320S	Public	1/14/2021	ENHANCED EXTENDED DETENTION DRY POND	1.9900	3.1500	5/6/2021	opposite 4401 Strawflower St.	Fairfax, VA 22030	YES	38.848341	-77.342435	PL22	Difficult Run	VAN-A11R_ZZZ22A00	No	Yes
2130GR	1321S	Public	2/4/2021	VEGETATED ROOF	0.0300	0.0000	FY23	5914 Seminary Rd.	Falls Church, VA 22041	YES	38.849152	-77.129165	PL25	Potomac River/Four Mile Run	VAN-A12R_ZZZ25A00	No	No
2131MB	1321S	Public	2/4/2021	MANUFACTURED BMP (PROPRIETARY) / CONTECH CDS	0.2900	0.0300	FY22	5914 Seminary Rd.	Falls Church, VA 22041	YES	38.848936	-77.129097	PL25	Potomac River/Four Mile Run	VAN-A12R_ZZZ25A00	No	No
2132UG	1321S	Public	2/4/2021	UNDERGROUND DETENTION	0.4200	0.0400	FY22	5914 Seminary Rd.	Falls Church, VA 22041	YES	38.849001	-77.128962	PL25	Potomac River/Four Mile Run	VAN-A12R_ZZZ25A00	No	No
2133BR	1322S	Public	2/11/2021	BIORETENTION	0.3800	0.0000	FY23	5414 Ladue Ln.	Fairfax, VA 22030	NO	38.816307	-77.341831	PL46	Lower Bull Run	VAN-A23R_ZZZ46A00	No	No
2138TR	1323S	Public	2/12/2021	INFILTRATION PRACTICE	0.1100	0.0000	FY22	4450 Upper Cub Run Dr.	Chantilly, VA 20151	NO	38.894529	-77.464698	PL45	Cub Run	VAN-A22R_ZZZ45A00	No	No
2140WP	FCPS0034	Public	2/10/2021	WET POND	24.6700	0.0000	FY22	3020 Gallows Rd.	Falls Church, VA 22042	NO	38.866861	-77.231358	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	Yes
2141TR	FCPS0034	Public	2/10/2021	INFILTRATION PRACTICE	0.4100	0.0000	FY22	3020 Gallows Rd.	Falls Church, VA 22042	NO	38.868435	-77.230572	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	Yes
2146RF	FCPS0034	Public	2/10/2021	REFORESTATION	0.0000	0.1600	FY22	3020 Gallows Rd.	Falls Church, VA 22042	NO	38.866635	-77.231151	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	Yes
2147RF	FCPS0034	Public	2/10/2021	REFORESTATION	0.0000	0.2600	FY22	3020 Gallows Rd.	Falls Church, VA 22042	NO	38.868068	-77.23245	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	Yes
2148DP	1324S	Public	3/5/2021	DRY POND (PEAK SHAVER)	0.0000	11.4000	3/9/2021	418 Seneca Rd. bridle trail embankment along frontage	Great Falls, VA 22066	NO	39.038028	-77.339664	PL23	Potomac River/Nichols Run/Scott Run	VAN-A11R_ZZZ23A00	No	No
2149DP	1324S	Public	3/5/2021	DRY POND (PEAK SHAVER)	0.0000	10.0000	3/9/2021	404 Seneca Rd. bridle trail embankment along frontage	Great Falls, VA 22066	NO	39.039582	-77.339195	PL23	Potomac River/Nichols Run/Scott Run	VAN-A11R_ZZZ23A00	No	No
2150BR	1325S	Public	3/19/2021	BIORETENTION	2.2800	0.0000	FY23	intersection of Magna Wy. and Innovation Center Dr.	Hunter Mill, VA 20171	YES	38.958839	-77.41819	PL18	Horsepen Run	VAN-A09R_ZZZ18A00	No	Yes
2151BR	1325S	Public	3/19/2021	BIORETENTION	0.0600	0.0000	FY23	intersection of Magna Wy. and Innovation Center Dr.	Hunter Mill, VA 20171	YES	38.960188	-77.417336	PL18	Horsepen Run	VAN-A09R_ZZZ18A00	No	Yes
2152MB	1325S	Public	3/19/2021	MANUFACTURED BMP (PROPRIETARY) / CONTECH CDS	2.2800	0.0000	FY22	intersection of Magna Wy. and Innovation Center Dr.	Hunter Mill, VA 20171	YES	38.958971	-77.418296	PL18	Horsepen Run	VAN-A09R_ZZZ18A00	No	Yes
2153WP	1326S	Public	5/18/2021	WET POND	78.6000	104.4000	6/2/2021	behind 14120 Rock Canyon Dr.	Centreville, VA 20121	YES	38.816132	-77.435074	PL46	Little Rocky Run	VAN-A23R_LIP01A06	Yes	No
2154WP	1327S	Public	5/18/2021	WET POND	23.3600	32.4900	FY22	Baron Hurst Dr.	Vienna, VA 22181	YES	38.880469	-77.268453	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	No
BR0929	FCPA0131	Public	10/23/2020	BIORETENTION	0.0000	0.0000	FY23	9537 Courthouse Rd.	Vienna, VA 22181	YES	38.884003	-77.276008	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	Yes
DP0751	FCPS0113	Public	3/17/2021	DRY POND (PEAK SHAVER)	1.0900	5.9500	3/22/2021	12635 Builders Rd.	Herndon, VA 20170	YES	38.981938	-77.391103	PL21	Sugarland Run	VAN-A10R_ZZZ21A00	No	Yes
PP0086	FCPS0110	Public	8/18/2020	PERMEABLE PAVEMENT / PERMEABLE PAVERS	0.1400	0.0000	FY23	9819 Five Oaks Rd.	Fairfax, VA 22031	YES	38.869898	-77.286695	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	Yes
PP0087	FCPA0131	Public	10/23/2020	PERMEABLE PAVEMENT / SYNTHETIC TURF	2.1500	0.0000	FY23	9537 Courthouse Rd.	Vienna, VA 22181	YES	38.884386	-77.275814	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	Yes
PP0088	FCPA0131	Public	10/23/2020	PERMEABLE PAVEMENT / SYNTHETIC TURF	1.0100	0.0000	FY23	9537 Courthouse Rd.	Vienna, VA 22181	YES	38.883565	-77.276469	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	Yes
PP0089	FCPS0111	Public	10/15/2020	PERMEABLE PAVEMENT / POROUS CONRETE	0.0320	0.0000	FY23	near the intersection of Meeres Rd. and Abert Dr.	Fort Belvoir, VA 22060	NO	38.72098	-77.143919	PL27	Accotink Creek	VAN-A15R_ZZZ30A00	No	No
PP0090	FCPS0111	Public	10/15/2020	PERMEABLE PAVEMENT / POROUS CONRETE	0.0670	0.0000	FY23	near the intersection of Meeres Rd. and Abert Dr.	Fort Belvoir, VA 22060	NO	38.721085	-77.14364	PL27	Accotink Creek	VAN-A15R_ZZZ30A00	No	No
PP0091	FCPS0111	Public	10/15/2020	PERMEABLE PAVEMENT / POROUS CONRETE	0.0520	0.0000	FY23	near the intersection of Meeres Rd. and Abert Dr.	Fort Belvoir, VA 22060	NO	38.720872	-77.143784	PL27	Accotink Creek	VAN-A15R_ZZZ30A00	No	No
PP0092	FCPS0111	Public	10/15/2020	PERMEABLE PAVEMENT / POROUS CONRETE	0.0980	0.0000	FY23	near the intersection of Meeres Rd. and Abert Dr.	Fort Belvoir, VA 22060	NO	38.720981	-77.143502	PL27	Accotink Creek	VAN-A15R_ZZZ30A00	No	No
PP0093	FCPS0111	Public	10/15/2020	PERMEABLE PAVEMENT / POROUS CONRETE	0.0040	0.0000	FY23	near the intersection of Meeres Rd. and Abert Dr.	Fort Belvoir, VA 22060	NO	38.720718	-77.143787	PL27	Accotink Creek	VAN-A15R_ZZZ30A00	No	No
PP0094	FCPS0111	Public	10/15/2020	PERMEABLE PAVEMENT / POROUS CONRETE	0.0050	0.0000	FY23	near the intersection of Meeres Rd. and Abert Dr.	Fort Belvoir, VA 22060	NO	38.720824	-77.143505	PL27	Accotink Creek	VAN-A15R_ZZZ30A00	No	No
PP0095	FCPS0111	Public	10/15/2020	PERMEABLE PAVEMENT / POROUS CONRETE	0.0050	0.0000	FY23	near the intersection of Meeres Rd. and Abert Dr.	Fort Belvoir, VA 22060	NO	38.72082	-77.14408	PL27	Dogue Creek	VAN-A14R_ZZZ27A00	No	No
PP0096	FCPS0111	Public	10/15/2020	PERMEABLE PAVEMENT / POROUS CONRETE	0.0380	0.0000	FY23	near the intersection of Meeres Rd. and Abert Dr.	Fort Belvoir, VA 22060	NO	38.721179	-77.142657	PL27	Dogue Creek	VAN-A14R_ZZZ27A00	No	No
PP0097	FCPS0111	Public	10/15/2020	PERMEABLE PAVEMENT / POROUS CONRETE	0.0040	0.0000	FY23	near the intersection of Meeres Rd. and Abert Dr.	Fort Belvoir, VA 22060	NO	38.721077	-77.142586	PL27	Dogue Creek	VAN-A14R_ZZZ27A00	No	No
PP0098	FCPS0111	Public	10/15/2020	PERMEABLE PAVEMENT / POROUS CONRETE	0.1070	0.0000	FY23	near the intersection of Meeres Rd. and Abert Dr.	Fort Belvoir, VA 22060	NO	38.721261	-77.142874	PL27	Dogue Creek	VAN-A14R_ZZZ27A00	No	No
TF0601	FCPS0016	Public	10/23/2020	MANUFACTURED BMP (PROPRIETARY) / FILTERRA	0.0900	0.0200	FY23	6301 Beulah St.	Alexandria, VA 22310	YES	38.781549	-77.145727	PL26	Long Branch	VAN-A15R_LOA01A08	Yes	Yes
TF0602	FCPS0016	Public	10/23/2020	MANUFACTURED BMP (PROPRIETARY) / FILTERRA	0.2100	0.0400	FY23	6301 Beulah St.	Alexandria, VA 22310	YES	38.780533	-77.145593	PL30	Long Branch	VAN-A15R_LOA01A08	Yes	Yes
TR1762	FCPS0016	Public	10/23/2020	INFILTRATION PRACTICE	0.6300	0.0000	FY22	6301 Beulah St.	Alexandria, VA 22310	YES	38.781656	-77.145075	PL26	Cameron Run	VAN-A13R_ZZZ26A00	No	Yes
TR1772	FCPS0089	Public	11/10/2020	INFILTRATION PRACTICE	0.1270	0.0000	FY22	324 Nutley St. NW	Vienna, VA 22180	NO	38.89956	-77.278606	PL22	Difficult Run	VAN-A11R_ZZZ22A00	No	Yes
UG0810	FCHCD0002	Public	7/6/2021	UNDERGROUND DETENTION	3.9000	3.0000	FY22	4001 Barker Ct.	Fairfax, VA 22032	NO	38.839715	-77.266272	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	Yes
2122DP	1316S	Public	8/3/2020	DRY POND (PEAK SHAVER)	NA		12/9/2020	1134 Springvale Rd.	Great Falls, VA 22066-1733	NO	38.983912	-77.31435	PL22	Difficult Run	VAN-A11R_ZZZ22A00	No	Yes
DP0749	FCPS0111	Public	10/15/2020	EXTENDED DETENTION DRY POND	2.4000	10.7200	FY22	near the intersection of Meeres Rd. and Abert Dr.	Fort Belvoir, VA 22060	NO	38.722488	-77.143547	PL27	Dogue Creek	VAN-A14R_ZZZ27A00	No	No
BR0845	S3799	Private	8/18/2020	BIORETENTION	0.0300	0.0000	5/3/2021	6803 Old Chesterbrook Rd.	McLean, VA 22101	YES	38.925845	-77.178771	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
BR0886	S3876	Private	8/24/2020	BIORETENTION	0.0300	0.1500	5/26/2021	Vaden Dr.	Fairfax, VA 22031	YES	38.873033	-77.271543	PL30	Unnamed tributary to Accotink Creek	VAN-A15R_XKY01A06	No	No
BR0887	S3876	Private	8/24/2020	BIORETENTION	0.0400	0.1600	5/26/2021	Vaden Dr.	Fairfax, VA 22031	YES	38.872739	-77.271355	PL30	Unnamed tributary to Accotink Creek	VAN-A15R_XKY01A06	No	No
BR0888	S3876	Private	8/24/2020	BIORETENTION	0.0300	0.0400	5/26/2021	Vaden Dr.	Fairfax, VA 22031	YES	38.872278	-77.271105	PL30	Unnamed tributary to Accotink Creek	VAN-A15R_XKY01A06	No	No
BR0889	S3876	Private	8/24/2020	BIORETENTION	0.0200	0.0700	5/26/2021	Vaden Dr.	Fairfax, VA 22031	YES	38.871974	-77.270854	PL30	Unnamed tributary to Accotink Creek	VAN-A15R_XKY01A06	No	Yes
BR0890	S3876	Private	8/24/2020	BIORETENTION	0.0500	0.1500	5/26/2021	Vaden Dr.	Fairfax, VA 22031	YES	38.871102	-77.270283	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	No
BR0891	S3876	Private	8/24/2020	BIORETENTION	0.0500	0.1500	5/26/2021	Vaden Dr.	Fairfax, VA 22031	YES	38.870626	-77.269976	PL30	Unnamed tributary to Accotink Creek	VAN-A15R_XKY01A06	No	Yes
BR0892	S3878	Private	8/24/2020	BIORETENTION	0.3200	0.7700	6/16/2021	9885 River Chase Wy.	Great Falls, VA 22066	YES	39.037803	-77.28568	PL23	Potomac River/Nichols Run/Scott Run	VAN-A11R_ZZZ23A00	No	No
BR0894	S3882	Private	9/17/2020	BIORETENTION	0.0700	0.0000	4/29/2021	1864 Kirby Rd.	McLean, VA 22101	YES	38.914825	-77.162801	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
BR0895	S3884	Private	9/17/2020	BIORETENTION / STORMWATER PLANTER	0.0151	0.0000	5/5/2021	7407 Bethune St.	Falls Church, VA 22043	NO	38.910996	-77.201637	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
BR0896	S3886	Private	9/18/2020	BIORETENTION / STORMWATER PLANTER	0.0130	0.0000	5/5/2021	1926 Storm Dr.	Falls Church, VA 22043	YES	38.913026	-77.199791	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
BR0897	S3886	Private	9/18/2020	BIORETENTION / STORMWATER PLANTER	0.0180	0.0000	5/5/2021	1926 Storm Dr.	Falls Church, VA 22043	YES	38.912827	-77.199833	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
BR0898	S3889	Private	9/18/2020	BIORETENTION / STORMWATER PLANTER	0.0600	0.0000	6/7/2021	1838 Dalmation Dr.	McLean, VA 22101	NO	38.914212	-77.184856	PL24	Pimmit Run	VAN-A12R_PIM02B06	Yes	Yes
BR0899	S3892	Private	9/21/2020	BIORETENTION / STORMWATER PLANTER	0.0400	0.0000	6/9/2021	7815 Old Falls Rd.	McLean, VA 22102	NO	38.940993	-77.216494	PL23	Potomac River/Nichols Run/Scott Run	VAN-A11R_ZZZ23A00	No	No
BR0900	S3898	Private	10/7/2020	BIORETENTION	0.0515	0.0000	6/9/2021	1210 Raymond Av.	McLean, VA 22101-2632	YES	38.941782	-77.190276	PL23	Dead Run	VAN-A11R_DEA01A04	Yes	Yes
BR0901	S3901	Private	10/8/2020	BIORETENTION / STORMWATER PLANTER	0.0400	0.0000	6/7/2021	6620 Tucker Av.	McLean, VA 22101	YES	38.918036	-77.172751	PL24	Pimmit Run	VAN-A12R_PIM02B06	Yes	Yes
BR0902	S3902	Private	10/9/2020	BIORETENTION / STORMWATER PLANTER	0.0200	0.0000	5/19/2021	2212 Primrose Dr.	Falls Church, VA 22046	YES	38.90085	-77.175257	PL25	Four Mile Run	VAN-A12R_FOU01A00	Yes	Yes
BR0903	S3911	Private	10/14/2020	BIORETENTION	0.0500	0.0000	5/3/2021	6719 Weaver Av.	McLean, VA 22101	YES	38.927445	-77.177211	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	No
BR0904	S3918	Private	10/26/2020	BIORETENTION / STORMWATER PLANTER	0.0060	0.0000	6/16/2021	8028 Washington Rd.	Alexandria, VA 22308	YES	38.737975	-77.057218	PL28	Potomac River/Little Hunting Creek	VAN-A14R_ZZZ28A00	No	No
BR0905	S3918	Private	10/26/2020	BIORETENTION / STORMWATER PLANTER	0.0190	0.0000	6/16/2021	8028 Washington Rd.	Alexandria, VA 22308	YES	38.737881	-77.057278	PL28	Potomac River/Little Hunting Creek	VAN-A14R_ZZZ28A00	No	No
BR0906	S3918	Private	10/26/2020	BIORETENTION / STORMWATER PLANTER	0.0100	0.0000	6/16/2021	8026 Washington Rd.	Alexandria, VA 22308	YES	38.737952	-77.057472	PL28	Potomac River/Little Hunting Creek	VAN-A14R_ZZZ28A00	No	No
BR0907	S3919	Private	10/26/2020	BIORETENTION / STORMWATER PLANTER	0.0200	0.0000	6/16/2021	8036 Washington Rd.	Alexandria, VA 22308	YES	38.737685	-77.056622	PL28	Potomac River/Little Hunting Creek	VAN-A14R_ZZZ28A00	No	No
BR0908	S3919	Private	10/26/2020	BIORETENTION / STORMWATER PLANTER	0.0200	0.0000	6/16/2021	8034 Washington Rd.	Alexandria, VA 22308	YES	38.737678	-77.056704	PL28	Potomac River/Little Hunting Creek	VAN-A14R_ZZZ28A00	No	No

Facility ID	Site ID	Maintained By	Date Installed	BMP Name	Impervious Acres Treated (ac)	Pervious Acres Treated (ac)	Inspection Date/Year	Facility Address	Facility City/State/Zip	PMA	Latitude	Longitude	HUC6	Receiving Water Name	Receiving Water ID	Receiving Water Impaired	Facility Discharges to Fairfax County's MS4?
BR0909	S3925	Private	10/27/2020	BIORETENTION / STORMWATER PLANTER	0.0200	0.0000	6/9/2021	1855 Beulah Rd.	Vienna, VA 22182	YES	38.923336	-77.271127	PL22	Difficult Run	VAN-A11R_ZZZ22A00	No	No
BR0910	S3927	Private	10/28/2020	BIORETENTION / STORMWATER PLANTER	0.0100	0.0000	6/9/2021	9717 Flint Hill Ct.	Vienna, VA 22181	YES	38.890645	-77.282065	PL22	Difficult Run	VAN-A11R_ZZZ22A00	No	No
BR0911	S3927	Private	10/28/2020	BIORETENTION / STORMWATER PLANTER	0.0300	0.0000	6/9/2021	9717 Flint Hill Ct.	Vienna, VA 22181	YES	38.890824	-77.282104	PL22	Difficult Run	VAN-A11R_ZZZ22A00	No	No
BR0912	S3929	Private	10/28/2020	BIORETENTION / STORMWATER PLANTER	0.0256	0.0000	5/3/2021	1814 Chesterfield Pl.	McLean, VA 22101	YES	38.917037	-77.174236	PL24	Pimmit Run	VAN-A12R_PIM02B06	Yes	Yes
BR0913	S3929	Private	10/28/2020	BIORETENTION / STORMWATER PLANTER	0.0322	0.0000	5/3/2021	1814 Chesterfield Pl.	McLean, VA 22101	YES	38.916914	-77.174445	PL24	Pimmit Run	VAN-A12R_PIM02B06	Yes	No
BR0914	S3931	Private	1/14/2021	BIORETENTION	0.9000	0.8900	FY22	opposite 4375 Strawflower St.	Fairfax, VA 22030	YES	38.85024	-77.340567	PL22	Difficult Run	VAN-A11R_ZZZ22A00	No	No
BR0915	S3933	Private	10/28/2020	BIORETENTION / STORMWATER PLANTER	0.0300	0.0000	5/3/2021	1636 Dempsey St.	McLean, VA 22101	YES	38.923358	-77.169205	PL24	Pimmit Run	VAN-A12R_PIM02B06	Yes	Yes
BR0916	S3934	Private	10/29/2020	BIORETENTION	0.0600	0.0000	5/3/2021	7002 Southridge Dr.	McLean, VA 22101	YES	38.919037	-77.18693	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
BR0917	S3940	Private	10/29/2020	BIORETENTION	0.0400	0.0000	6/7/2021	6612 Denny Pl.	McLean, VA 22101	YES	38.912737	-77.172463	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	No
BR0918	S3943	Private	11/2/2020	BIORETENTION	0.0500	0.0000	5/5/2021	behind 7104 Eastman Dr.	Falls Church, VA 22043	YES	38.906479	-77.189151	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	No
BR0919	S3944	Private	11/2/2020	BIORETENTION	0.1400	0.0000	6/15/2021	702 Live Oak Dr.	McLean, VA 22101	NO	38.963874	-77.188355	PL23	Potomac River	NA	NA	No
BR0920	S3947	Private	11/2/2020	BIORETENTION	0.0500	0.0000	5/3/2021	1605 Wrightson Dr.	McLean, VA 22101	YES	38.926238	-77.174367	PL24	Pimmit Run	VAN-A12R_PIM02B06	Yes	Yes
BR0921	S3948	Private	11/2/2020	BIORETENTION / STORMWATER PLANTER	0.1000	0.0000	5/19/2021	6510 Topeka Rd.	McLean, VA 22101	YES	38.93457	-77.167426	PL24	Pimmit Run	VAN-A12R_PIM02A00	Yes	No
BR0922	S3951	Private	11/4/2020	BIORETENTION / STORMWATER PLANTER	0.0200	0.0000	6/7/2021	1920 Anderson Rd.	Falls Church, VA 22043	YES	38.912767	-77.195711	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
BR0923	S3955	Private	11/4/2020	BIORETENTION / STORMWATER PLANTER	0.0500	0.0000	5/19/2021	6302 Kellogg Dr.	McLean, VA 22101	YES	38.931816	-77.154755	PL24	Pimmit Run	VAN-A12R_PIM02A00	Yes	Yes
BR0924	S3956	Private	11/5/2020	BIORETENTION / STORMWATER PLANTER	0.0600	0.0000	5/19/2021	1733 Melbourne Dr.	McLean, VA 22101	YES	38.918619	-77.176112	PL24	Pimmit Run	VAN-A12R_PIM02B06	Yes	No
BR0925	S3957	Private	11/5/2020	BIORETENTION	0.0400	0.0000	5/14/2021	4031 N Tazewell St.	Arlington, VA 22207	YES	38.925337	-77.132181	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
BR0926	S3958	Private	11/5/2020	BIORETENTION	0.0700	0.0000	6/15/2021	1523 Gingerwood Ct.	Vienna, VA 22182	YES	38.943057	-77.282289	PL22	Wolftrap Creek	VAN-A11R_WOT01B06	Yes	Yes
BR0927	S3960	Private	11/6/2020	BIORETENTION	0.0400	0.0000	6/9/2021	6843 McFall Pl.	McLean, VA 22101	YES	38.911185	-77.181963	PL24	Pimmit Run	VAN-A12R_PIM02B06	Yes	Yes
BR0928	S3962	Private	11/6/2020	BIORETENTION	0.1100	0.0000	5/3/2021	6930 Tyndale St.	McLean, VA 22101	YES	38.919588	-77.185634	PL24	Pimmit Run	VAN-A12R_PIM02B06	Yes	Yes
BR0930	S3974	Private	11/12/2020	BIORETENTION / STORMWATER PLANTER	0.0400	0.0000	6/9/2021	8039 Iliff Dr.	Dunn Loring, VA 22027	YES	38.891275	-77.224328	PL26	Holmes Run	VAN-A13R_HOR01B00	Yes	Yes
BR0931	S3974	Private	11/12/2020	BIORETENTION / STORMWATER PLANTER	0.0200	0.0000	6/9/2021	8039 Iliff Dr.	Dunn Loring, VA 22027	YES	38.891421	-77.224141	PL26	Holmes Run	VAN-A13R_HOR01B00	Yes	Yes
BR0932	S3976	Private	11/13/2020	BIORETENTION	0.0600	0.0000	6/7/2021	8302 Nightingale Ct.	Annandale, VA 22003	YES	38.798084	-77.225574	PL30	Lake Accotink	VAN-A15L_ACO01A10	Yes	No
BR0934	S3315	Private	12/3/2020	BIORETENTION	0.0241	0.0000	4/28/2021	6505 Chesterfield Ave.	McLean, VA 22101	NO	38.914771	-77.165002	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
BR0935	S3989	Private	12/16/2020	BIORETENTION / STORMWATER PLANTER	0.0100	0.0000	FY22	908 Mackall Av.	McLean, VA 22101-1618	NO	38.95436	-77.173228	PL23	Potomac River/Nichols Run/Scott Run	VAN-A11R_ZZZ23A00	No	No
BR0936	S3989	Private	12/16/2020	BIORETENTION / STORMWATER PLANTER	0.0200	0.0000	FY22	908 Mackall Av.	McLean, VA 22101-1618	NO	38.954362	-77.173402	PL23	Potomac River/Nichols Run/Scott Run	VAN-A11R_ZZZ23A00	No	No
BR0937	S3989	Private	12/16/2020	BIORETENTION / STORMWATER PLANTER	0.0400	0.0000	FY22	908 Mackall Av.	McLean, VA 22101-1618	NO	38.954226	-77.173616	PL23	Potomac River/Nichols Run/Scott Run	VAN-A11R_ZZZ23A00	No	No
BR0938	S3991	Private	12/16/2020	BIORETENTION	0.0400	0.0000	FY22	1046 Warbler Pl.	McLean, VA 22101-2017	YES	38.947339	-77.192299	PL23	Potomac River/Nichols Run/Scott Run	VAN-A11R_ZZZ23A00	No	Yes
BR0939	S3992	Private	12/16/2020	BIORETENTION	0.0285	0.0000	FY22	2122 McKay St.	Falls Church, VA 22043	YES	38.904805	-77.190547	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
BR0940	S3993	Private	12/18/2020	BIORETENTION	0.0400	0.0000	FY22	1715 Great Falls St.	McLean, VA 22101	YES	38.921943	-77.191817	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	No
BR0941	S3996	Private	3/22/2021	BIORETENTION	0.0500	0.0700	FY22	4004 Winterset Dr.	Mason, VA 22003	YES	38.837416	-77.233345	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	Yes
BR0942	S3997	Private	3/22/2021	BIORETENTION	0.0273	0.0205	FY22	8717 Pohick Rd.	Springfield, VA 22153	YES	38.74338	-77.245259	PL29	Pohick Creek	VAN-A16R_ZZZ29A00	No	Yes
BR0943	S3998	Private	3/22/2021	BIORETENTION	0.0303	0.0712	FY22	8749 Pohick Rd.	Springfield, VA 22153	YES	38.744747	-77.247388	PL29	Pohick Creek	VAN-A16R_ZZZ29A00	No	No
BR0944	S4008	Private	3/30/2021	BIORETENTION	0.0600	0.0000	FY22	6308 Kellog Dr.	McLean, VA 22101	YES	38.931248	-77.155605	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
BR0945	S4009	Private	3/30/2021	BIORETENTION / STORMWATER PLANTER	0.0410	0.0000	FY22	6005 Chesterbrook Rd.	McLean, VA 22101	YES	38.923069	-77.13934	PL24	Little Pimmit Run	VAN-A12R_LIO01A10	Yes	Yes
BR0946	S4009	Private	3/30/2021	BIORETENTION / STORMWATER PLANTER	0.0240	0.0000	FY22	6005 Chesterbrook Rd.	McLean, VA 22101	YES	38.923268	-77.139326	PL24	Little Pimmit Run	VAN-A12R_LIO01A10	Yes	Yes
BR0947	S4011	Private	3/30/2021	BIORETENTION / STORMWATER PLANTER	0.0394	0.0000	FY22	6506 Engel Dr.	McLean, VA 22101	YES	38.923534	-77.166354	PL24	Pimmit Run	VAN-A12R_PIM02B06	Yes	Yes
BR0948	S4011	Private	3/30/2021	BIORETENTION / STORMWATER PLANTER	0.0329	0.0000	FY22	6506 Engel Dr.	McLean, VA 22101	YES	38.923457	-77.166237	PL24	Pimmit Run	VAN-A12R_PIM02B06	Yes	Yes
BR0949	S4015	Private	3/30/2021	BIORETENTION	0.0400	0.0000	FY22	3040 GateHouse Plz.	Falls Church, VA 22042	YES	38.866336	-77.230065	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	Yes
BR0950	S4015	Private	3/30/2021	BIORETENTION	0.0300	0.0000	FY22	3040 GateHouse Plz.	Falls Church, VA 22042	YES	38.866284	-77.229811	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	Yes
BR0951	S4015	Private	3/30/2021	BIORETENTION	0.0300	0.0000	FY22	3040 GateHouse Plz.	Falls Church, VA 22042	YES	38.86625	-77.229911	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	Yes
BR0952	S4016	Private	3/30/2021	BIORETENTION / STORMWATER PLANTER	0.0100	0.0000	FY22	1241 Kurtz Rd.	McLean, VA 22101	YES	38.940484	-77.172913	PL24	Pimmit Run	VAN-A12R_PIM02A00	Yes	No
BR0953	S4016	Private	3/30/2021	BIORETENTION / STORMWATER PLANTER	0.0200	0.0000	FY22	1241 Kurtz Rd.	McLean, VA 22101	YES	38.940616	-77.173017	PL24	Pimmit Run	VAN-A12R_PIM02A00	Yes	No
BR0954	S4017	Private	3/30/2021	BIORETENTION / STORMWATER PLANTER	0.0290	0.0000	FY22	1443 Waggaman Cir.	McLean, VA 22101	YES	38.932447	-77.166136	PL24	Pimmit Run	VAN-A12R_PIM02A00	Yes	Yes
BR0955	S4017	Private	3/30/2021	BIORETENTION / STORMWATER PLANTER	0.02700	0.0000	FY22	1443 Waggaman Cir.	McLean, VA 22101	YES	38.932544	-77.166019	PL24	Pimmit Run	VAN-A12R_PIM02A00	Yes	Yes
BR0956	S4019	Private	3/30/2021	BIORETENTION / STORMWATER PLANTER	0.0100	0.0000	FY22	7509 Fisher Dr.	Falls Church VA, 22043	YES	38.912643	-77.203995	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
BR0957	S4020	Private	3/30/2021	BIORETENTION / STORMWATER PLANTER	0.0247	0.0000	FY22	1936 Anderson Rd.	Falls Church, VA 22043	YES	38.911324	-77.194824	PL24	Pimmit Run	VAN-A12R_PIM02B06	Yes	Yes
BR0958	S4021	Private	3/30/2021	BIORETENTION / STORMWATER PLANTER	0.0130	0.0000	FY22	2015 Nordlie Pl.	Falls Church, VA 22043	YES	38.910065	-77.210772	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
BR0959	S4021	Private	3/30/2021	BIORETENTION / STORMWATER PLANTER	0.0140	0.0000	FY22	2015 Nordlie Pl.	Falls Church, VA 22043	YES	38.909906	-77.210841	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
BR0960	S3988	Private	3/26/2021	BIORETENTION	0.9800	0.0000	FY22	11924 Braddock Rd.	Fairfax, VA 22030	YES	38.830934	-77.357919	PL46	Lower Bull Run	VAN-A23R_ZZZ46A00	No	Yes
BR0961	S3988	Private	3/26/2021	BIORETENTION	0.2900	0.0000	FY22	11924 Braddock Rd.	Fairfax, VA 22030	YES	38.831894	-77.359724	PL46	Lower Bull Run	VAN-A23R_ZZZ46A00	No	No
BR0962	S3988	Private	3/26/2021	BIORETENTION	0.5200	0.0000	FY22	11924 Braddock Rd.	Fairfax, VA 22030	YES	38.830971	-77.360256	PL46	Piney Branch	VAN-A23R_PIY01A02	Yes	Yes
BR0963	S0857	Private	2/12/2021	BIORETENTION	0.6100	0.3100	FY22	1800 Jonathan Wy.	Reston, VA 20190	YES	38.961184	-77.352831	PL22	Difficult Run	VAN-A11R_ZZZ22A00	No	Yes
BR0964	S4033	Private	5/21/2021	BIORETENTION	0.4500	0.4500	FY22	behind 6407 Beatles Ln.	Franconia, VA 22310	YES	38.778649	-77.138653	PL27	Dogue Creek	VAN-A14R_ZZZ27A00	No	Yes
BR0965	S4039	Private	3/30/2021	BIORETENTION	0.0300	0.0000	FY22	7200 Enterprise Ave.	Mclean, VA 22101	YES	38.932135	-77.192769	PL23	Dead Run	VAN-A11R_DEA01A04	Yes	Yes
BR0966	S4042	Private	3/30/2021	BIORETENTION	0.1200	0.0000	FY22	7616 Trammel Rd.	Annandale, VA 22003	YES	38.844037	-77.214493	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	Yes
BR0967	S4043	Private	3/30/2021	BIORETENTION	0.0426	0.0664	FY22	6504 Roosevelt St.	Falls Church, VA 22043	YES	38.900897	-77.166063	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
BR0968	S4046	Private	4/2/2021	BIORETENTION / STORMWATER PLANTER	0.0300	0.0000	FY22	1203 Allendale Rd.	McLean, VA 22101	YES	38.942985	-77.173002	PL23	Dead Run	VAN-A11R_DEA01A04	Yes	No
BR0969	S4049	Private	4/5/2021	BIORETENTION / STORMWATER PLANTER	0.0500	0.0000	FY22	1818 Rupert St.	McLean, VA 22101	YES	38.916149	-77.182449	PL24	Pimmit Run	VAN-A12R_PIM02B06	Yes	Yes
BR0970	S4050	Private	4/5/2021	BIORETENTION	0.0400	0.0000	FY22	6537 Chesterfield Ave.	McLean, VA 22101	YES	38.915667	-77.169667	PL24	Pimmit Run	VAN-A12R_PIM02B06	Yes	Yes
BR0971	S4053	Private	4/5/2021	BIORETENTION / STORMWATER PLANTER	0.0120	0.0000	FY22	1917 Barbee Street	McLean, VA 22101	YES	38.912593	-77.168352	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
BR0972	S4053	Private	4/5/2021	BIORETENTION / STORMWATER PLANTER	0.0180	0.0000	FY22	1917 Barbee Street	McLean, VA 22101	YES	38.912485	-77.168342	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
BR0974	S4054	Private	4/5/2021	BIORETENTION / STORMWATER PLANTER	0.0500	0.0000	FY22	2212 Orchid Dr.	Falls Church, VA 22046	YES	38.901045	-77.172049	PL25	Four Mile Run	VAN-A12R_FOU01A00	Yes	Yes
BR0975	S4055	Private	4/5/2021	BIORETENTION / STORMWATER PLANTER	0.0400	0.0000	FY22	1473 Pathfinder Ln.	McLean, VA 22101	YES	38.931691	-77.185358	PL23	Dead Run	VAN-A11R_DEA01A04	Yes	Yes
BR0976	S4056	Private	4/5/2021	BIORETENTION / STORMWATER PLANTER	0.0300	0.0000	FY22	7313 Redd Road	Falls Church, VA 22043	YES	38.902819	-77.19841	PL24	Pimmit Run	VAN-A12R_PIM02B06	Yes	No
BR0977	S4058	Private	4/5/2021	BIORETENTION	0.0700	0.0000	FY22	4215 Summit Pl.	Alexandria, VA 22312	YES	38.831893	-77.145707	PL26	Holmes Run	VAN-A13R_HOR01A00	Yes	No
BR0978	S4058	Private	4/5/2021	BIORETENTION / STORMWATER PLANTER	0.0400	0.0000	FY22	4215 Summit Pl.	Alexandria, VA 22312	YES	38.831638	-77.145584	PL26	Holmes Run	VAN-A13R_HOR01A00	Yes	No
BR0980	S4061	Private	4/5/2021	BIORETENTION	0.0500	0.0000	FY22	3412 Beverly Dr.	Annandale, VA 22003	YES	38.852528	-77.235922	PL30	Accotink Creek	VAN-A15R_ACO03A02	Yes	Yes
BR0981	S4064	Private	4/5/2021	BIORETENTION / STORMWATER PLANTER	0.0100	0.0000	FY22	1905 Gilson St.	Falls Church, VA 22043	YES	38.914288	-77.195045	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
BR0982	S4064	Private	4/5/2021	BIORETENTION / STORMWATER PLANTER	0.0100	0.0000	FY22	1905 Gilson St.	Falls Church, VA 22043	YES	38.914331	-77.194895	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes

Facility ID	Site ID	Maintained By	Date Installed	BMP Name	Impervious Acres Treated (ac)	Pervious Acres Treated (ac)	Inspection Date/Year	Facility Address	Facility City/State/Zip	PMA	Latitude	Longitude	HUC6	Receiving Water Name	Receiving Water ID	Receiving Water Impaired	Facility Discharges to Fairfax County's MS4?
BR0983	S4065	Private	4/5/2021	BIORETENTION / STORMWATER PLANTER	0.0189	0.0000	FY22	1746 Anderson Rd.	Falls Church, VA 22043	YES	38.919473	-77.199368	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	No
BR0984	S4065	Private	4/5/2021	BIORETENTION / STORMWATER PLANTER	0.0472	0.0000	FY22	1746 Anderson Rd.	Falls Church, VA 22043	YES	38.919611	-77.199479	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	No
BR0985	S4066	Private	4/6/2021	BIORETENTION	0.0900	0.0000	FY22	6206 Mori Street	McLean, VA 22101	YES	38.928031	-77.150989	PL24	Pimmit Run	VAN-A12R_PIM02A00	Yes	Yes
BR0986	S4068	Private	4/6/2021	BIORETENTION / STORMWATER PLANTER	0.0200	0.0000	FY22	2103 Haycock Rd.	Falls Church, VA 22403	YES	38.906329	-77.168926	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	No
BR0987	S4068	Private	4/6/2021	BIORETENTION / STORMWATER PLANTER	0.0300	0.0000	FY22	2103 Haycock Rd.	Falls Church, VA 22043	YES	38.906484	-77.168959	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	No
BR0988	S4075	Private	4/6/2021	BIORETENTION	0.0500	0.0000	FY22	6813 Wemberly Way	McLean, VA 22101	YES	38.959226	-77.179918	PL23	Dead Run	VAN-A11R_DEA01A04	Yes	No
BR0989	S4077	Private	4/6/2021	BIORETENTION / STORMWATER PLANTER	0.4700	0.0000	FY22	11607 Lawter Ln.	Clifton, VA 20124	YES	38.735647	-77.345783	PL47	Occoquan River/Occoquan Reservoir	VAN-A24R_ZZZ47A00	No	No
BR0990	S4077	Private	4/6/2021	BIORETENTION / STORMWATER PLANTER	0.4700	0.0000	FY22	11607 Lawter Ln.	Clifton, VA 20124	YES	38.735682	-77.345322	PL47	Occoquan River/Occoquan Reservoir	VAN-A24R_ZZZ47A00	No	No
BR0991	S4077	Private	4/6/2021	BIORETENTION / STORMWATER PLANTER	0.4700	0.0000	FY22	11607 Lawter Ln.	Clifton, VA 20124	YES	38.735518	-77.345503	PL47	Occoquan River/Occoquan Reservoir	VAN-A24R_ZZZ47A00	No	No
BR0992	S4081	Private	5/19/2021	BIORETENTION / STORMWATER PLANTER	0.0200	0.0000	FY22	8024 Washington Rd.	Alexandria, VA 22308	YES	38.738099	-77.057584	PL28	Potomac River/Little Hunting Creek	VAN-A14R_ZZZ28A00	No	No
BR0993	S4081	Private	5/19/2021	BIORETENTION / STORMWATER PLANTER	0.0100	0.0000	FY22	8022 Washington Rd.	Alexandria, VA 22308	YES	38.738191	-77.057774	PL28	Potomac River/Little Hunting Creek	VAN-A14R_ZZZ28A00	No	Yes
BR0994	S4089	Private	4/6/2021	BIORETENTION	0.0300	0.0000	FY22	3004 Covington St.	Fairfax, VA 22031	YES	38.940712	-77.220988	PL23	Potomac River/Nichols Run/Scott Run	VAN-A11R_ZZZ23A00	No	Yes
BR0995	S4091	Private	4/6/2021	BIORETENTION	0.0240	0.0000	FY22	7028 Roxann Rd.	Alexandria, VA 22315	YES	38.764692	-77.13379	PL27	Dogue Creek	VAN-A14R_ZZZ27A00	No	Yes
BR0996	S4091	Private	4/6/2021	BIORETENTION	0.0260	0.0000	FY22	7028 Roxann Rd.	Alexandria, VA 22315	YES	38.764472	-77.133762	PL27	Dogue Creek	VAN-A14R_ZZZ27A00	No	Yes
BR0997	S4092	Private	4/6/2021	BIORETENTION	0.0140	0.0000	FY22	6842 McFall Pl.	McLean, VA 22101	YES	38.911804	-77.182155	PL24	Pimmit Run	VAN-A12R_PIM02B06	Yes	No
BR0998	S4092	Private	4/6/2021	BIORETENTION	0.0180	0.0000	FY22	6842 McFall Pl.	McLean, VA 22101	YES	38.911689	-77.182322	PL24	Pimmit Run	VAN-A12R_PIM02B06	Yes	No
BR0999	S4093	Private	4/6/2021	BIORETENTION	0.0140	0.0000	FY22	7419 Nigh Rd.	Falls Church, VA 22043	YES	38.908655	-77.202051	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
BR1000	S4097	Private	4/9/2021	BIORETENTION	0.0070	0.0000	FY22	7700 Lorton Pl.	Lorton, VA 22079	YES	38.674719	-77.208363	PL48	Occoquan River/Belmont Bay	VAN-A25R_ZZZ48A00	No	No
BR1001	S4097	Private	4/9/2021	BIORETENTION	0.0130	0.0000	FY22	7700 Lorton Pl.	Lorton, VA 22079	YES	38.674537	-77.208387	PL48	Occoquan River/Belmont Bay	VAN-A25R_ZZZ48A00	No	No
BR1002	S4097	Private	4/9/2021	BIORETENTION	0.0180	0.0000	FY22	7700 Lorton Pl.	Lorton, VA 22079	YES	38.674542	-77.208532	PL48	Occoquan River/Belmont Bay	VAN-A25R_ZZZ48A00	No	No
BR1003	S4097	Private	4/9/2021	BIORETENTION	0.0060	0.0000	FY22	7700 Lorton Pl.	Lorton, VA 22079	YES	38.674666	-77.208551	PL48	Occoquan River/Belmont Bay	VAN-A25R_ZZZ48A00	No	No
BR1004	S4100	Private	4/12/2021	BIORETENTION / STORMWATER PLANTER	0.0400	0.0000	FY22	6637 Osborn St.	Fall Church, VA 22046	YES	38.89971	-77.17453	PL25	Four Mile Run	VAN-A12R_FOU01A00	Yes	Yes
BR1005	S4101	Private	4/12/2021	BIORETENTION / STORMWATER PLANTER	0.0400	0.0000	FY22	2120 Veranda Ct.	Falls Church, VA 22043	YES	38.903265	-77.182151	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
BR1006	S4104	Private	4/12/2021	BIORETENTION	0.1263	0.0000	FY22	6031 Kathmoor Dr.	Alexandria, VA 22310	YES	38.780128	-77.143836	PL27	Long Branch	VAN-A15R_LOA01A08	Yes	Yes
BR1007	S4105	Private	3/17/2021	BIORETENTION	0.1034	0.0933	FY22	8115 Ainsworth Av.	Springfield, VA 22152	NO	38.779529	-77.225203	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	No
BR1027	S4176	Private	5/10/2021	BIORETENTION	0.1190	0.1400	FY22	3710 Purks Ct.	Alexandria, VA 22309	YES	38.732209	-77.097016	PL27	Dogue Creek	VAN-A14R_ZZZ27A00	No	No
BR1028	S4177	Private	5/11/2021	BIORETENTION	0.0150	0.0450	FY22	11719 River Dr.	Lorton, VA 22079	YES	38.636307	-77.153287	PL50	Potomac River/Occoquan Bay	VAN-A25R_ZZZ50A00	No	No
BR1029	S4177	Private	5/11/2021	BIORETENTION	0.0300	0.0800	FY22	11719 River Dr.	Lorton, VA 22079	YES	38.636189	-77.153315	PL50	Potomac River/Occoquan Bay	VAN-A25R_ZZZ50A00	No	No
BR1030	S4177	Private	5/11/2021	BIORETENTION	0.0150	0.0450	FY22	11719 River Dr.	Lorton, VA 22079	YES	38.636453	-77.153226	PL50	Potomac River/Occoquan Bay	VAN-A25R_ZZZ50A00	No	No
BR1031	S4177	Private	5/11/2021	BIORETENTION	0.0400	0.3100	FY22	11719 River Dr.	Lorton, VA 22079	YES	38.636434	-77.153366	PL50	Potomac River/Occoquan Bay	VAN-A25R_ZZZ50A00	No	No
BR1032	S4177	Private	5/11/2021	BIORETENTION	0.0700	0.0900	FY22	11719 River Dr.	Lorton, VA 22079	YES	38.636333	-77.153469	PL50	Potomac River/Occoquan Bay	VAN-A25R_ZZZ50A00	No	No
BR1033	S4178	Private	5/12/2021	BIORETENTION	0.1300	0.6800	FY22	7615 Southdown Rd.	Alexandria, VA 22308	YES	38.749513	-77.048263	PL28	Potomac River	VAN-A14E_POT01A08	Yes	No
BR1034	S4178	Private	5/12/2021	BIORETENTION	0.0100	0.0200	FY22	7615 Southdown Rd.	Alexandria, VA 22308	YES	38.749709	-77.048247	PL28	Potomac River	VAN-A14E_POT01A08	Yes	No
BR1035	S4178	Private	5/12/2021	BIORETENTION	0.0260	0.0140	FY22	7615 Southdown Rd.	Alexandria, VA 22308	YES	38.749379	-77.048142	PL28	Potomac River	VAN-A14E_POT01A08	Yes	No
BR1036	S4181	Private	5/11/2021	BIORETENTION	0.1570	0.3310	FY22	7800 Belvedere Dr.	Alexandria, VA 22306	YES	38.746669	-77.079503	PL28	Potomac River/Little Hunting Creek	VAN-A14R_ZZZ28A00	No	Yes
BR1037	S4182	Private	5/10/2021	BIORETENTION	0.1820	0.7320	FY22	adjacent to 2979 Palmer St.	Oakton, VA 22124	YES	38.876948	-77.296091	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	Yes
BR1038	S4182	Private	5/10/2021	BIORETENTION	0.1980	0.7900	FY22	adjacent to 2979 Palmer St.	Oakton, VA 22124	YES	38.876997	-77.295961	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	Yes
DP0747	S3879	Private	9/14/2020	DRY POND (PEAK SHAVER)	4.0000	2.2500	5/10/2021	11495 Commerce Park Dr.	Reston, VA 20191	NO	38.945788	-77.342613	PL22	Difficult Run	VAN-A11R_ZZZ22A00	No	Yes
DP0750	S4028	Private	5/17/2021	EXTENDED DETENTION DRY POND	1.1400	1.8800	FY22	behind 2696 Courthouse Rd.	Vienna, VA 22181	YES	38.888093	-77.278361	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	Yes
DP0752	S4107	Private	7/6/2021	EXTENDED DETENTION DRY POND	6.8000	1.1500	FY22	7601 Loisdale Rd.	Springfield, VA 22150	YES	38.753432	-77.180593	PL30	Long Branch	VAN-A15R_LOA01A08	Yes	No
DP0753	S4152	Private	4/13/2021	DRY POND (PEAK SHAVER)	0.9400	1.9200	FY22	behind 1139 Walker Rd.	Great Falls, VA 22066	YES	38.973614	-77.295509	PL22	Difficult Run	VAN-A11R_DIF01B06	Yes	No
DP0754	S0392	Private	7/7/2021	EXTENDED DETENTION DRY POND	1.9100	0.6000	FY22	6650 Metro Access Rd.	Springfield, VA 22150	YES	38.768612	-77.17403	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	No
DP0755	S0392	Private	7/7/2021	EXTENDED DETENTION DRY POND	0.6500	0.2900	FY22	6650 Metro Access Rd.	Springfield, VA 22150	YES	38.769444	-77.175048	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	No
MB0320	S3898	Private	10/7/2020	MANUFACTURED BMP (PROPRIETARY) / STORMTECH SYSTEM	0.0609	0.0000	6/9/2021	1210 Raymond Av.	McLean, VA 22101-2632	YES	38.941586	-77.190689	PL23	Dead Run	VAN-A11R_DEA01A04	Yes	Yes
MB0321	S3978	Private	11/17/2020	MANUFACTURED BMP (PROPRIETARY) / STORMTECH SYSTEM	0.0500	0.0000	6/21/2021	6198 Rose Hill Ct.	Alexandria, VA 22310	YES	38.782957	-77.120726	PL26	Cameron Run	VAN-A13R_ZZZ26A00	No	Yes
MB0322	FCPS0112	Private	1/14/2021	MANUFACTURED BMP (PROPRIETARY) / STORMTECH SYSTEM	0.3300	0.0000	FY22	5927 Westchester St.	Alexandria, VA 22310	YES	38.791087	-77.124041	PL26	Cameron Run	VAN-A13R_ZZZ26A00	No	Yes
MB0323	S3908	Private	3/25/2021	MANUFACTURED BMP (PROPRIETARY) / BAYFILTER	1.0000	1.6700	FY22	behind 5601 Ox Rd.	Fairfax Station, VA 22039	YES	38.805009	-77.325085	PL29	Pohick Creek	VAN-A16R_ZZZ29A00	No	Yes
MB0324	S3894	Private	2/17/2021	MANUFACTURED BMP (PROPRIETARY) / STORMFILTER	0.5500	0.1600	FY22	8010 Research Wy.	Springfield, VA 22153	YES	38.74015	-77.205144	PL30	Accotink Creek	VAN-A15R_ACO01A00	Yes	Yes
MB0325	S0191	Private	2/12/2021	MANUFACTURED BMP (PROPRIETARY) / CONTECH CDS	1.4000	0.5100	5/25/2021	5321 Shawnee Rd.	Alexandria, VA 22312	YES	38.806667	-77.1653	PL26	Cameron Run	VAN-A13R_ZZZ26A00	No	No
MB0326	S4030	Private	5/18/2021	MANUFACTURED BMP (PROPRIETARY) / STORMFILTER	0.0700	0.4400	FY22	6600 South Kings Hy.	Alexandria, VA 22306	YES	38.776028	-77.08993	PL26	Cameron Run	VAN-A13R_ZZZ26A00	No	No
MB0327	S0610	Private	2/17/2021	MANUFACTURED BMP (PROPRIETARY) / STORMFILTER	1.0700	0.2300	6/15/2021	7108 Braddock Rd.	Annandale, VA 22003	YES	38.813088	-77.190578	PL26	Backlick Run	VAN-A13R_BAL01A00	Yes	Yes
MB0328	S0610	Private	2/17/2021	MANUFACTURED BMP (PROPRIETARY) / CONTECH CDS	3.1000	0.0000	6/15/2021	7120 Braddock Rd.	Annandale, VA 22003	YES	38.813068	-77.191246	PL26	Backlick Run	VAN-A13R_BAL01A00	Yes	Yes
MB0329	S4031	Private	5/18/2021	MANUFACTURED BMP (PROPRIETARY) / STORMTECH SYSTEM	1.3000	0.0000	FY22	5415 Industrial Dr.	Springfield, VA 22151	YES	38.804623	-77.168936	PL26	Cameron Run	VAN-A13R_ZZZ26A00	No	No
MB0330	S4034	Private	5/18/2021	MANUFACTURED BMP (PROPRIETARY) / BAYFILTER	0.8800	0.4100	FY22	near 6277 Afforth Av.	Alexandria, VA 22315	YES	38.764966	-77.158751	PL30	Long Branch	VAN-A15R_LOA01A08	Yes	Yes
MB0331	S4035	Private	5/18/2021	MANUFACTURED BMP (PROPRIETARY) / STORMFILTER	1.6500	0.0000	FY22	6410 Arlington Bv.	Falls Church, VA 22042	YES	38.872607	-77.161678	PL26	Cameron Run	VAN-A13R_ZZZ26A00	No	Yes
MB0332	S4035	Private	5/18/2021	MANUFACTURED BMP (PROPRIETARY) / STORMFILTER	0.4100	0.0000	FY22	6410 Arlington Bv.	Falls Church, VA 22042	YES	38.872307	-77.161653	PL26	Cameron Run	VAN-A13R_ZZZ26A00	No	Yes
MB0333	S0768	Private	3/29/2021	MANUFACTURED BMP (PROPRIETARY) / STORMTECH SYSTEM	1.1600	0.0000	FY22	6295 Edsall Rd.	Alexandria, VA 22312	YES	38.800677	-77.140716	PL26	Backlick Run	VAN-A13R_BAL01A00	Yes	No
MB0334	S1040	Private	4/13/2021	MANUFACTURED BMP (PROPRIETARY) / BAYFILTER	2.9300	0.0000	FY22	4650 Shirley Gate Ct.	Fairfax, VA 22032	YES	38.838988	-77.343653	PL46	Lower Bull Run	VAN-A23R_ZZZ46A00	No	Yes
MB0335	S4106	Private	5/20/2021	MANUFACTURED BMP (PROPRIETARY) / BAYFILTER	0.6500	0.0000	FY22	behind 9560 Katelyn Zinn Pl.	Burke, VA, 22015	YES	38.790508	-77.274635	PL29	Pohick Creek	VAN-A16R_POH03A04	Yes	No
MB0336	S4088	Private	5/19/2021	MANUFACTURED BMP (PROPRIETARY) / CONTECH VORTSENTRY	1.1500	0.1100	FY22	near 6301 Edsall Rd.	Alexandria, VA 22312	YES	38.800082	-77.144936	PL26	Turkeycock Run	VAN-A13R_TUC01A14	No	Yes
MB0338	S4107	Private	7/6/2021	MANUFACTURED BMP (PROPRIETARY) / CONTECH CDS	0.2500	0.0100	FY22	7601 Loisdale Rd.	Springfield, VA 22150	YES	38.754057	-77.181378	PL30	Long Branch	VAN-A15R_LOA01A08	Yes	No
MB0339	S4201	Private	7/9/2021	MANUFACTURED BMP (PROPRIETARY) / FIRST DEFENSE	0.1300	0.0000	FY22	14905 Murdock St.	Chantilly, VA 20151	YES	38.912806	-77.463502	PL45	Cub Run	VAN-A22R_CUB02A02	Yes	No
MB0340	S4201	Private	7/9/2021	MANUFACTURED BMP (PROPRIETARY) / STORMTECH SYSTEM	0.1300	0.0000	FY22	14905 Murdock St.	Chantilly, VA 20151	YES	38.912732	-77.463392	PL45	Cub Run	VAN-A22R_CUB02A02	Yes	No
PP0085	S0131	Private	9/28/2020	PERMEABLE PAVEMENT / PERMEABLE PAVERS	0.1500	0.0000	6/7/2021	9642 Burke Lake Rd.	Burke, VA 22015	YES	38.785156	-77.279642	PL29	Pohick Creek	VAN-A16R_ZZZ29A00	No	Yes
PP0099	S4028	Private	5/17/2021	PERMEABLE PAVEMENT / PERMEABLE PAVERS	0.5900	0.2200	FY22	2696 Courthouse Rd.	Vienna, VA 22181	YES	38.888023	-77.278154	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	Yes
PP0100	S4087	Private	5/19/2021	PERMEABLE PAVEMENT / POROUS ASPHALT	0.2130	0.0000	FY22	3229 Sleepy Hollow Rd.	Falls Church, VA 22042	YES	38.858156	-77.163256	PL26	Tripps Run	VAN-A13R_TRI01A00	Yes	No
RT0629	S3214	Private	5/6/2021	ROOFTOP DETENTION	0.5300	0.0000	FY22	7644 Dynatech Ct.	Springfield, VA 22150	NO	38.741341	-77.203882	PL30	Accotink Creek	VAN-A15R_ACO01A00	Yes	Yes
SF0280	S4151	Private	3/29/2021	FILTERING PRACTICE	0.6800	0.5800	FY22	13800 Redskin Dr.	Herndon, VA 20171	YES	38.933513	-77.422195	PL18	Horsepen Run	VAN-A09R_HPR01A00	Yes	No
ST0004	S4107	Private	7/6/2021	INFILTRATION PRACTICE / SYNTHETIC TURF	0.0000	1.6900	FY22	adjacent to 7601 Loisdale Rd.	Springfield, VA 22150	YES	38.755061	-77.180167	PL30	Long Branch	VAN-A15R_LOA01A08	Yes	No
TF0583	S0207	Private	8/24/2020	MANUFACTURED BMP (PROPRIETARY) / FILTERRA	0.3300	0.0400	6/16/2021	6398 Nativity Ln.	Burke, VA 22015	YES	38.778136	-77.280554	PL29	Pohick Creek	VAN-A16R_ZZZ29A00	No	Yes

Facility ID	Site ID	Maintained By	Date Installed	BMP Name	Impervious Acres Treated (ac)	Pervious Acres Treated (ac)	Inspection Date/Year	Facility Address	Facility City/State/Zip	PMA	Latitude	Longitude	HUC6	Receiving Water Name	Receiving Water ID	Receiving Water Impaired	Facility Discharges to Fairfax County's MS4?
TF0584	S3677	Private	8/31/2020	MANUFACTURED BMP (PROPRIETARY) / FILTERRA	0.3400	0.0400	5/21/2021	between 3711 & 3715 Ambrose Hills Rd.	Falls Church, VA 22041	YES	38.84335	-77.140734	PL26	Holmes Run	VAN-A13R_HOR01A00	Yes	Yes
TF0585	S3677	Private	8/31/2020	MANUFACTURED BMP (PROPRIETARY) / FILTERRA	0.2800	0.0500	5/21/2021	between 3711 & 3715 Ambrose Hills Rd.	Falls Church, VA 22041	YES	38.843353	-77.140844	PL26	Holmes Run	VAN-A13R_HOR01A00	Yes	No
TF0586	S3677	Private	8/31/2020	MANUFACTURED BMP (PROPRIETARY) / FILTERRA	0.3100	0.1000	5/21/2021	adjacent to 3755 Signal Knob Ct.	Falls Church, VA 22041	YES	38.843449	-77.141214	PL26	Holmes Run	VAN-A13R_HOR01A00	Yes	Yes
TF0587	S3677	Private	8/31/2020	MANUFACTURED BMP (PROPRIETARY) / FILTERRA	0.1100	0.0000	5/21/2021	between 3711 & 3715 Ambrose Hills Rd.	Falls Church, VA 22041	YES	38.84335	-77.140911	PL26	Holmes Run	VAN-A13R_HOR01A00	Yes	No
TF0588	S3890	Private	9/18/2020	MANUFACTURED BMP (PROPRIETARY) / FILTERRA	0.2600	0.0000	6/9/2021	7700 Arlington Bv.	Falls Church, VA 22046	YES	38.867501	-77.211948	PL26	Holmes Run	VAN-A13R_HOR01B00	Yes	No
TF0589	S3890	Private	9/18/2020	MANUFACTURED BMP (PROPRIETARY) / FILTERRA	0.1900	0.1300	6/9/2021	7700 Arlington Bv.	Falls Church, VA 22046	YES	38.867478	-77.21186	PL26	Holmes Run	VAN-A13R_HOR01B00	Yes	No
TF0590	S3890	Private	9/18/2020	MANUFACTURED BMP (PROPRIETARY) / FILTERRA	0.2300	0.0200	6/9/2021	7700 Arlington Bv.	Falls Church, VA 22046	YES	38.868772	-77.21096	PL26	Holmes Run	VAN-A13R_HOR01B00	Yes	No
TF0591	S3890	Private	9/18/2020	MANUFACTURED BMP (PROPRIETARY) / FILTERRA	0.1600	0.1700	6/9/2021	7700 Arlington Bv.	Falls Church, VA 22046	YES	38.867949	-77.208484	PL26	Holmes Run	VAN-A13R_HOR01B00	Yes	No
TF0592	S3890	Private	9/18/2020	MANUFACTURED BMP (PROPRIETARY) / FILTERRA	0.2500	0.0000	6/9/2021	7700 Arlington Bv.	Falls Church, VA 22046	YES	38.867706	-77.208326	PL26	Cameron Run	VAN-A13R_ZZZ26A00	No	No
TF0593	S3890	Private	9/21/2020	MANUFACTURED BMP (PROPRIETARY) / FILTERRA	0.1200	0.0100	6/9/2021	7700 Arlington Bv.	Falls Church, VA 22046	YES	38.867233	-77.207921	PL26	Cameron Run	VAN-A13R_ZZZ26A00	No	Yes
TF0594	S3890	Private	9/21/2020	MANUFACTURED BMP (PROPRIETARY) / FILTERRA	0.2200	0.0200	6/9/2021	7700 Arlington Bv.	Falls Church, VA 22046	YES	38.866344	-77.208037	PL26	Cameron Run	VAN-A13R_ZZZ26A00	No	Yes
TF0595	S3890	Private	9/21/2020	MANUFACTURED BMP (PROPRIETARY) / FILTERRA	0.1300	0.0100	6/9/2021	7700 Arlington Bv.	Falls Church, VA 22046	YES	38.867217	-77.208496	PL26	Cameron Run	VAN-A13R_ZZZ26A00	No	No
TF0596	S3890	Private	9/21/2020	MANUFACTURED BMP (PROPRIETARY) / FILTERRA	0.1100	0.0100	6/9/2021	7700 Arlington Bv.	Falls Church, VA 22046	YES	38.866904	-77.208624	PL26	Cameron Run	VAN-A13R_ZZZ26A00	No	Yes
TF0597	S3890	Private	9/21/2020	MANUFACTURED BMP (PROPRIETARY) / FILTERRA	0.2600	0.0500	6/9/2021	7700 Arlington Bv.	Falls Church, VA 22046	YES	38.866803	-77.20867	PL26	Cameron Run	VAN-A13R_ZZZ26A00	No	Yes
TF0598	S3890	Private	9/21/2020	MANUFACTURED BMP (PROPRIETARY) / FILTERRA	0.2600	0.1800	6/9/2021	7700 Arlington Bv.	Falls Church, VA 22046	YES	38.866414	-77.20879	PL26	Cameron Run	VAN-A13R_ZZZ26A00	No	Yes
TF0599	S3890	Private	9/21/2020	MANUFACTURED BMP (PROPRIETARY) / FILTERRA	0.2100	0.1400	6/9/2021	7700 Arlington Bv.	Falls Church, VA 22046	YES	38.866548	-77.209989	PL26	Holmes Run	VAN-A13R_HOR01B00	Yes	No
TF0600	S3966	Private	11/9/2020	MANUFACTURED BMP (PROPRIETARY) / FILTERRA	0.2600	0.0100	5/20/2021	7857 Heritage Dr.	Annandale, VA 22003	YES	38.825988	-77.213621	PL30	Accotink Creek	VAN-A15R_ACO02A00	Yes	Yes
TF0603	S4028	Private	5/17/2021	MANUFACTURED BMP (PROPRIETARY) / FILTERRA	0.1600	0.0500	FY22	opposite 2696 Salem Oak Ln.	Vienna, VA 22181	YES	38.886919	-77.27846	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	No
TF0604	S0857	Private	2/12/2021	MANUFACTURED BMP (PROPRIETARY) / FILTERRA	0.1900	0.0400	FY22	1800 Jonathan Wy.	Reston, VA 20190	YES	38.960771	-77.353142	PL22	Colvin Run	VAN-A11R_COV02A02	Yes	Yes
TF0605	S0610	Private	2/17/2021	MANUFACTURED BMP (PROPRIETARY) / FILTERRA	0.1850	0.0450	6/15/2021	7108 Braddock Rd.	Annandale, VA 22003	YES	38.812257	-77.189951	PL26	Backlick Run	VAN-A13R_BAL01A00	Yes	Yes
TF0606	S0610	Private	2/17/2021	MANUFACTURED BMP (PROPRIETARY) / FILTERRA	0.1850	0.0450	6/15/2021	7108 Braddock Rd.	Annandale, VA 22003	YES	38.81225	-77.190528	PL26	Backlick Run	VAN-A13R_BAL01A00	Yes	Yes
TF0607	S2300	Private	3/24/2021	MANUFACTURED BMP (PROPRIETARY) / FILTERRA	0.2000	0.0000	FY22	7010 Braddock Rd.	Annandale, VA 22003	YES	38.812376	-77.187831	PL26	Backlick Run	VAN-A13R_BAL01A00	Yes	Yes
TF0608	S2300	Private	3/24/2021	MANUFACTURED BMP (PROPRIETARY) / FILTERRA	0.0370	0.0560	FY22	7010 Braddock Rd.	Annandale, VA 22003	YES	38.813009	-77.187778	PL26	Backlick Run	VAN-A13R_BAL01A00	Yes	Yes
TF0609	S2300	Private	3/24/2021	MANUFACTURED BMP (PROPRIETARY) / FILTERRA	0.1400	0.2040	FY22	7010 Braddock Rd.	Annandale, VA 22003	YES	38.813006	-77.187634	PL26	Backlick Run	VAN-A13R_BAL01A00	Yes	Yes
TF0610	S3978	Private	3/22/2021	MANUFACTURED BMP (PROPRIETARY) / FILTERRA	0.2300	0.0000	6/21/2021	near 6226 Rose Hill Ct.	Alexandria, VA 22310	YES	38.782571	-77.121216	PL26	Cameron Run	VAN-A13R_ZZZ26A00	No	Yes
TF0611	S4107	Private	7/6/2021	MANUFACTURED BMP (PROPRIETARY) / FILTERRA	0.1200	0.0000	FY22	7601 Loisdale Rd.	Springfield, VA 22150	YES	38.753703	-77.180537	PL30	Long Branch	VAN-A15R_LOA01A08	Yes	No
TF0612	S4178	Private	5/12/2021	MANUFACTURED BMP (PROPRIETARY) / FILTERRA	0.0500	0.0000	FY22	7615 Southdown Rd.	Alexandria, VA 22308	YES	38.749604	-77.047935	PL28	Potomac River	VAN-A14E_POT01A08	Yes	No
TR1709	S3878	Private	8/24/2020	INFILTRATION PRACTICE	0.4700	0.4300	6/15/2021	9886 River Chase Wy.	Great Falls, VA 22066	YES	39.039123	-77.286041	PL23	Potomac River/Nichols Run/Scott Run	VAN-A11R_ZZZ23A00	No	No
TR1710	S3880	Private	9/15/2020	INFILTRATION PRACTICE	0.0700	0.0600	5/20/2021	7520 Arlington Bv.	Falls Church, VA 22042	YES	38.86637	-77.205476	PL26	Cameron Run	VAN-A13R_ZZZ26A00	No	Yes
TR1711	S3881	Private	9/17/2020	INFILTRATION PRACTICE	0.0700	0.0000	6/7/2021	5210 A Dunleigh Dr.	Burke, VA 22015	YES	38.809627	-77.260867	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	Yes
TR1712	S3885	Private	9/17/2020	INFILTRATION PRACTICE	0.1000	0.0000	4/16/2021	1922 Storm Dr.	Falls Church, VA 22043	NO	38.913209	-77.200155	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
TR1713	S3887	Private	9/18/2020	INFILTRATION PRACTICE	0.0800	0.0000	4/20/2021	7016 Churchill Rd.	McLean, VA 22101	NO	38.945914	-77.187549	PL23	Dead Run	VAN-A11R_DEA01A04	Yes	Yes
TR1714	S3888	Private	9/18/2020	INFILTRATION PRACTICE	0.0299	0.0000	4/2/2021	6602 Byrnes Dr.	McLean, VA 22101	YES	38.918205	-77.170478	PL24	Pimmit Run	VAN-A12R_PIM02B06	Yes	No
TR1715	S3891	Private	9/21/2020	INFILTRATION PRACTICE	0.0120	0.0087	3/26/2021	1702 Bradmore Ct.	McLean, VA 22101	NO	38.92243	-77.180913	PL24	Pimmit Run	VAN-A12R_PIM02B06	Yes	Yes
TR1716	S3893	Private	9/21/2020	INFILTRATION PRACTICE	0.0259	0.0000	3/22/2021	1702 Sirine Dr.	McLean, VA 22101	YES	38.922717	-77.159842	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	No
TR1717	S3895	Private	9/28/2020	INFILTRATION PRACTICE	0.2500	0.0000	4/7/2021	1315 Rockland Te.	McLean, VA 22101	YES	38.937914	-77.146686	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	No
TR1718	S3896	Private	10/5/2020	INFILTRATION PRACTICE	0.0500	0.0000	4/26/2021	6909 Arbor Ln.	McLean, VA 22101-1543	YES	38.957712	-77.18449	PL23	Dead Run	VAN-A11R_DED01A04	Yes	Yes
TR1719	S3897	Private	10/5/2020	INFILTRATION PRACTICE	0.0600	0.0000	3/26/2021	1736 N Albemarle St.	McLean, VA 22101-4221	YES	38.919089	-77.139751	PL24	Little Pimmit Run	VAN-A12R_LIO01A10	Yes	Yes
TR1720	S3899	Private	10/8/2020	INFILTRATION PRACTICE	0.0300	0.0000	4/9/2021	7405 Lisle Av.	Falls Church, VA 22043	YES	38.917797	-77.200312	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	No
TR1721	S3900	Private	10/8/2020	INFILTRATION PRACTICE	0.0580	0.0000	4/14/2021	1829 Dalmation Dr.	McLean, VA 22101	YES	38.91518	-77.184793	PL24	Pimmit Run	VAN-A12R_PIM02B06	Yes	Yes
TR1722	S3903	Private	10/13/2020	INFILTRATION PRACTICE	0.0600	0.0000	4/20/2021	1457 Pathfinder Ln.	McLean, VA 22101	YES	38.932208	-77.185893	PL23	Dead Run	VAN-A11R_DEA01A04	Yes	Yes
TR1723	S3904	Private	10/13/2020	INFILTRATION PRACTICE	0.0400	0.0000	4/29/2021	2200 Leeland Dr.	Falls Church, VA 22043	YES	38.90257	-77.165737	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
TR1724	S3905	Private	10/13/2020	INFILTRATION PRACTICE	0.0510	0.0000	3/26/2021	6803 Dean Dr.	McLean, VA 22101	YES	38.918955	-77.178629	PL24	Pimmit Run	VAN-A12R_PIM02B06	Yes	Yes
TR1725	S3906	Private	10/14/2020	INFILTRATION PRACTICE	0.0600	0.0000	4/26/2021	2437 Carey Ln.	Vienna, VA 22181-5445	YES	38.897366	-77.282472	PL22	Difficult Run	VAN-A11R_ZZZ22A00	No	No
TR1726	S3907	Private	10/14/2020	INFILTRATION PRACTICE	0.0600	0.0000	4/7/2021	1581 Forest Villa Ln.	McLean, VA 22101	YES	38.929148	-77.15822	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
TR1727	S2175	Private	10/14/2020	INFILTRATION PRACTICE	0.0500	0.0000	4/20/2021	1411 Mayflower Dr.	McLean, VA 22101	YES	38.933723	-77.188836	PL23	Dead Run	VAN-A11R_DEA01A04	Yes	Yes
TR1728	S3909	Private	10/14/2020	INFILTRATION PRACTICE	0.0300	0.0000	4/7/2021	5932 Oakdale Rd.	McLean, VA 22101	YES	38.925723	-77.136771	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
TR1729	S3910	Private	10/14/2020	INFILTRATION PRACTICE	0.0300	0.0000	4/7/2021	1712 East Av.	McLean, VA 22101	YES	38.921814	-77.157202	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	No
TR1730	S3912	Private	10/14/2020	INFILTRATION PRACTICE	0.0300	0.0000	4/7/2021	6522 Elnido Dr.	McLean, VA 22101	YES	38.92122	-77.168392	PL24	Pimmit Run	VAN-A12R_PIM02B06	Yes	Yes
TR1731	S3913	Private	10/14/2020	INFILTRATION PRACTICE	0.0600	0.0000	4/9/2021	7729 Lisle Av.	Falls Church, VA 22043	NO	38.909623	-77.21356	PL23	Potomac River/Nichols Run/Scott Run	VAN-A11R_ZZZ23A00	No	Yes
TR1732	S3914	Private	10/23/2020	INFILTRATION PRACTICE	0.0300	0.0000	4/20/2021	1901 Cheri Dr.	Falls Church, VA 22043	YES	38.914754	-77.205928	PL23	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	No
TR1733	S3915	Private	10/26/2020	INFILTRATION PRACTICE	0.1800	0.6500	4/26/2021	1142 Langley Ln.	McLean, VA 22101-2231	YES	38.944623	-77.164489	PL23	Turkey Run	VAN-A11R_TUY01A06	Yes	Yes
TR1734	S3916	Private	10/26/2020	INFILTRATION PRACTICE	0.0300	0.0000	4/2/2021	6603 Placid St.	Falls Church, VA 22043	YES	38.905594	-77.17053	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
TR1735	S3917	Private	10/26/2020	INFILTRATION PRACTICE	0.0500	0.0000	4/2/2021	6605 Placid St.	Falls Church, VA 22043-1851	YES	38.905246	-77.1707	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
TR1736	S3921	Private	10/27/2020	INFILTRATION PRACTICE	0.0170	0.0000	4/2/2021	2363 Highland Av.	Falls Church, VA 22046	YES	38.89495	-77.180665	PL26	Tripps Run	VAN-A13R_TRI01A00	Yes	No
TR1737	S3922	Private	10/27/2020	INFILTRATION PRACTICE	0.0240	0.0000	5/20/2021	7903 Shreve Rd.	Falls Church, VA 22043	YES	38.882571	-77.216006	PL26	Cameron Run	VAN-A13R_ZZZ26A00	No	Yes
TR1738	S3922	Private	10/27/2020	INFILTRATION PRACTICE	0.0130	0.0000	5/20/2021	7903 Shreve Rd.	Falls Church, VA 22043	YES	38.882448	-77.21589	PL26	Cameron Run	VAN-A13R_ZZZ26A00	No	Yes
TR1739	S3922	Private	10/27/2020	INFILTRATION PRACTICE	0.0301	0.0000	5/20/2021	7903 Shreve Rd.	Falls Church, VA 22043	YES	38.882347	-77.216113	PL26	Cameron Run	VAN-A13R_ZZZ26A00	No	Yes
TR1740	S3923	Private	10/27/2020	INFILTRATION PRACTICE	0.0700	0.0000	5/10/2021	909 Constellation Dr.	Great Falls, VA 22066	YES	38.987605	-77.288178	PL22	Captain Hickory Run	VAN-A11R_CAH01A04	Yes	Yes
TR1741	S3924	Private	10/27/2020	INFILTRATION PRACTICE	0.0500	0.0000	4/2/2021	6530 Ivy Hill Dr.	McLean, VA 22101	YES	38.91461	-77.169225	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	No
TR1742	S3926	Private	10/28/2020	INFILTRATION PRACTICE	0.0200	0.0000	4/28/2021	6500 Shipyard Pl.	Falls Church, VA 22043	YES	38.908569	-77.166072	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
TR1743	S3928	Private	10/28/2020	INFILTRATION PRACTICE	0.0200	0.0000	4/14/2021	1825 Panarama Ct.	McLean, VA 22101	YES	38.915886	-77.179106	PL24	Pimmit Run	VAN-A12R_PIM02B06	Yes	No
TR1744	S3932	Private	10/28/2020	INFILTRATION PRACTICE	0.0400	0.0000	3/26/2021	1639 Macon St.	McLean, VA 22101	YES	38.923806	-77.176845	PL24	Pimmit Run	VAN-A12R_PIM02B06	Yes	Yes
TR1745	S3935	Private	10/29/2020	INFILTRATION PRACTICE	0.0286	0.0000	4/26/2021	9705 Woodwind Wy.	Vienna, VA 22182	YES	38.918588	-77.28188	PL22	Difficult Run	VAN-A11R_ZZZ22A00	No	No
TR1746	S3938	Private	10/29/2020	INFILTRATION PRACTICE	0.0360	0.0000	5/10/2021	1219 Forestville Dr.	Great Falls, VA 22066	YES	38.959911	-77.270133	PL22	Difficult Run	VAN-A11R_ZZZ22A00	No	Yes
TR1747	S3939	Private	10/29/2020	INFILTRATION PRACTICE	0.0700	0.0000	4/20/2021	7105 Matthew Mills Rd.	McLean, VA 22101	YES	38.94398	-77.190096	PL23	Dead Run	VAN-A11R_DEA01A04	Yes	Yes
TR1748	S3941	Private	10/29/2020	INFILTRATION PRACTICE	0.0500	0.0000	3/22/2021	6803 Tennyson Dr.	McLean, VA 22101	YES	38.928395	-77.178767	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
TR1749	S3942	Private	10/30/2020	INFILTRATION PRACTICE	0.0300	0.0000	4/29/2021	2234 Beacon Ln.	Falls Church, VA 22043	YES	38.901232	-77.166542	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
TR1750	S3945	Private	11/2/2020	INFILTRATION PRACTICE	0.0200	0.0000	3/9/2021	6549 Orland St.	Falls Church, VA 22043	YES	38.904799	-77.169606	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
TR1751	S3946	Private	11/2/2020	INFILTRATION PRACTICE	0.0400	0.0000	4/26/2021	7010 Holyrood Dr.	McLean, VA 22101-1552	YES	38.955818	-77.187008	PL23	Dead Run	VAN-A11R_DEA01A04	Yes	Yes

Facility ID	Site ID	Maintained By	Date Installed	BMP Name	Impervious Acres Treated (ac)	Pervious Acres Treated (ac)	Inspection Date/Year	Facility Address	Facility City/State/Zip	PMA	Latitude	Longitude	HUC6	Receiving Water Name	Receiving Water ID	Receiving Water Impaired	Facility Discharges to Fairfax County's MS4?
TR1752	S3949	Private	11/2/2020	INFILTRATION PRACTICE	0.0900	0.0000	3/22/2021	1513 Oakview Dr.	McLean, VA 22101	YES	38.928122	-77.16316	PL24	Pimmit Run	VAN-A12R_PIM02A00	Yes	Yes
TR1753	S3950	Private	11/4/2020	INFILTRATION PRACTICE	0.0189	0.0000	4/9/2021	1938 Hillside Dr.	Falls Church, VA 22043	YES	38.91073	-77.196134	PL24	Pimmit Run	VAN-A12R_PIM02B06	Yes	No
TR1754	S3952	Private	11/4/2020	INFILTRATION PRACTICE	0.1300	0.0000	3/22/2021	1327 Kurtz Rd.	McLean, VA 22101	YES	38.935741	-77.171071	PL24	Pimmit Run	VAN-A12R_PIM02A00	Yes	No
TR1755	S3953	Private	11/4/2020	INFILTRATION PRACTICE	0.0200	0.0000	3/22/2021	1410 Kurtz Rd.	McLean, VA 22101	YES	38.933552	-77.170795	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
TR1756	S3954	Private	11/4/2020	INFILTRATION PRACTICE	0.0230	0.0000	4/28/2021	8409 Berea Ct.	Vienna, VA 22180	YES	38.882742	-77.235952	PL30	Long Branch	VAN-A15R_LOB01A02	No	Yes
TR1757	S3959	Private	11/5/2020	INFILTRATION PRACTICE	0.0900	0.0000	4/26/2021	1137 Basil Rd.	McLean, VA 22101	NO	38.944596	-77.140662	PL23	Potomac River	NA	NA	No
TR1758	S3961	Private	11/9/2020	INFILTRATION PRACTICE	0.0386	0.0000	4/14/2021	6924 Poppy Dr.	McLean, VA 22101	YES	38.917449	-77.184575	PL24	Pimmit Run	VAN-A12R_PIM02B06	Yes	Yes
TR1759	S3963	Private	11/9/2020	INFILTRATION PRACTICE	0.0500	0.0000	3/26/2021	1627 Woodmoor Ln.	McLean, VA 22101	YES	38.923901	-77.17799	PL24	Pimmit Run	VAN-A12R_PIM02B06	Yes	Yes
TR1760	S3964	Private	11/9/2020	INFILTRATION PRACTICE	0.0300	0.0000	5/20/2021	7211 Farr St.	Annandale, VA 22003	YES	38.836566	-77.194934	PL26	Cameron Run	VAN-A13R_ZZZ26A00	No	Yes
TR1761	S3964	Private	11/9/2020	INFILTRATION PRACTICE	0.0300	0.0000	5/20/2021	7211 Farr St.	Annandale, VA 22003	YES	38.836539	-77.195088	PL26	Cameron Run	VAN-A13R_ZZZ26A00	No	Yes
TR1763	S3967	Private	11/10/2020	INFILTRATION PRACTICE	0.0420	0.0000	4/26/2021	7739 Bridle Path Ln.	McLean, VA 22102	YES	38.941709	-77.21335	PL23	Potomac River/Nichols Run/Scott Run	VAN-A11R_ZZZ23A00	No	Yes
TR1764	S3968	Private	11/10/2020	INFILTRATION PRACTICE / STORMTECH SYSTEM	0.0300	0.0000	3/31/2021	7118 A Shreve Rd.	Falls Church, VA 22043	YES	38.89416	-77.192159	PL26	Tripps Run	VAN-A13R_TRI01A00	Yes	Yes
TR1765	S3969	Private	11/10/2020	INFILTRATION PRACTICE	0.0200	0.0740	6/21/2021	adjacent to 9060 Palmer Dr.	Lorton, VA 22079	NO	38.713145	-77.269742	PL48	Occoquan River/Belmont Bay	VAN-A25R_ZZZ48A00	No	No
TR1766	S3969	Private	11/10/2020	INFILTRATION PRACTICE	0.0200	0.0660	6/21/2021	adjacent to 9060 Palmer Dr.	Lorton, VA 22079	NO	38.713089	-77.269634	PL48	Occoquan River/Belmont Bay	VAN-A25R_ZZZ48A00	No	No
TR1767	S3973	Private	11/10/2020	INFILTRATION PRACTICE	0.0830	0.0000	5/25/2021	2656 Five Oaks Rd.	Vienna, VA 22181	YES	38.888361	-77.283558	PL22	Difficult Run	VAN-A11R_ZZZ22A00	No	No
TR1768	S3975	Private	11/12/2020	INFILTRATION PRACTICE	0.0400	0.0000	6/7/2021	8604 Norfolk Av.	Annandale, VA 22003	YES	38.834107	-77.244323	PL30	Turkey Run	VAN-A15R_TUE01A10	No	Yes
TR1769	S3977	Private	11/17/2020	INFILTRATION PRACTICE	0.0300	0.0000	4/28/2021	10711 Spruce St.	Fairfax, VA 22030	YES	38.868202	-77.31594	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	No
TR1770	S3979	Private	11/23/2020	INFILTRATION PRACTICE	0.0100	0.0000	4/28/2021	2890 Hibbard St.	Oakton, VA 22124	YES	38.881107	-77.295497	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	Yes
TR1771	S3980	Private	11/23/2020	INFILTRATION PRACTICE / STORMTECH SYSTEM	1.7200	0.0000	4/28/2021	adjacent to 11005 Tradewind Ct.	Oakton, VA 22124	YES	38.883201	-77.326893	PL22	Difficult Run	VAN-A11R_DIF04A02	No	Yes
TR1773	S3981	Private	12/2/2020	INFILTRATION PRACTICE	0.2300	0.0000	4/7/2021	1311 Rockland Ter.	McLean, VA 22101	YES	38.938792	-77.14567	PL24	Pimmit Run	VAN-A12R_PIM02A00	Yes	No
TR1774	S3982	Private	12/2/2020	INFILTRATION PRACTICE	0.1400	0.0000	4/7/2021	1313 Rockland Ter.	McLean, VA 22101	YES	38.938268	-77.146602	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	No
TR1775	S3984	Private	7/6/2021	INFILTRATION PRACTICE / STORMTECH SYSTEM	1.2200	3.0900	FY22	adjacent to 12466 Margaret Thomas Ln.	Herndon, VA 20171	YES	38.916984	-77.378633	PL18	Horsepen Run	VAN-A09R_ZZZ18A00	No	Yes
TR1776	S3985	Private	12/3/2020	INFILTRATION PRACTICE	0.0346	0.0000	4/14/2021	1802 Great Falls St.	McLean, VA 22102	YES	38.917579	-77.188014	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
TR1777	S3986	Private	12/3/2020	INFILTRATION PRACTICE	0.0500	0.0000	4/29/2021	1900 Massachusetts Av.	McLean, VA 22101	YES	38.914029	-77.153673	PL24	Little Pimmit Run	VAN-A12R_LIO01A10	Yes	Yes
TR1778	S3987	Private	12/3/2020	INFILTRATION PRACTICE	0.0258	0.0000	4/20/2021	6629 Claymore Ct.	McLean, VA 22101	YES	38.943168	-77.172406	PL23	Dead Run	VAN-A11R_DEA01A04	Yes	No
TR1779	S3990	Private	12/16/2020	INFILTRATION PRACTICE	0.0500	0.0000	FY22	2303 Trott Av.	Vienna, VA 22181	YES	38.908467	-77.294964	PL22	Difficult Run	VAN-A11R_ZZZ22A00	No	Yes
TR1780	S3994	Private	3/29/2021	INFILTRATION PRACTICE	0.0400	0.0000	FY22	1624 Woodmoor Ln.	McLean, VA 22101	YES	38.92422	-77.17814	PL24	Pimmit Run	VAN-A12R_PIM02B06	Yes	Yes
TR1781	S3995	Private	3/29/2021	INFILTRATION PRACTICE	0.0300	0.0000	FY22	1504 Wasp Ln.	McLean, VA 22101	YES	38.930233	-77.191055	PL23	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
TR1782	S3999	Private	5/6/2021	INFILTRATION PRACTICE	0.0365	0.0000	FY22	6935 Hector Rd.	McLean, VA 22101	YES	38.94601	-77.185554	PL23	Dead Run	VAN-A11R_DEA01A04	Yes	Yes
TR1783	S4000	Private	5/6/2021	INFILTRATION PRACTICE	0.0450	0.0000	FY22	7003 Churchill Rd.	McLean, VA 22101	YES	38.945097	-77.186002	PL23	Dead Run	VAN-A11R_DEA01A04	Yes	Yes
TR1784	S4001	Private	5/6/2021	INFILTRATION PRACTICE	0.0600	0.1100	FY22	1905 Great Falls St.	McLean, VA 22101	NO	38.914224	-77.185169	PL24	Pimmit Run	VAN-A12R_PIM02B06	Yes	Yes
TR1785	S4003	Private	5/6/2021	INFILTRATION PRACTICE	0.0400	0.0000	FY22	5804 Poplar Ln.	Falls Church, VA 22041	YES	38.842363	-77.13069	PL26	Cameron Run	VAN-A13R_ZZZ26A00	No	Yes
TR1787	S4005	Private	5/13/2021	INFILTRATION PRACTICE	0.2200	0.6500	FY22	2035 Hunter Mill Rd.	Vienna, VA 22181	YES	38.923491	-77.30514	PL22	Difficult Run	VAN-A11R_ZZZ22A00	No	No
TR1788	S4006	Private	5/13/2021	INFILTRATION PRACTICE	0.1700	0.0000	FY22	1101 Alvord Ct.	McLean, VA 22102	YES	38.954313	-77.23695	PL22	Rocky Run	VAN-A11R_ROE01A08	No	Yes
TR1789	S4007	Private	5/13/2021	INFILTRATION PRACTICE	0.0700	0.0000	FY22	3136 Dashiell Rd.	Falls Church, VA 22042	YES	38.862135	-77.175815	PL26	Tripps Run	VAN-A13R_TRI01A00	Yes	Yes
TR1790	S4012	Private	5/14/2021	INFILTRATION PRACTICE	0.0400	0.0000	FY22	2105 Greenwich St.	Falls Church, VA 22043	YES	38.904995	-77.18616	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	No
TR1791	S4013	Private	5/17/2021	INFILTRATION PRACTICE	0.0700	0.0000	FY22	1903 Bargo Ct.	McLean, VA 22101	YES	38.913806	-77.160158	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
TR1792	S4014	Private	5/17/2021	INFILTRATION PRACTICE	0.7800	0.0000	FY22	1812 Kirby Rd.	McLean, VA 22101	YES	38.917988	-77.158959	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	No
TR1793	S4017	Private	5/17/2021	INFILTRATION PRACTICE	0.0130	0.0000	FY22	1443 Waggaman Cir.	McLean, VA 22101	YES	38.932306	-77.165972	PL24	Pimmit Run	VAN-A12R_PIM02A00	Yes	Yes
TR1794	S4022	Private	5/17/2021	INFILTRATION PRACTICE	0.0200	0.0000	FY22	1930 Hileman Rd.	Falls Church, VA 22043	YES	38.912312	-77.19816	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
TR1795	S4023	Private	5/17/2021	INFILTRATION PRACTICE	0.0025	0.0339	FY22	2006 Lorraine Av.	McLean, VA 22101	YES	38.909063	-77.16214	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
TR1796	S4024	Private	5/17/2021	INFILTRATION PRACTICE	0.0500	0.0000	FY22	1408 Audmar Dr.	McLean, VA 22101	YES	38.933769	-77.190006	PL23	Dead Run	VAN-A11R_DEA01A04	Yes	Yes
TR1799	S4010	Private	5/13/2021	INFILTRATION PRACTICE	0.0400	0.0000	FY22	5941 Oakdale Ct.	McLean, VA 22101	YES	38.926059	-77.137797	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
TR1800	S1068	Private	12/31/2020	INFILTRATION PRACTICE	0.0000	2.9000	6/3/2021	8500 Tyspring St.	Vienna, VA 22182	YES	38.92251	-77.241432	PL22	Old Courthouse Spring Branch	VAN-A11R_OCS01A04	Yes	No
TR1801	S4025	Private	4/6/2021	INFILTRATION PRACTICE	0.0400	0.0000	FY22	1609 Wrightson Dr.	McLean, VA 22101	YES	38.925761	-77.174428	PL24	Pimmit Run	VAN-A12R_PIM02B06	Yes	Yes
TR1802	S3988	Private	3/26/2021	INFILTRATION PRACTICE	1.0200	0.0000	FY22	11924 Braddock Rd.	Fairfax, VA 22030	YES	38.831745	-77.357105	PL46	Lower Bull Run	VAN-A23R_ZZZ46A00	No	No
TR1803	S3988	Private	3/26/2021	INFILTRATION PRACTICE	0.7100	0.0000	FY22	11924 Braddock Rd.	Fairfax, VA 22030	YES	38.831734	-77.358948	PL46	Lower Bull Run	VAN-A23R_ZZZ46A00	No	No
TR1804	S3988	Private	3/26/2021	INFILTRATION PRACTICE	1.2900	0.0000	FY22	11924 Braddock Rd.	Fairfax, VA 22030	YES	38.830957	-77.35999	PL46	Piney Branch	VAN-A23R_PIY01A02	Yes	Yes
TR1805	S4032	Private	4/19/2021	INFILTRATION PRACTICE / STORMTECH SYSTEM	0.2800	0.0000	FY22	behind 4634 Caprino Ct.	Fairfax, VA 22032	YES	38.823358	-77.282173	PL29	Pohick Creek	VAN-A16R_ZZZ29A00	No	Yes
TR1806	S4032	Private	4/19/2021	INFILTRATION PRACTICE / STORMTECH SYSTEM	2.1700	0.0000	FY22	adjacent to 4635 Caprino Ct.	Fairfax, VA 22032	YES	38.822705	-77.28221	PL29	Pohick Creek	VAN-A16R_ZZZ29A00	No	Yes
TR1807	S4033	Private	5/21/2021	INFILTRATION PRACTICE	0.1600	0.1500	FY22	behind 5937 Clapton Ct.	Franconia, VA 22310	YES	38.778579	-77.139889	PL27	Dogue Creek	VAN-A14R_ZZZ27A00	No	Yes
TR1808	S4033	Private	5/21/2021	INFILTRATION PRACTICE	0.0900	0.3700	FY22	near 6400 Beatles Ln.	Franconia, VA 22310	YES	38.779441	-77.139027	PL27	Dogue Creek	VAN-A14R_ZZZ27A00	No	Yes
TR1809	S2108	Private	2/16/2021	INFILTRATION PRACTICE	0.2500	0.0000	FY22	2800 Towerview Rd.	Herndon, VA 20171	YES	38.933115	-77.42348	PL18	Horsepen Run	VAN-A09R_HPR01A00	Yes	Yes
TR1811	S4037	Private	4/6/2021	INFILTRATION PRACTICE	0.2000	0.0000	FY22	6802 Wemberly Way	McLean, VA 22101	YES	38.96082	-77.179257	PL23	Dead Run	VAN-A11R_DEA01A04	Yes	Yes
TR1812	S4037	Private	4/6/2021	INFILTRATION PRACTICE	0.0000	0.0000	FY22	6802 Wemberly Way	Mclean, VA 22101	YES	38.960747	-77.178846	PL23	Dead Run	VAN-A11R_DEA01A04	Yes	Yes
TR1813	S4038	Private	4/7/2021	INFILTRATION PRACTICE	0.0694	0.0000	FY22	6804 Ridgeway Dr.	Springfield, VA 22150	YES	38.770663	-77.194228	PL30	Calamo Branch	VAN-A15R_CAL01A02	No	No
TR1814	S4041	Private	4/7/2021	INFILTRATION PRACTICE	0.0690	0.0000	FY22	11507 Leehigh Dr.	Fairfax, VA 22030	YES	38.843987	-77.343847	PL46	Lower Bull Run	VAN-A23R_ZZZ46A00	No	Yes
TR1815	S4044	Private	4/7/2021	INFILTRATION PRACTICE	0.0300	0.0000	FY22	2133 Haycock Rd.	Falls Church, VA 22043	YES	38.903265	-77.170178	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
TR1816	S4045	Private	4/7/2021	INFILTRATION PRACTICE	0.0700	0.0000	FY22	2129 Haycock Rd.	Falls Church, VA 22043	YES	38.903465	-77.169016	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
TR1818	S4048	Private	4/7/2021	INFILTRATION PRACTICE	0.0371	0.0000	FY22	1814 Rupert St.	McLean, VA 22101	YES	38.916806	-77.182707	PL24	Pimmit Run	VAN-A12R_PIM02B06	Yes	Yes
TR1819	S4052	Private	4/7/2021	INFILTRATION PRACTICE	0.1400	0.0000	FY22	1721 Irvin St.	Vienna, VA 22182	YES	38.92272	-77.254175	PL22	Wolftrap Creek	VAN-A11R_WOT02A14	No	Yes
TR1820	S4059	Private	4/7/2021	INFILTRATION PRACTICE	0.0700	0.0000	FY22	6245 Cottonwood Street	McLean, VA 22101	YES	38.926393	-77.152672	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
TR1821	S4060	Private	4/7/2021	INFILTRATION PRACTICE	0.1400	0.0000	FY22	1511 Oakview Dr.	McLean, VA 22101	YES	38.928289	-77.161897	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
TR1822	S4067	Private	4/8/2021	INFILTRATION PRACTICE	0.1600	0.0000	FY22	2000 Virginia Avenue	McLean, VA 22101	YES	38.90981	-77.158743	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
TR1823	S4067	Private	4/8/2021	INFILTRATION PRACTICE	0.0990	0.0000	FY22	2000 Virginia Avenue	McLean, VA 22101	YES	38.910262	-77.158722	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
TR1824	S4069	Private	4/8/2021	INFILTRATION PRACTICE	0.0300	0.0000	FY22	1002 Turkey Run Rd.	McLean, VA 22101	YES	38.950814	-77.161226	PL23	Turkey Run	VAN-A11R_TUY01A06	Yes	No
TR1825	S4070	Private	4/8/2021	INFILTRATION PRACTICE	0.1000	0.0000	FY22	3710 Annandale Road	Annandale, VA 22003	YES	38.842273	-77.200902	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	Yes
TR1826	S4071	Private	4/8/2021	INFILTRATION PRACTICE	0.0700	0.0000	FY22	3706 Annandale Road	Annandale, VA 22003	YES	38.842501	-77.200949	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	Yes
TR1827	S4072	Private	4/8/2021	INFILTRATION PRACTICE	0.0800	0.0000	FY22	2516 Rambling Rd.	Vienna, VA 22181	YES	38.895093	-77.285964	PL22	Difficult Run	VAN-A11R_ZZZ22A00	No	No
TR1828	S4073	Private	4/8/2021	INFILTRATION PRACTICE	0.0551	0.0000	FY22	1427 Cola Dr.	McLean, VA 22101	YES	38.932968	-77.152037	PL24	Pimmit Run	VAN-A12R_PIM02A00	Yes	Yes

Facility ID	Site ID	Maintained By	Date Installed	BMP Name	Impervious Acres Treated (ac)	Pervious Acres Treated (ac)	Inspection Date/Year	Facility Address	Facility City/State/Zip	PMA	Latitude	Longitude	HUC6	Receiving Water Name	Receiving Water ID	Receiving Water Impaired	Facility Discharges to Fairfax County's MS4?
TR1829	S4074	Private	4/8/2021	INFILTRATION PRACTICE	0.0600	0.0000	FY22	2367 Paddock Ln.	Reston, VA 20191	YES	38.932374	-77.365952	PL22	The Glade	VAN-A11R_THG01A10	No	No
TR1830	S4075	Private	4/8/2021	INFILTRATION PRACTICE	0.0900	0.0000	FY22	6813 Wemberly Way	McLean, VA 22101	YES	38.959257	-77.180277	PL23	Dead Run	VAN-A11R_DEA01A04	Yes	Yes
TR1831	S4076	Private	4/8/2021	INFILTRATION PRACTICE	0.1000	0.0000	FY22	6817 31st Street North	Arlington, VA 22213	YES	38.897207	-77.167671	PL25	Four Mile Run	VAN-A12R_FOU01A00	Yes	Yes
TR1832	S4078	Private	4/8/2021	INFILTRATION PRACTICE	0.1800	0.0000	FY22	1609 Crestwood Lane	McLean, VA 22101	YES	38.925254	-77.139289	PL24	Little Pimmit Run	VAN-A12R_LIO01A10	Yes	Yes
TR1833	S4079	Private	4/8/2021	INFILTRATION PRACTICE	0.0205	0.0000	FY22	6013 Oakdale Road	McLean, VA 22101	YES	38.925736	-77.140438	PL24	Little Pimmit Run	VAN-A12R_LIO01A10	Yes	No
TR1834	S4080	Private	4/8/2021	INFILTRATION PRACTICE	0.2000	0.0000	FY22	1007 Langley Hill Drive	McLean, VA 22101	YES	38.950019	-77.158395	PL23	Potomac River/Nichols Run/Scott Run	VAN-A11R_ZZZ23A00	No	No
TR1835	S4082	Private	4/8/2021	INFILTRATION PRACTICE	0.0300	0.0000	FY22	7814 Bimam Wood Dr.	McLean, VA 22102	YES	38.940081	-77.21666	PL23	Scott Run	VAN-A11R_SCO01A02	No	Yes
TR1836	S4085	Private	4/8/2021	INFILTRATION PRACTICE	0.0632	0.0000	FY22	8941 Highgrove Ct.	Lorton, VA 22079	YES	38.702934	-77.254293	PL48	Mills Branch	VAN-A25R_WLB01A02	Yes	Yes
TR1837	S4086	Private	4/8/2021	INFILTRATION PRACTICE	0.0500	0.0000	FY22	1544 Forest Villa Ln.	McLean, VA 22101	YES	38.931271	-77.160906	PL24	Pimmit Run	VAN-A12R_PIM02A00	Yes	No
TR1838	S4090	Private	4/8/2021	INFILTRATION PRACTICE	0.0400	0.0000	FY22	7820 Calpurnia Ct.	McLean, VA 22102	YES	38.938768	-77.215947	PL23	Scott Run	VAN-A11R_SCO01A02	No	Yes
TR1839	S4094	Private	4/8/2021	INFILTRATION PRACTICE	0.0674	0.0000	FY22	7411 Nigh Rd.	Falls Church, VA 22043	YES	38.90791	-77.202545	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
TR1840	S4095	Private	4/8/2021	INFILTRATION PRACTICE	0.0800	0.0000	FY22	6030 Corland Ct.	McLean, VA 22101	YES	38.919445	-77.142471	PL24	Little Pimmit Run	VAN-A12R_LIO01A10	Yes	Yes
TR1841	S4096	Private	4/9/2021	INFILTRATION PRACTICE	0.0700	0.0000	FY22	6442 Tucker Ave.	McLean, VA 22101	YES	38.915575	-77.163588	PL24	Pimmit Run	VAN-A12R_PIM02B06	Yes	Yes
TR1842	S4098	Private	4/8/2021	INFILTRATION PRACTICE	0.0300	0.0000	FY22	6922 Southridge Dr.	McLean, VA 22101	YES	38.918948	-77.184173	PL24	Pimmit Run	VAN-A12R_PIM02B06	Yes	Yes
TR1843	S4099	Private	4/9/2021	INFILTRATION PRACTICE	0.0248	0.0000	FY22	7313 Sportsman Rd.	Falls Church, VA 22043	YES	38.915174	-77.19889	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
TR1844	S4102	Private	4/9/2021	INFILTRATION PRACTICE	0.0600	0.0000	FY22	7320 Churchill Rd.	McLean, VA 22101	YES	38.948025	-77.19771	PL23	Scott Run	VAN-A11R_SCO01A02	No	No
TR1845	S4103	Private	4/9/2021	INFILTRATION PRACTICE	0.0600	0.0000	FY22	6027 Chesterbrook Rd.	McLean, VA 22101	YES	38.922833	-77.159802	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	No
TR1846	S4084	Private	3/25/2021	INFILTRATION PRACTICE	0.1330	0.0670	FY22	2301 High Dr.	Vienna, VA 22182	YES	38.898284	-77.23614	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	Yes
TR1878	S4159	Private	5/10/2021	INFILTRATION PRACTICE	0.0300	0.3780	FY22	7822 Thor Dr.	Annandale, VA 22003	YES	38.845561	-77.216386	PL30	Accotink Creek	VAN-A15R_ACO02A00	Yes	Yes
TR1879	S4159	Private	5/10/2021	INFILTRATION PRACTICE	0.0700	0.0680	FY22	7822 Thor Dr.	Annandale, VA 22003	YES	38.84542	-77.216187	PL30	Accotink Creek	VAN-A15R_ACO02A00	Yes	Yes
TR1880	S4175	Private	5/10/2021	INFILTRATION PRACTICE	0.0400	0.0000	FY22	1942 Leonard Rd.	Falls Church, VA 22043	YES	38.912527	-77.203612	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
TR1881	S4179	Private	5/10/2021	INFILTRATION PRACTICE	0.1250	0.1790	FY22	2144 Emilys Lane	Falls Church, VA 22043	YES	38.902047	-77.161787	PL24	Potomac River/Four Mile Run	VAN-A12R_ZZZ25A00	No	Yes
TR1882	S4180	Private	5/10/2021	INFILTRATION PRACTICE	0.1500	0.0000	FY22	1332 Sunny Side Ln.	McLean, VA 22102	YES	38.945039	-77.248624	PL22	Difficult Run	VAN-A11R_ZZZ22A00	No	No
TR1892	S4199	Private	7/8/2021	INFILTRATION PRACTICE	0.1200	0.0570	FY22	1418 Kirby Rd.	McLean, VA 22101	NO	38.933573	-77.141685	PL24	Pimmit Run	VAN-A12R_PIM02A00	Yes	No
UG0678	S3214	Private	5/6/2021	UNDERGROUND DETENTION	1.0200	0.0000	FY22	7644 Dynatech Ct.	Springfield, VA 22150	NO	38.741665	-77.203947	PL30	Accotink Creek	VAN-A15R_ACO01A00	Yes	Yes
UG0776	S0207	Private	8/24/2020	UNDERGROUND DETENTION	2.1600	1.0500	6/16/2021	6398 Nativity Ln.	Burke, VA 22015	YES	38.778046	-77.280339	PL29	Pohick Creek	VAN-A16R_ZZZ29A00	No	Yes
UG0777	S1961	Private	8/3/2020	UNDERGROUND DETENTION	5.9000	1.6600	6/18/2021	5919 North Kings Hy.	Alexandria, VA 223030-2013	YES	38.791661	-77.075138	PL26	Hunting Creek	VAN-A13E_HUT01A02	Yes	Yes
UG0778	S3920	Private	10/27/2020	UNDERGROUND DETENTION	0.2550	0.0000	4/7/2021	1108 Basil Rd.	McLean, VA 22101	YES	38.94682	-77.139142	PL23	Potomac River	NA	NA	Yes
UG0779	S3930	Private	10/28/2020	UNDERGROUND DETENTION	0.0308	0.0000	4/7/2021	6813 Rosemont Dr.	McLean, VA 22101	YES	38.923552	-77.179147	PL24	Pimmit Run	VAN-A12R_PIM02B06	Yes	Yes
UG0780	S3930	Private	10/28/2020	UNDERGROUND DETENTION	0.0287	0.0000	4/7/2021	6813 Rosemont Dr.	McLean, VA 22101	YES	38.923511	-77.178913	PL24	Pimmit Run	VAN-A12R_PIM02B06	Yes	Yes
UG0781	S3936	Private	10/29/2020	UNDERGROUND DETENTION	0.0800	0.0000	4/29/2021	6313 N Kensington St.	McLean, VA 22101	YES	38.910339	-77.154212	PL24	Little Pimmit Run	VAN-A12R_LIO01A10	Yes	No
UG0782	S3937	Private	10/29/2020	UNDERGROUND DETENTION	0.0150	0.0000	3/26/2021	6618 Tucker Av.	McLean, VA 22101	YES	38.918126	-77.172242	PL24	Pimmit Run	VAN-A12R_PIM02B06	Yes	Yes
UG0783	S4002	Private	5/6/2021	UNDERGROUND DETENTION	0.0145	0.0000	FY22	1361 Macbeth St.	McLean, VA 22102	YES	38.937666	-77.226355	PL23	Potomac River/Nichols Run/Scott Run	VAN-A11R_ZZZ23A00	No	Yes
UG0784	S4018	Private	5/17/2021	UNDERGROUND DETENTION	0.0330	0.0000	FY22	1507 Walden Dr.	McLean, VA 22101	YES	38.928006	-77.153862	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
UG0785	S4027	Private	12/14/2020	UNDERGROUND DETENTION	21.5000	4.3000	4/30/2021	behind 12300 Sunrise Valley Dr.	Reston, VA 20191	NO	38.951525	-77.374674	PL21	Sugarland Run	VAN-A10R_ZZZ21A00	No	No
UG0786	S3908	Private	3/25/2021	UNDERGROUND DETENTION / STORMTECH SYSTEM	1.0400	3.1300	FY22	behind 5601 Ox Rd.	Fairfax Station, VA 22039	YES	38.805152	-77.325313	PL29	Pohick Creek	VAN-A16R_ZZZ29A00	No	Yes
UG0787	S3908	Private	3/25/2021	UNDERGROUND DETENTION / STORMTECH SYSTEM	0.8200	2.4600	FY22	behind 5601 Ox Rd.	Fairfax Station, VA 22039	YES	38.805187	-77.325026	PL29	Pohick Creek	VAN-A16R_ZZZ29A00	No	Yes
UG0788	S3894	Private	2/17/2021	UNDERGROUND DETENTION	0.5500	0.1600	FY22	8010 Research Wy.	Springfield, VA 22153	YES	38.73994	-77.205132	PL30	Accotink Creek	VAN-A15R_ACO01A00	Yes	Yes
UG0789	S4029	Private	5/18/2021	UNDERGROUND DETENTION	2.3600	0.2800	FY22	2340 Carta Way	Herndon, VA 20171	YES	38.958428	-77.419974	PL18	Horsepen Run	VAN-A09R_ZZZ18A00	No	Yes
UG0790	S0252	Private	12/29/2020	UNDERGROUND DETENTION	3.6200	5.7800	6/3/2021	2200 Centreville Rd.	Herndon, VA 20170	NO	38.958243	-77.403266	PL18	Horsepen Run	VAN-A09R_ZZZ18A00	No	No
UG0791	S0610	Private	2/17/2021	UNDERGROUND DETENTION	1.0700	0.2300	6/15/2021	7108 Braddock Rd.	Annandale, VA 22003	YES	38.81317	-77.19032	PL26	Backlick Run	VAN-A13R_BAL01A00	Yes	Yes
UG0792	S0610	Private	2/17/2021	UNDERGROUND DETENTION	0.3800	0.0800	6/15/2021	7108 Braddock Rd.	Annandale, VA 22003	YES	38.812192	-77.190222	PL26	Backlick Run	VAN-A13R_BAL01A00	Yes	Yes
UG0793	S1023	Private	2/17/2021	UNDERGROUND DETENTION	0.4600	0.0000	FY22	6290 Arlington Bv.	Falls Church, VA 22044	YES	38.872048	-77.153626	PL25	Long Branch	VAN-A12R_LOF01A08	No	Yes
UG0794	S4034	Private	5/18/2021	UNDERGROUND DETENTION	0.9200	3.1300	FY22	near 6277 Alforth Av.	Alexandria, VA 22315	YES	38.765097	-77.158712	PL30	Long Branch	VAN-A15R_LOA01A08	Yes	Yes
UG0795	S4035	Private	5/18/2021	UNDERGROUND DETENTION	2.2700	0.0000	FY22	6410 Arlington Bv.	Falls Church, VA 22042	YES	38.872569	-77.161726	PL26	Cameron Run	VAN-A13R_ZZZ26A00	No	Yes
UG0796	S4051	Private	5/19/2021	UNDERGROUND DETENTION	0.0390	0.0380	FY22	5631 Southampton Dr.	Springfield, VA 22151	YES	38.797615	-77.248086	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	Yes
UG0797	S4057	Private	5/19/2021	UNDERGROUND DETENTION	0.0315	0.0000	FY22	2515 Bucklelew Dr.	Falls Church, VA 22046	YES	38.888043	-77.198646	PL26	Tripps Run	VAN-A13R_TR01A00	Yes	Yes
UG0798	S4063	Private	5/19/2021	UNDERGROUND DETENTION	0.0395	0.0000	FY22	7406 Bethune St.	Falls Church, VA 22043	YES	38.911545	-77.201451	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
UG0799	S4083	Private	5/19/2021	UNDERGROUND DETENTION	0.4300	0.8700	FY22	3610 West Ox Rd.	Fairfax, VA 22033	YES	38.884004	-77.375953	PL45	Cub Run	VAN-A22R_ZZZ45A00	No	Yes
UG0800	S4106	Private	5/20/2021	MANUFACTURED BMP (PROPRIETARY) / STORMTECH SYSTEM	0.6500	0.0000	FY22	behind 9560 Katelyn Zinn Pl.	Burke, VA, 22015	YES	38.790413	-77.274558	PL29	Pohick Creek	VAN-A16R_POH03A04	Yes	No
UG0801	S4088	Private	5/20/2021	UNDERGROUND DETENTION	0.5500	1.8900	FY22	behind 6301 Edsall Rd.	Alexandria, VA 22312	YES	38.80019	-77.144493	PL26	Turkeycock Run	VAN-A13R_TUC01A14	No	Yes
UG0802	S4107	Private	7/6/2021	UNDERGROUND DETENTION	2.3000	0.7600	FY22	7601 Loisdale Rd.	Springfield, VA 22150	YES	38.754179	-77.180212	PL30	Long Branch	VAN-A15R_LOA01A08	Yes	No
UG0803	S4109	Private	7/8/2021	UNDERGROUND DETENTION	0.0400	0.1000	FY22	7413 Sportsman Dr.	Falls Church, VA 22043	YES	38.916294	-77.201565	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
UG0805	S4115	Private	7/8/2021	UNDERGROUND DETENTION	0.0400	0.0000	FY22	2012 Franklin Av.	McLean, VA 22101	NO	38.908527	-77.160881	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
UG0806	S4132	Private	7/8/2021	UNDERGROUND DETENTION	0.1400	0.0000	FY22	821 Turkey Run Rd.	McLean, VA 22101	YES	38.951994	-77.158668	PL23	Potomac River/Nichols Run/Scott Run	VAN-A11R_ZZZ23A00	No	No
UG0807	S4144	Private	7/8/2021	UNDERGROUND DETENTION	0.0340	0.0000	FY22	1615 Rosemont Ct.	McLean, VA 22101	YES	38.924082	-77.178983	PL24	Pimmit Run	VAN-A12R_PIM02B06	Yes	Yes
UG0811	S4155	Private	7/8/2021	UNDERGROUND DETENTION	0.0200	0.0000	FY22	310 Runner Rd.	Great Falls, VA 22066	NO	39.02165	-77.279368	PL23	Potomac River/Nichols Run/Scott Run	VAN-A11R_ZZZ23A00	No	No
UG0812	S4161	Private	7/8/2021	UNDERGROUND DETENTION	0.0400	0.0000	FY22	1925 Macarthur Dr.	McLean, VA 22101	YES	38.912702	-77.161462	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
UG0813	S4163	Private	7/8/2021	UNDERGROUND DETENTION	0.0351	0.0000	FY22	1926 Chemi Dr.	Falls Church, VA 22043	YES	38.911827	-77.2049	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
UG0816	S4198	Private	7/8/2021	UNDERGROUND DETENTION	0.1200	0.0000	FY22	1490 North Point Village Ctr.	Reston, VA 20194	YES	38.978491	-77.34903	PL21	Sugarland Run	VAN-A10R_ZZZ21A00	No	Yes
VS0045	S3883	Private	9/17/2020	VEGETATED SWALE	0.0400	0.0000	6/15/2021	7900 Kent Rd.	Alexandria, VA 22308	YES	38.743551	-77.047832	PL28	Potomac River	VAN-A14E_POT01A08	Yes	No
VS0046	S3965	Private	11/9/2020	VEGETATED SWALE	0.2600	0.5100	4/8/2021	5801 Fox Chapel Estates Dr.	Fairfax, VA 22030	YES	38.815018	-77.371091	PL46	Piney Branch	VAN-A23R_PIY01A02	Yes	No
VS0047	S3908	Private	3/25/2021	VEGETATED SWALE	0.1700	0.1900	FY22	opposite 5597 Ox Rd.	Fairfax Station, VA 22039	YES	38.805521	-77.326083	PL29	Pohick Creek	VAN-A16R_ZZZ29A00	No	Yes
VS0048	S3908	Private	3/25/2021	VEGETATED SWALE	0.1100	0.3400	FY22	opposite 10966 Thompsons Creek Ci.	Fairfax Station, VA 22039	YES	38.804546	-77.325405	PL29	Pohick Creek	VAN-A16R_ZZZ29A00	No	Yes
VS0049	S4040	Private	5/19/2021	VEGETATED SWALE	0.0400	0.0000	FY22	6904 Arbor Ln.	McLean, VA 22101	YES	38.958176	-77.184008	PL23	Dead Run	VAN-A11R_DED01A04	Yes	Yes
VS0050	S4040	Private	5/19/2021	VEGETATED SWALE	0.0400	0.0000	FY22	6904 Arbor Ln.	McLean, VA 22101	YES	38.958147	-77.183676	PL23	Dead Run	VAN-A11R_DEA01A04	Yes	Yes
VS0051	S4106	Private	5/20/2021	VEGETATED SWALE	0.0400	0.0000	FY22	behind 9554 Katelyn Zinn Pl.	Burke, VA, 22015	YES	38.79026	-77.274284	PL29	Pohick Creek	VAN-A16R_POH03A04	Yes	No
VS0052	S4107	Private	7/6/2021	VEGETATED SWALE	0.7100	0.4700	FY22	7601 Loisdale Rd.	Springfield, VA 22150	YES	38.754142	-77.182291	PL30	Long Branch	VAN-A15R_LOA01A08	Yes	No
VS0053	S4107	Private	7/6/2021	VEGETATED SWALE	0.5800	0.1900	FY22	7601 Loisdale Rd.	Springfield, VA 22150	YES	38.754131	-77.181213	PL30	Long Branch	VAN-A15R_LOA01A08	Yes	No
VS0054	S4107	Private	7/6/2021	VEGETATED SWALE	0.6500	0.2800	FY22	7601 Loisdale Rd.	Springfield, VA 22150	YES	38.754289	-77.180242	PL30	Long Branch	VAN-A15R_LOA01A08	Yes	No

Facility ID	Site ID	Maintained By	Date Installed	BMP Name	Impervious Acres Treated (ac)	Pervious Acres Treated (ac)	Inspection Date/Year	Facility Address	Facility City/State/Zip	PMA	Latitude	Longitude	HUC6	Receiving Water Name	Receiving Water ID	Receiving Water Impaired	Facility Discharges to Fairfax County's MS4?
VS0055	S4107	Private	7/6/2021	VEGETATED SWALE	0.6900	0.7000	FY22	7601 Loisdale Rd.	Springfield, VA 22150	YES	38.752432	-77.182126	PL30	Long Branch	VAN-A15R_LOA01A08	Yes	Yes
VS0056	S1680	Private	7/6/2021	VEGETATED SWALE	0.6800	0.0000	FY22	14533 Old Mill Rd.	Centreville, VA 20121	YES	38.821118	-77.459142	PL45	Cub Run	VAN-A22R_CUB01A00	Yes	No
VS0057	S4201	Private	7/9/2021	VEGETATED SWALE	0.3500	0.0000	FY22	14905 Murdock St.	Chantilly, VA 20151	YES	38.912451	-77.463575	PL45	Cub Run	VAN-A22R_CUB02A02	Yes	No
VS0058	S4201	Private	7/9/2021	VEGETATED SWALE	0.1900	0.0000	FY22	14905 Murdock St.	Chantilly, VA 20151	YES	38.912644	-77.463071	PL45	Cub Run	VAN-A22R_CUB02A02	Yes	No
VS0059	S4201	Private	7/9/2021	VEGETATED SWALE	0.0000	0.0000	FY22	14905 Murdock St.	Chantilly, VA 20151	YES	38.912164	-77.463167	PL45	Cub Run	VAN-A22R_CUB02A02	Yes	Yes
WL0004	S0144	Private	5/11/2021	CONSTRUCTED WETLAND	2.8000	13.4000	FY22	11011 Becontree Lake Dr.	Reston, VA 20190	NO	38.964211	-77.326995	PL22	Unnamed tributary to Colvin Run	VAN-A11R_XJJ01A02	No	No
WP0462	S1727	Private	8/19/2020	WET POND	33.1000	49.7000	9/14/2020	rear of 1000 Springvale Rd	Great Falls, VA 22066	NO	38.992218	-77.316294	PL22	Difficult Run	VAN-A11R_ZZZ22A00	No	No

Fairfax County 2021 MS4 Program Plan and Annual Report

Appendix R16

Chesapeake Bay TMDL Action Plan
Implementation Updates

VSMP Permit Number VA0088587
9-30-2021

Summary Table showing Cumulative Progress Towards Action Plan Pollutant Reductions

	Reductions Proposed from Approved Action Plan			Reductions Completed from Approved Action Plan (All Proposed Action Plan Reductions Met or Exceeded)				Reductions Achieved in Addition to Approved Action Plan				Total Reductions Achieved to Date		
Item	**TN (lbs/year)**	**TP (lbs/year)**	**TSS (lbs/year)**	**Completion Reported**	**TN (lbs/year)**	**TP (lbs/year)**	**TSS (lbs/year)**	**Completion Reported**	**TN (lbs/year)**	**TP (lbs/year)**	**TSS (lbs/year)**	**TN (lbs/year)**	**TP (lbs/year)**	**TSS (lbs/year)**
Structural Retrofits for TMDL Compliance	5,731.78	552.73	681,896.28	Action Plan	5,395.89	515.50	651,880.01					**7,143.74**	**681.32**	**791,912.65**
				2017 Annual Report	383.75	38.86	30,496.14	2017 Annual Report	93.95	8.31	5,924.34			
								2018 Annual Report	164.33	15.02	14,429.71			
								FCPS Projects	204.91	18.61	13,510.41			
								2019 Annual Report	199.49	19.86	17,164.22			
								2020 Annual Report	464.49	48.36	39,095.44			
								2021 Annual Report	236.93	16.80	19,412.38			
				Total	**5,779.64**	**554.36**	**682,376.15**	**Total**	**1,364.10**	**126.96**	**109,536.50**			
Stream Restoration for TMDL Compliance	18,198.75	5,919.67	1,802,250.84	Action Plan	10,725.21	2,779.45	970,979.98					**37,759.59**	**12,105.01**	**3,698,390.45**
				2017 Annual Report	4,483.83	1,759.38	371,273.81	2017 Annual Report	344.72	129.60	44,621.53			
				2018 Annual Report	3,290.22	1,323.80	423,924.82	2018 Annual Report	3,667.99	590.82	169,126.93			
				2019 Annual Report	62.14	58.77	38,289.73	2019 Annual Report	6,183.98	1,950.09	662,555.52			
								2020 Annual Report	6,907.21	2,423.59	739,653.63			
								2021 Annual Report	2,094.29	1,089.51	277,964.50			
				Total	**18,561.40**	**5,921.40**	**1,804,468.34**	**Total**	**19,198.19**	**6,183.61**	**1,893,922.11**			
All Structural Facilities 2006-2009	5,705.48	670.27	577,628.02	Action Plan	5,705.48	670.27	577,628.02					**5,705.48**	**670.27**	**577,628.02**
Redevelopment	0.00	0.00	0.00	Action Plan	0.00	0.00	0.00	2019 Annual Report	83.79	11.35	6,034.03	**228.77**	**31.25**	**17,877.53**
								2020 Annual Report	93.51	13.26	7,717.41			
								2021 Annual Report	51.47	6.64	4,126.09			
								Total	**228.77**	**31.25**	**17,877.53**			
More Stringent Single Family Residential Standards	135.32	22.09	11,977.54	Action Plan	135.32	22.09	11,977.54	2017 Annual Report	106.35	16.16	8,132.78	**1,299.43**	**128.51**	**34,869.43**
								2018 Annual Report	2.24	0.35	156.00			
								2019 Annual Report	436.90	41.32	788.19			
								2020 Annual Report	298.32	24.03	6,177.25			
								2021 Annual Report	320.30	24.56	7,637.67			
								Total	**1,164.11**	**106.42**	**22,891.89**			
In-Lake Forebay Retrofits	6,615.89	391.88	156,038.24	Action Plan	4,289.43	254.50	99,156.00					**6,615.89**	**391.88**	**156,038.24**
				2018 Annual Report	2,326.46	137.38	56,882.24							
				Total	**6,615.89**	**391.88**	**156,038.24**							
Septic Conversions	1,806.85	0	0.00	Action Plan	1,806.85	0.00	0.00	2017 Annual Report	201.60	0.00	0.00	**2,170.38**	**0.00**	**0.00**
								2018 Annual Report	29.00	0.00	0.00			
								2019 Annual Report	60.48	0.00	0.00			
								2020 Annual Report	50.40	0.00	0.00			
								2021 Annual Report	22.05	0.00	0.00			
								Total	**363.53**	**0.00**	**0.00**			
Off-Site Pollutant Reduction Credits	0.00	0.00	0.00	Action Plan	0.00	0.00	0.00	2021 Annual Report - Wastewater Credit Transfer[b]	**15,482.00**	**1,337.00**	**0.00**	**15,482.00**	**1337.00**	**0.00**

Item	Reductions Proposed from Approved Action Plan			Reductions Completed from Approved Action Plan (All Proposed Action Plan Reductions Met or Exceeded)				Reductions Achieved in Addition to Approved Action Plan				Total Reductions Achieved to Date		
	TN (lbs/year)	TP (lbs/year)	TSS (lbs/year)	Completion Reported	TN (lbs/year)	TP (lbs/year)	TSS (lbs/year)	Completion Reported	TN (lbs/year)	TP (lbs/year)	TSS (lbs/year)	TN (lbs/year)	TP (lbs/year)	TSS (lbs/year)
Nutrient Management Plans[a]	89.58	1.82	0.00	Action Plan	89.58	1.82	0.00					**89.58**	**1.82**	**0.00**
Land Use Change	60.30	3.17	1,746.57	Action Plan	60.30	3.17	1,746.57	2017 Annual Report	13.65	0.48	167.53	**203.24**	**12.38**	**5,824.90**
								2018 Annual Report	10.37	0.79	495.09			
								2019 Annual Report	No land use change reported					
								2020 Annual Report	117.84	7.71	3,236.65			
								2021 Annual Report	1.08	0.23	179.06			
								Total	**142.94**	**9.21**	**4,078.33**			
Additional Means and Measures	0.00	0.00	0.00	Action Plan	0.00	0.00	0.00					**0.00**	**0.00**	**0.00**
Total Means and Methods	**38,343.95**	**7,561.63**	**3,231,537.49**		**38,754.46**	**7,564.99**	**3,234,234.86**		**37,943.64**	**7,794.45**	**2,048,306.36**	**76,698.10**	**15,359.44**	**5,282,541.22**
												Total Adjusted Required Reductions and Offsets for Current Permit Cycle (April 1, 2015 - March 31, 2020)	2,700.77	100.69	153,757.97
												Reductions Applied to Next Permit Cycle (Pending)	73,997.33	15,258.75	5,128,783.25

[a] NMP credit based on Phase I TMDL Action Plan - Phase II Action Plan will incorporate updates to this evaluation

[b] Annual Water Quality Credit Transfer for Calendar Year 2020 from the Upper Occoquan Service Authority - see attached credit transfer

Summary of Required Reductions (based on Action Plan Table 1.B) - using MS4 area at time of Phase I TMDL Action Plan, Phase II Action Plan includes updated MS4 area

Item	TN (lbs/year)	TP (lbs/year)	TSS (lbs/year)
Total Required Reductions and Offsets (from Approved Action Plan)	2,607.69	101.71	152,772.37
+ Required Grandfathered Offsets for Projects Initiating Construction July 1, 2016 - June 30, 2017 (Calculations documented in 2017 annual report)	-20.28	-7.46	-2,666.66
+ Required Grandfathered Offsets for Projects Initiating Construction July 1, 2017 - June 30, 2018 (Calculations documented in 2018 annual report)	29.40	-1.03	-223.12
+ Required Grandfathered Offsets for Projects Initiating Construction July 1, 2018 - June 30, 2019	83.96	7.47	3,875.38
Total Adjusted Required Reductions and Offsets for Current Permit Cycle	**2,700.77**	**100.69**	**153,757.97**

DEQ Credit Exchange Notification

Pursuant to Part I.J.2.f. of the General VPDES Watershed Permit for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Bay Watershed in Virginia (9 VAC 25-820-70), the below named Permittees hereby certify that credits have been transferred between their two facilities as outlined below in full or partial satisfaction of compliance obligations:

Facility generating credits: Upper Occoquan Service Authority (UOSA), Permit #: VAN010019

Jurisdiction acquiring credits: Fairfax County, MS4 Permit # _____

Credits Transferred

Compliance Year: 2020

Delivered Total Nitrogen Credits: 15,482 lbs/yr

Delivered Total Phosphorus Credits: 1,337 lb/yr

I certify under penalty of law that this notification 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 or imprisonment for knowing violations.

Facility generating credits:	Jurisdiction acquiring credits: Fairfax Co.
Charles P. Boepple	
Typed or Printed Name	Typed or Printed Name
Charles P Boepple 2/3/2021	Heather Ambrose 703-324-5816 Heather Ambrose
Signature	Signature
703-530-2200	
Phone Number	Phone Number
February 2, 2021	
Date	Date

VA0088587

Structural Retrofits for TMDL Compliance July 1, 2020 - June 30, 2021

Updated: 8/27/2021

Structural Retrofits

Projects in Addition to Those Reported in the Chesapeake Bay TMDL Action Plan Completed July 1, 2020 to June 30, 2021 (or previously unreported)

Project Name	Substantial Completion	Long.	Lat.	Type of Project or BMP	Treated (Ac)	Impervious Treated (Ac)	Pervious Treated (Ac)	Estimated Cost ($)	Estimated Amount of Total			Pollutant Reduction Calculation Method	% Treated Area Outside Regulated	Baseline Reduction Provided for			Total Credit Received (lb/yr)		
									TN	TP	TSS			TN	TP	TSS	TN	TP	TSS
Construction Complete																			
Herrity Concrete Fountain Replacement	1/29/2021	-77.362500	38.856500	Rainwater Harvesting	2.20	1.87	0.33	$321,750	10.80	0.98	697.00	VA Rainwater Harvesting Spreadsheet	0%	-	-	-	10.80	0.98	697.00
Herrity Concrete Fountain Replacement	1/29/2021	-77.362500	38.856500	Bioretention	0.10	0.08	0.02	$321,750	0.39	0.06	53.67	CBEE Bioretention C/D soils, underdrain	0%	-	-	-	0.39	0.06	53.67
Ben Franklin Park Sec 1	11/25/2020	-77.189329	38.770513	Constructed Wetland	58.30	16.45	41.85	$894,000	89.57	8.83	6,828.08	CBP Retrofits Expert Panel, ST curve, for 0.2 inches of runoff	92%	45.31	5.28	4,389.43	44.26	3.55	2,438.65
Foulger and Boldog	1/15/2021	-77.390302	38.847329	Wet Pond	51.30	14.56	41.85	$72,000	103.74	6.41	2,765.80	CBP Retrofits Expert Panel, ST curve, for 0.67 inches of runoff w/ forebay	53%	24.38	2.76	1,470.80	79.36	3.65	1,295.00
Runnymede Bioretention 1	11/10/2011	-77.370247	38.971078	Bioretention	2.02	0.91	1.11	$275,000	17.76	1.51	1,060.97	CBP Retrofits Expert Panel, RR curve, for 2.11 in runoff treated	0%	-	-	-	17.76	1.51	1,060.97
Runnymede Bioretention 2	11/10/2011	-77.370247	38.971078	Bioretention	1.68	0.57	1.11		13.96	1.08	728.25	CBP Retrofits Expert Panel, RR curve, for 2.32 in runoff treated	0%	-	-	-	13.96	1.08	728.25
Runnymede Filtering Device	11/10/2011	-77.370247	38.971078	Filtering Practices	0.31	0.27	0.04		1.29	0.23	168.97	TP: VA BMP Clearinghouse, TN and TSS: CBP Retrofits Expert Panel, ST cur	0%	-	-	-	1.29	0.23	168.97
Herndon Golf Course Pond Retrofit	11/10/2011	-77.394194	38.978665	Extended Detention Pond	31.40	18.88	12.52	$244,000	88.88	7.14	14,589.32	CBEE Dry Extended Detention, only includes new MS4 treatment area	0%	-	-	-	88.88	7.14	14,589.32
				Subtotal:	**147.31**	**53.59**	**98.83**	**$2,128,500**	**326.39**	**26.24**	**26,892.06**			**69.69**	**8.04**	**5,860.23**	**256.70**	**18.20**	**21,031.83**
																Fairfax Credit	**92.3%**	**236.93**	**16.80**	**19,412.38**
																Herndon Credit	4.2%	10.78	0.76	883.34
																Vienna Credit	3.5%	8.98	0.64	736.11

Control Measures Expected to be Implemented During the Next Reporting Period (July 1, 2021 - June 30, 2022):

As reported in the 2017 Annual Report, Fairfax County has completed the control measures in the approved TMDL Action Plan which were over and above the 5% reduction requirement. The County will continue to report additional implemented projects annually.

Projects currently in construction include: constructed wetlands Gunston Corner at Laurel Hill, Peyton Run, and Sully Basins; Holly Meadows cisterns; Leigh Meadow & Towlston filtering practices; and Springfield Parking Garage and Sully Community Center manufactured treatment devices.

Stream Restoration July 1, 2020 - June 30, 2021

Updated: 8/27/2021

Stream Restoration

Projects in Addition to Those Reported in the Chesapeake Bay TMDL Action Plan Completed July 1, 2020 to June 30, 2021 (or previously unreported)

Project Name	Substantial Completion	Longitude	Latitude	Type of Project or BMP	Acres Treated (Ac)	Impervious Acres Treated (Ac)	Pervious Acres Treated (Ac)	Estimated Cost ($)	Restored Length (LF)	Estimated Amount of Total Pollutant Reduction (lbs/yr)			Pollutant Reduction Calculation Method	% Treated Area Outside Regulated Area	Baseline Reduction Provided for Unregulated Areas (lb/yr)			Total Credit Received (lb/yr)		
										TN	TP	TSS			TN	TP	TSS	TN	TP	TSS
Construction Complete																				
Flag Run at Elgar St	10/21/2020	-77.21222	38.80581	Urban Stream Restoration	207.68	66.46	141.2	$4,480,000	3,245	261	120	41,460	CBP Urban Stream Restoration Expert Panel: Protocol 1 -BANCS Sediment Load Estimate: 229.06 tons/yr, Sediment Delivery Ratio: 0.181	49.9%	107.09	14.16	12,155.87	154.0	106.1	29,304.0
Hunting Creek @ Fairchild	1/19/2021	-77.075361	38.779639	Urban Stream Restoration	125.80	70.20	55.6	$2,461,000	1,187	775	302	37,432	CBP Urban Stream Restoration Expert Panel: Protocol 1 -BANCS Sediment Load Estimate: 575 tons/yr, Protocol 2 - Restored Length 955 lf, Average Stream Bank Width: 1.8 ft, Sediment Delivery Ratio: 0.0651	53.9%	142.34	19.70	17,085.42	633.0	282.2	20,346.4
Old Courthouse Spring Branch - Phase I @ Gosnell Road	1/29/2021	-77.247156	38.925587	Urban Stream Restoration	369.25	259.69	109.6	$7,022,060	3,236	519	239	82,333	CBP Urban Stream Restoration Expert Panel: Protocol 1 -BANCS Sediment Load Estimate: 454.88 tons/yr, Sediment Delivery Ratio: 0.181	39.2%	147.29	19.37	16,604.86	371.3	219.4	65,728.4
Snakeden Branch Tributary @ Lake Audubon	1/15/2021	-77.335564	38.929434	Urban Stream Restoration	46.76	22.44	24.3	$1,860,000	863	134	62	21,344	CBP Urban Stream Restoration Expert Panel: Protocol 1 -BANCS Sediment Load Estimate: 117.92 tons/yr, Sediment Delivery Ratio: 0.181	28.2% Note 1	6.79	0.74	601.58	127.6	61.2	20,741.9
Newington Commons	1/11/2021	-77.2453	38.7299	Urban Stream Restoration	18.88	2.67	16.2	$830,018	351	27	12	4,243	CBP Urban Stream Restoration Expert Panel: Protocol 1 -Restored Length: 351.2ft, Bank Height: 2.5ft, Sediment Delivery Ratio: 0.181	21.6%	2.37	0.27	222.59	24.4	12.0	4,020.5
Abington Court Outfall	11/5/2020	-77.29017	38.821201	Outfall Restoration	85.00	21.25	63.8	$314,292	254	31	14	4,910	CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 254 LF, Average Stream Bank Height: 4 ft, Sediment Delivery Ratio: 0.181	93.7%	28.98	7.21	4,600.68	2.0	7.0	309.3
Gainsborough Drive Outfall Restoration	1/1/2021	-77.28908	38.811902	Outfall Restoration	19.40	6.20	13.2	$464,131	366	56	26	8,844	CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 366 LF, Average Stream Bank Height: 5 ft, Sediment Delivery Ratio: 0.181	31.4%	6.93	0.96	829.82	48.8	24.7	8,014.0
Gillings Road Outfall	7/24/2020	-77.240234	38.767722	Outfall Restoration	19.80	6.90	12.9	$520,991	316	38	18	6,109	CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 316 LF, Average Stream Bank Height: 4 ft, Sediment Delivery Ratio: 0.181	5.7%	0.76	0.06	38.96	37.7	17.7	6,069.6
Miller Heights Outfall	3/11/2021	-77.32549	38.888567	Outfall Restoration	31.00	5.89	25.1	$272,345	403	58	27	9,251	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%	9.66	1.08	883.68	48.6	25.8	8,367.3
Rabbit Branch @ Gainsborough Drive	1/1/2021	-77.28898	38.811793	Outfall Restoration	1,515.50	312.20	1,203.3	$352,415	505	92	42	14,643	CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 505 LF, Average Stream Bank Height: 6 ft, Sediment Delivery Ratio: 0.181	66.9% Note 1	61.67	15.06	8,583.96	30.6	27.4	6,059.1
Raindrop Way Outfall Restoration	1/1/2021	-77.22535	38.728641	Outfall Restoration	40.00	11.60	28.4	$578,460	1,088	99	46	15,774	CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 1088 LF, Average Stream Bank Height: 3 ft, Sediment Delivery Ratio: 0.181	64.4%	20.92	2.20	1,773.04	78.4	43.6	14,000.9
Rockport Road	11/11/2020	-77.27333	38.913687	Outfall Restoration	39.70	13.10	26.6	$441,909	378	92	42	14,614	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%	18.82	2.44	2,087.32	73.2	40.0	12,526.8
Brooktrail Court	6/10/2021	-77.28009	38.928154	Outfall Restoration	39.11	7.04	32.1	$310,026	300	37	17	5,799	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%	21.23	1.99	1,540.12	15.3	14.8	4,259.1
Piney Branch	3/25/2021	-77.111759	38.814183	Urban Stream Restoration	688.50	249.80	438.7	$1,600,000	1,525	655	302	104,039	CBP Urban Stream Restoration Expert Panel: Protocol 1 -BANCS Sediment Load Estimate: 574.81 tons/yr, Sediment Delivery Ratio: 0.181	8.4%	31.18	3.27	2,632.79	624.10	298.5	101,406.0
				Subtotal:	**3,246.38**	**1,055.44**	**2,191.0**	**$21,507,647**	**14,017.00**	**2,874**	**1,269**	**370,795**			**606.03**	**88.51**	**69,640.69**	**2,269.0**	**1,180.4**	**301,153.3**
																	Fairfax Credit	**92.3%**	**2,094.29**	**1,089.51**	**277,964.50**
																	Herndon Credit	4.2%	95.30	49.58	12,648.44
																	Vienna Credit	3.5%	79.42	41.31	10,540.37

Control Measures Expected to be Implemented During the Next Reporting Period (July 1, 2021 - June 30, 2022):

Fairfax County has completed the control measures in the approved TMDL Action Plan as reported in the 2019 annual report. The County will continue to report additional implemented projects annually.

Other stream restoration projects currently in construction include: Leigh Meadow & Towlston; Scotts Run at Old Meadow Road; Accotink Creek at Wakefield Park, and Chestunt Burr Court.

Single Family Residential Development July 1, 2020 to June 30, 2021

Structural BMP reductions for single family residential development under one acre from July 1, 2020 through June 30, 2021 (on parcels intersecting the 2021 MS4).

Plan Number	Project Name	Released Date	Facility Type	Efficiency			Efficiency Source	Area Treated	Impervious Area (ac)	Total POC Reductions (lb/yr)		
				TN	TP	TSS				TN	TP	TSS
009626-INF -004-2	OLIVER ESTATES LOT 68A [DR]	03/02/2021	INFILTRATION PRACTICES LEVEL 1 (PRACTICE 8)	0.80	0.85	0.95	CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.151	0.09	1.71	0.15	110.81
007096-INF -043-2	LANGLEY FOREST SEC 5 LT 17 (DR)	02/18/2021	INFILTRATION PRACTICES LEVEL 1 (PRACTICE 8)	0.80	0.85	0.95	CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.044	0.03	0.53	0.05	37.61
007096-INF -041-4	LANGLEY FOREST LOT 18 SEC 5 (DR)	12/29/2020	MICRO-BIORETENTION (RAINGARDENS) LEVEL 2	0.90	0.90	0.55	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Bioretention C/D soils, underdrain for TSS	0.05	0.05	0.76	0.07	32.21
007096-INF -041-4	LANGLEY FOREST LOT 18 SEC 5 (DR)	12/29/2020	MICRO INFILTRATION LEVEL 2 (250-2500 SQ FT)	0.92	0.93	0.95	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.04	0.09	0.93	0.12	91.80
000357-INF -005-1	PARKVIEW HILLS LOT 33 (DR)	12/29/2020	INFILTRATION PRACTICES LEVEL 2 (PRACTICE 8)	0.92	0.93	0.95	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.2	0.20	3.10	0.30	222.55
000357-INF -005-1	PARKVIEW HILLS LOT 33 (DR)	12/29/2020	INFILTRATION PRACTICES LEVEL 1 (PRACTICE 8)	0.80	0.85	0.95	CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.53	0.00	4.27	0.18	88.52
002367-INF -028-2	LANGLEY MANOR SEC 2 LOT 7 (DR)	07/29/2020	BIORETENTION FILTERS LEVEL 1 WITH UNDERDRAIN	0.64	0.55	0.55	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Bioretention C/D soils, underdrain for TSS	0.13	0.04	1.01	0.06	34.47
000508-INF -022-1	RIVER OAKS SEC 1 LOT 13 (DR)	12/16/2020	DRY CONVEYANCE SWALE LV 1 (BIORETENTN BASIN;SHEET FLOW)	0.55	0.52	0.55	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Vegetated Open Channels C/D soils, no underdrain	0.15	0.04	0.98	0.06	36.40
000508-INF -022-1	RIVER OAKS SEC 1 LOT 13 (DR)	12/16/2020	DRY CONVEYANCE SWALE LV 1 (BIORETENTN BASIN;SHEET FLOW)	0.55	0.52	0.55	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Vegetated Open Channels C/D soils, no underdrain	0.07	0.04	0.54	0.04	28.67
013857-INF -025-2	BROYHILL LANGLEY ESTATES SEC 1 LOT 75 (DR)	07/29/2020	INFILTRATION PRACTICES LEVEL 2 (PRACTICE 8)	0.92	0.93	0.95	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.0475	0.04	0.67	0.06	42.45
013857-INF -021-1	BROYHILL LANGLEY ESTATES SEC 1 LOT 147 (DR)	08/16/2020	INFILTRATION PRACTICES LEVEL 2 (PRACTICE 8)	0.92	0.93	0.95	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.13	0.05	1.49	0.10	64.27
015081-INF -001-2	BALMACARA LOT 6 - 7011 DUNCRAIG CT (DR)	02/11/2021	BIORETENTION BASINS LV 2 NO UNDERGROUND SOIL INFILTRATN	0.90	0.90	0.55	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Bioretention C/D soils, underdrain for TSS	0.254	0.08	2.80	0.18	68.91
009991-INF -002-2	LANGLEY FARMS SEC 1 BLK 2 LTS 19 20 21 (DR)	01/14/2021	INFILTRATION PRACTICES LEVEL 2 (PRACTICE 8)	0.92	0.93	0.95	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.27	0.18	3.63	0.31	215.33
005979-INF -002-4	KEDLESTON LOT 8 [DR]	12/16/2020	MICRO INFILTRATION LEVEL 2 (250-2500 SQ FT)	0.92	0.93	0.95	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.04	0.03	0.56	0.05	35.05
001787-INF -005-2	ANKERDALE LOT 1 (HM)	10/25/2020	INFILTRATION PRACTICES LEVEL 1 (PRACTICE 8)	0.80	0.85	0.95	CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.46	0.14	4.47	0.30	209.23
008192-INF -004-2	MCLEAN HAMLET SEC 1 LOT 94 (DR)	10/01/2020	INFILTRATION PRACTICES LEVEL 1 (PRACTICE 8)	0.80	0.85	0.95	CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.14	0.03	1.29	0.08	51.75
009937-INF -010-3	MCLEAN HAMLET SEC 2 LOT 206 (DR)	09/09/2020	DETENTION-RESIDENTIAL	-	-	-	No Credit	0	0.01	-	-	-
009937-INF -011-3	MCLEAN HAMLET SEC 2 LOT 245 (DR)	03/02/2021	INFILTRATION PRACTICES LEVEL 2 (PRACTICE 8)	0.92	0.93	0.95	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.15	0.05	1.70	0.11	72.34
009937-INF -009-3	MCLEAN HAMLET SEC 2 LOT 287 (DR)	12/30/2020	BIORETENTION BASINS LV 2 NO UNDERGROUND SOIL INFILTRATN	0.90	0.90	0.55	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Bioretention C/D soils, underdrain for TSS	0.04	0.03	0.55	0.05	20.29
009937-INF -012-1	MCLEAN HAMLET SEC 3 LOT 415 (DR)	12/02/2020	INFILTRATION PRACTICES LEVEL 1 (PRACTICE 8)	0.80	0.85	0.95	CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.05	0.04	0.62	0.06	46.18
000804-INF -030-2	HANSBOROUGH LOT 53 (DR)	03/31/2021	INFILTRATION PRACTICES LEVEL 1 (PRACTICE 8)	0.80	0.85	0.95	CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.2	0.06	1.94	0.13	90.15
000427-INF -026-2	BROYHILLS MCLEAN ESTATES SEC 2 LOT 136 [DR]	11/07/2020	BIORETENTION BASINS LV 1 NO UNDERGROUND SOIL INFILTRATN	0.64	0.55	0.55	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Bioretention C/D soils, underdrain for TSS	0.0882	0.03	0.70	0.04	24.95
003890-INF -009-1	BROYHILLS MCLEAN ESTATES SEC 3 LOT 157 (DR)	03/02/2021	BIORETENTION BASINS LV 2 NO UNDERGROUND SOIL INFILTRATN	0.90	0.90	0.55	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Bioretention C/D soils, underdrain for TSS	0.085	0.049	1.07	0.08	35.05
003890-INF -015-2	BROYHILLS MCLEAN ESTATES SEC 3 LT 166 (DR)	07/14/2020	INFILTRATION PRACTICES LEVEL 1 (PRACTICE 8)	0.80	0.85	0.95	CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.07	0.05	0.84	0.08	58.98
003847-INF -027-1	WEST MCLEAN LOT 7A BLK 7 (DR)	01/10/2021	SMALL INFILTRATION -2 (2500-20,000 SQ FT) DRAINAGE AREA	0.92	0.93	0.95	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.13	0.06	1.58	0.12	78.46
002138-INF -009-2	WEST MCLEAN BLK 7 LOTS 58-61 (DR)	10/25/2020	2.I. TO STORMWATER PLANTER (URBAN BIORETENTION) (SPEC #9, APPENDIX A)	0.64	0.55	0.55	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Bioretention C/D soils, underdrain for TSS	0.04	0.04	0.43	0.04	25.77
000545-INF -010-2	SALONA VILLAGE LOT 31 (DR)	01/21/2021	INFILTRATION PRACTICES LEVEL 2 (PRACTICE 8)	0.92	0.93	0.95	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.033	0.0861	0.84	0.11	86.94

Single Family Residential Development July 1, 2020 to June 30, 2021

Plan Number	Project Name	Released Date	Facility Type	Efficiency			Efficiency Source	Area Treated	Impervious Area (ac)	Total POC Reductions (lb/yr)		
				TN	TP	TSS				TN	TP	TSS
005253-INF -056-2	SALONA VILLAGE SEC 3 LOT 30 [DR]	01/13/2021	INFILTRATION PRACTICES LEVEL 2 (PRACTICE 8)	0.92	0.93	0.95	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.048	0.0367	0.67	0.06	42.73
005253-INF -058-2	SALONA VILLAGE SEC 3 LOT 32 (EPLAN) (DR)	04/21/2021	INFILTRATION PRACTICES LEVEL 1 (PRACTICE 8)	0.80	0.85	0.95	CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.09	0.09	1.21	0.12	100.15
005210-INF -015-1	HUNTING RIDGE LOT 4 (DR)	01/13/2021	2.I. TO STORMWATER PLANTER (URBAN BIORETENTION) (SPEC #9, APPENDIX A)	0.64	0.55	0.55	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Bioretention C/D soils, underdrain for TSS	0.03	0.03	0.32	0.03	19.33
024747-INF -010-2	PIMMIT HILLS SEC 7 LOT 12 (DR)	01/14/2021	INFILTRATION PRACTICES LEVEL 2 (PRACTICE 8)	0.92	0.93	0.95	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.041	0.0337	0.59	0.05	38.72
024747-INF -007-1	PIMMIT HILLS LOT 15 SEC 7 (DR)	01/21/2021	BIORETENTION BASINS LV 2 NO UNDERGROUND SOIL INFILTRATN	0.90	0.90	0.55	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Bioretention C/D soils, underdrain for TSS	0.14	0.03	1.45	0.08	29.96
025143-INF -002-2	BROYHILL MCLEAN ESTATES SEC 2 LOT 78 (DR)	09/29/2020	INFILTRATION PRACTICES LEVEL 1 (PRACTICE 8)	0.80	0.85	0.95	CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.1	0.03	0.97	0.07	45.07
001433-INF -015-1	WEST LEWINSVILLE HEIGHTS SEC 6 LOT 72 (DR)	07/07/2020	INFILTRATION PRACTICES LEVEL 2 (PRACTICE 8)	0.92	0.93	0.95	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.1167	0.0346	1.30	0.08	52.21
004285-INF -032-2	MCLEAN MANOR SEC 4 LOT 96 (DR)	07/29/2020	INFILTRATION PRACTICES LEVEL 2 (PRACTICE 8)	0.92	0.93	0.95	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.04	0.04	0.62	0.06	44.51
004800-INF -030-2	ELNIDO ESTATES SEC 1 LOT 6 (DR)	04/21/2021	INFILTRATION PRACTICES LEVEL 2 (PRACTICE 8)	0.92	0.93	0.95	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.0557	0.0325	0.72	0.06	40.04
025158-INF -010-3	ROSEMONT SEC 4 LOT 48 (DR)	02/26/2021	DETENTION-RESIDENTIAL	-	-	-	No Credit	0	0.034	-	-	-
025158-INF -011-2	ROSEMONT SEC 4 LOT 53 (DR)	09/23/2020	INFILTRATION PRACTICES LEVEL 1 (PRACTICE 8)	0.80	0.85	0.95	CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.06	0.04	0.70	0.06	47.85
024835-INF -007-2	SOUTHRIDGE SEC 2 LOT 88 (DR)	10/13/2020	INFILTRATION PRACTICES LEVEL 1 (PRACTICE 8)	0.80	0.85	0.95	CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.026	0.03	0.37	0.04	32.71
005253-INF -050-2	SALONA VILLAGE SEC 7 LOT 25 (DR)	08/03/2020	2.I. TO STORMWATER PLANTER (URBAN BIORETENTION) (SPEC #9, APPENDIX A)	0.64	0.55	0.55	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Bioretention C/D soils, underdrain for TSS	0.029	0.029	0.31	0.03	18.68
005253-INF -050-2	SALONA VILLAGE SEC 7 LOT 25 (DR)	08/03/2020	2.I. TO STORMWATER PLANTER (URBAN BIORETENTION) (SPEC #9, APPENDIX A)	0.64	0.55	0.55	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Bioretention C/D soils, underdrain for TSS	0.027	0.027	0.29	0.02	17.39
			INFILTRATION PRACTICES LEVEL 1 (PRACTICE 8)	0.80	0.85	0.95	CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.013	0.013	0.18	0.02	14.47
006925-INF -002-1	POTOMAC HILLS SEC 4 LT 125 (DR)	08/17/2020	MICRO-BIORETENTION (RAINGARDENS) LEVEL 1	0.64	0.55	0.55	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Bioretention C/D soils, underdrain for TSS	0.13	0.06	1.10	0.07	45.42
006925-INF -004-3	POTOMAC HILLS SEC 2 LOT 175 [DR]	12/23/2020	INFILTRATION PRACTICES LEVEL 2 (PRACTICE 8)	0.92	0.93	0.95	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.1709	0.0551	1.93	0.13	80.65
009249-INF -002-3	FOREST VILLA LOT 15 (DR)	11/25/2020	INFILTRATION PRACTICES LEVEL 1 (PRACTICE 8)	0.80	0.85	0.95	CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.25	0.05	2.29	0.14	89.04
024804-INF -002-2	CHESTERBROOK WOODS-BRIGGS HOOPERS ADDN SEC 3 LT 9	03/23/2021	2.I. TO STORMWATER PLANTER (URBAN BIORETENTION) (SPEC #9, APPENDIX A)	0.64	0.55	0.55	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Bioretention C/D soils, underdrain for TSS	0.0276	0.0276	0.30	0.02	17.78
024804-INF -002-2	CHESTERBROOK WOODS-BRIGGS HOOPERS ADDN SEC 3 LT 9	03/23/2021	2.I. TO STORMWATER PLANTER (URBAN BIORETENTION) (SPEC #9, APPENDIX A)	0.64	0.55	0.55	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Bioretention C/D soils, underdrain for TSS	0.0395	0.0395	0.43	0.04	25.45
004241-INF -013-3	CHESTERBROOK PT LT 9 (DR)	12/02/2020	INFILTRATION PRACTICES LEVEL 2 (PRACTICE 8)	0.92	0.93	0.95	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.14	0.07	1.73	0.13	89.58
004342-INF -023-3	BROOKHAVEN BLK 2 LOTS 8A & 8A1 (DR)	11/02/2020	INFILTRATION PRACTICES LEVEL 2 (PRACTICE 8)	0.92	0.93	0.95	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.17	0.14	2.45	0.22	160.80
025914-INF -002-2	POTOMAC HILLS SEC 1 LOT 12 (EPLAN) (DR)	02/11/2021	2.I. TO STORMWATER PLANTER (URBAN BIORETENTION) (SPEC #9, APPENDIX A)	0.64	0.55	0.55	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Bioretention C/D soils, underdrain for TSS	0.03	0.03	0.32	0.03	19.33
006665-INF -003-2	BROYHILL GLEN GARY PARK SEC 1 LOT 24 (DR)	07/29/2020	2.I. TO STORMWATER PLANTER (URBAN BIORETENTION) (SPEC #9, APPENDIX A)	0.64	0.55	0.55	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Bioretention C/D soils, underdrain for TSS	0.0394	0.0394	0.43	0.04	25.38
006665-INF -003-2	BROYHILL GLEN GARY PARK SEC 1 LOT 24 (DR)	07/29/2020	2.I. TO STORMWATER PLANTER (URBAN BIORETENTION) (SPEC #9, APPENDIX A)	0.64	0.55	0.55	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Bioretention C/D soils, underdrain for TSS	0.0329	0.0329	0.36	0.03	21.20
005212-INF -004-2	REYNOLDS THIRD POTOMAC HILLS LOT 32 (DR)	10/25/2020	MICRO-BIORETENTION (RAINGARDENS) LEVEL 1	0.64	0.55	0.55	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Bioretention C/D soils, underdrain for TSS	0	0.09	0.39	0.06	49.28
005212-INF -005-2	REYNOLDS 2ND ADDN TO POTOMAC HILLS LT 44 (DR)	08/17/2020	DETENTION-RESIDENTIAL	-	-	-	No Credit	0	0.033	-	-	-
001840-INF -002-1	DOMINION WOODS LOT 43 (DR)	04/07/2021	BIORETENTION BASINS LV 2 NO UNDERGROUND SOIL INFILTRATN	0.90	0.90	0.55	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Bioretention C/D soils, underdrain for TSS	0.14	0.06	1.64	0.12	46.39
006828-INF -029-2	CHESTERBROOK WOODS SEC 1 LT 315A AND PT OF 315B (	07/29/2020	INFILTRATION PRACTICES LEVEL 2 (PRACTICE 8)	0.92	0.93	0.95	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.04	0.04	0.62	0.06	44.51

Single Family Residential Development July 1, 2020 to June 30, 2021

Plan Number	Project Name	Released Date	Facility Type	Efficiency			Efficiency Source	Area Treated	Impervious Area (ac)	Total POC Reductions (lb/yr)		
				TN	TP	TSS				TN	TP	TSS
006828-INF -030-2	CHESTERBROOK WOODS SEC 2 LOT 24 [DR]	07/29/2020	2.I. TO STORMWATER PLANTER (URBAN BIORETENTION) (SPEC #9, APPENDIX A)	0.64	0.55	0.55	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Bioretention C/D soils, underdrain for TSS	0.041	0.041	0.44	0.04	26.41
006828-INF -030-2	CHESTERBROOK WOODS SEC 2 LOT 24 [DR]	07/29/2020	2.I. TO STORMWATER PLANTER (URBAN BIORETENTION) (SPEC #9, APPENDIX A)	0.64	0.55	0.55	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Bioretention C/D soils, underdrain for TSS	0.024	0.024	0.26	0.02	15.46
007913-INF -008-2	SIMPSON AND MAYS 1ST ADDN TO CHESTERBROOK LOT 28	10/25/2020	INFILTRATION PRACTICES LEVEL 2 (PRACTICE 8)	0.92	0.93	0.95	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.28	0.18	3.72	0.31	217.00
007913-INF -009-2	SIMPSON & MAYS 1ST ADDN CHESTERBROOK WOODS LOT 36	12/02/2020	INFILTRATION PRACTICES LEVEL 1 (PRACTICE 8)	0.80	0.85	0.95	CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.0307	0.0205	0.36	0.03	24.51
024491-INF -013-3	WRENNWOOD SEC 4 LOT 13 [DR]	12/30/2020	INFILTRATION PRACTICES LEVEL 2 (PRACTICE 8)	0.92	0.93	0.95	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.08	0.08	1.24	0.12	89.02
024785-INF -006-1	GENTRYS ADDN TO CHESTERBROOK WOODS LOT 10 (DR)	02/18/2021	INFILTRATION PRACTICES LEVEL 2 (PRACTICE 8)	0.92	0.93	0.95	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.08	0.08	1.24	0.12	89.02
002102-INF -023-2	LITTLE VIENNA EST SEC 2 LOT 51 - 2303 TROTT AVE (H	08/26/2020	INFILTRATION PRACTICES LEVEL 2 (PRACTICE 8)	0.92	0.93	0.95	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.08	0.05	1.05	0.09	60.65
006904-INF -028-2	ORCHARD VIEW LOT 54 (HM)	10/09/2020	INFILTRATION PRACTICES LEVEL 2 (PRACTICE 8)	0.92	0.93	0.95	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0	0.08	0.50	0.09	75.66
005134-INF -191-2	PIMMIT HILLS SEC 6 LOT 130 (DR)	08/26/2020	2.I. TO STORMWATER PLANTER (URBAN BIORETENTION) (SPEC #9, APPENDIX A)	0.25	0.40	0.51	CBP Retrofit Curves - ST; 0.48" Runoff Depth to approximate 40% approved phosphorus removal efficiency per VA BMP Clearinghouse	0.013	0.013	0.05	0.01	7.77
			2.I. TO STORMWATER PLANTER (URBAN BIORETENTION) (SPEC #9, APPENDIX A)	0.64	0.55	0.55	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Bioretention C/D soils, underdrain for TSS	0.014	0.014	0.15	0.01	9.02
005134-INF -217-2	PIMMIT HILLS SEC 6 LOT 141 (EPLAN) (DR)	06/23/2021	2.I. TO STORMWATER PLANTER (URBAN BIORETENTION) (SPEC #9, APPENDIX A)	0.64	0.55	0.55	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Bioretention C/D soils, underdrain for TSS	0.0056	0.0056	0.06	-	3.61
			2.I. TO STORMWATER PLANTER (URBAN BIORETENTION) (SPEC #9, APPENDIX A)	0.64	0.55	0.55	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Bioretention C/D soils, underdrain for TSS	0.0037	0.0037	0.04	-	2.38
			2.I. TO STORMWATER PLANTER (URBAN BIORETENTION) (SPEC #9, APPENDIX A)	0.64	0.55	0.55	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Bioretention C/D soils, underdrain for TSS	0.0254	0.0254	0.27	0.02	16.36
			2.I. TO STORMWATER PLANTER (URBAN BIORETENTION) (SPEC #9, APPENDIX A)	0.64	0.55	0.55	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Bioretention C/D soils, underdrain for TSS	0.0201	0.0201	0.22	0.02	12.95
005134-INF -203-2	PIMMIT HILLS SEC 6 LOT 261 (DR)	02/26/2021	MICRO-BIORETENTION (RAINGARDENS) LEVEL 2	0.90	0.90	0.55	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Bioretention C/D soils, underdrain for TSS	0.077	0.0538	1.03	0.09	36.90
004023-INF -003-2	STONEWALL MANOR SEC 2 LOT 215 (PR)	04/21/2021	INFILTRATION PRACTICES LEVEL 1 (PRACTICE 8)	0.80	0.85	0.95	CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.07	0.03	0.73	0.06	40.06
002830-INF -002-2	DUNN LORING BLK 23 LOT 39B (PR)	07/29/2020	2.I. TO STORMWATER PLANTER (URBAN BIORETENTION) (SPEC #9, APPENDIX A)	0.64	0.55	0.55	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Bioretention C/D soils, underdrain for TSS	0.04	0.04	0.43	0.04	25.77
002830-INF -002-2	DUNN LORING BLK 23 LOT 39B (PR)	07/29/2020	2.I. TO STORMWATER PLANTER (URBAN BIORETENTION) (SPEC #9, APPENDIX A)	0.64	0.55	0.55	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Bioretention C/D soils, underdrain for TSS	0.02	0.02	0.22	0.02	12.88
025915-INF -001-1	PIMMIT HILLS SEC 9 LOT 48 (DR)	03/02/2021	INFILTRATION PRACTICES LEVEL 1 (PRACTICE 8)	0.80	0.85	0.95	CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.04	0.04	0.54	0.06	44.51
005134-INF -163-2	PIMMIT HILLS LOT 87 SEC 3 (DR)	10/25/2020	SOIL COMPOST AMEND(PR.4) TO REDUCE COMPACT LAWN RUNOFF	-	-	-	No Credit	0	0.07	-	-	-
005134-INF -189-1	PIMMIT HILLS SEC 3 LOT 94 (DR)	11/18/2020	DETENTION-RESIDENTIAL	-	-	-	No Credit	0	0.0395	-	-	-
005134-INF -225-2	PIMMIT HILLS SECTION 3 LOT 131 (EPLAN)(DR)	06/23/2021	INFILTRATION PRACTICES LEVEL 1 (PRACTICE 8)	0.80	0.85	0.95	CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.0865	0.0258	0.84	0.06	38.85
005134-INF -212-3	PIMMIT HILLS SEC 6 LOT 182 (EPLAN) [DR]	03/31/2021	DETENTION-RESIDENTIAL	-	-	-	No Credit	0	0.0351	-	-	-
005134-INF -199-2	PIMMIT HILLS SECTION SEC 6 LOT 186 (DR)	09/23/2020	BIORETENTION FILTERS LEVEL 1 WITH UNDERDRAIN	0.64	0.55	0.55	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Bioretention C/D soils, underdrain for TSS	0.01	0.01	0.11	0.01	6.44
005134-INF -183-1	PIMMIT HILLS SEC 6 LOT 241 (DR)	05/19/2021	2.I. TO STORMWATER PLANTER (URBAN BIORETENTION) (SPEC #9, APPENDIX A)	0.64	0.55	0.55	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Bioretention C/D soils, underdrain for TSS	0.053	0.053	0.57	0.05	34.14
005134-INF -201-1	PIMMIT HILLS SEC 6 LOT 266 (DR)	01/13/2021	BIORETENTION FILTERS LEVEL 1 WITH UNDERDRAIN	0.64	0.55	0.55	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Bioretention C/D soils, underdrain for TSS	0.05	0.0303	0.45	0.03	21.42
005134-INF -202-2	PIMMIT HILLS SEC 6 LOT 269 (DR)	06/23/2021	DETENTION-RESIDENTIAL	-	-	-	No Credit	0	0.037	-	-	-
005134-INF -205-3	PIMMIT HILLS SEC 6 LOT 319 [DR]	06/30/2021	INFILTRATION PRACTICES LEVEL 2 (PRACTICE 8)	0.92	0.93	0.95	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.06	0.03	0.74	0.06	38.39
005134-INF -192-2	PIMMIT HILLS SEC 6 LOT 428 (DR)	02/26/2021	DETENTION-RESIDENTIAL	-	-	-	No Credit	0	0.039	-	-	-
024473-INF -004-2	MICKLERS ADDITION TO PIMMIT HILLS LOT 16 (DR)	11/07/2020	2.I. TO STORMWATER PLANTER (URBAN BIORETENTION) (SPEC #9, APPENDIX A)	0.64	0.55	0.55	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Bioretention C/D soils, underdrain for TSS	0	0.014	0.06	0.01	7.67

Single Family Residential Development July 1, 2020 to June 30, 2021

Plan Number	Project Name	Released Date	Facility Type	Efficiency			Efficiency Source	Area Treated	Impervious Area (ac)	Total POC Reductions (lb/yr)		
				TN	TP	TSS				TN	TP	TSS
024473-INF -005-2	MICKLERS ADDITION TO PIMMIT HILLS LOT 20 (DR)	12/23/2020	INFILTRATION PRACTICES LEVEL 2 (PRACTICE 8)	0.92	0.93	0.95	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.1611	0.0674	1.91	0.14	90.65
005134-INF -207-1	MICKLERS ADDN TO PIMMIT HILLS LOT 25 (DR)	01/21/2021	INFILTRATION PRACTICES LEVEL 1 (PRACTICE 8)	0.80	0.85	0.95	CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.09	0.04	0.94	0.07	52.86
005134-INF -211-2	PIMMIT HILLS SEC 1 BLK G LOT 2 (DR)	02/11/2021	INFILTRATION PRACTICES LEVEL 2 (PRACTICE 8)	0.92	0.93	0.95	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.071	0.0356	0.88	0.07	45.53
002898-INF -009-1	SOUTHAMPTON LOT 12 SEC 2 (DR)	07/07/2020	BIORETENTION BASINS LV 1 NO UNDERGROUND SOIL INFILTRATN	0.64	0.55	0.55	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Bioretention C/D soils, underdrain for TSS	0.1503	0.0285	1.09	0.05	30.14
005134-INF -209-1	PIMMIT HILLS SEC 4 LOT 18 (DR)	06/23/2021	INFILTRATION PRACTICES LEVEL 2 (PRACTICE 8)	0.92	0.93	0.95	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.071	0.06	1.03	0.09	68.60
005134-INF -195-2	PIMMIT HILLS SEC 5 LOT 36 (DR)	08/16/2020	2.I. TO STORMWATER PLANTER (URBAN BIORETENTION) (SPEC #9, APPENDIX A)	0.64	0.55	0.55	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Bioretention C/D soils, underdrain for TSS	0.0247	0.0247	0.27	0.02	15.91
005134-INF -193-2	PIMMIT HILLS SEC 8 LOT 9 (DR)	02/26/2021	INFILTRATION PRACTICES LEVEL 2 (PRACTICE 8)	0.92	0.93	0.95	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.053	0.0413	0.75	0.07	47.91
005134-INF -198-2	PIMMIT HILLS SEC 7 LOT 110 (DR)	10/13/2020	2.I. TO STORMWATER PLANTER (URBAN BIORETENTION) (SPEC #9, APPENDIX A)	0.64	0.55	0.55	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Bioretention C/D soils, underdrain for TSS	0.01	0.01	0.11	0.01	6.44
			2.I. TO STORMWATER PLANTER (URBAN BIORETENTION) (SPEC #9, APPENDIX A)	0.64	0.55	0.55	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Bioretention C/D soils, underdrain for TSS	0.01	0.01	0.11	0.01	6.44
005134-INF -190-2	PIMMIT HILLS SEC 7 LOT 270 (DR)	09/23/2020	INFILTRATION PRACTICES LEVEL 2 (PRACTICE 8)	0.92	0.93	0.95	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.02	0.02	0.31	0.03	22.26
024927-INF -006-3	PIMMIT VIEW LOT 21 (DR)	11/07/2020	MICRO INFILTRATION LEVEL 1 (250-2500 SQ FT)	0.80	0.85	0.95	CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.051	0.0248	0.55	0.04	31.97
009219-INF -007-2	LEONARD LOT 12 (DR)	09/09/2020	INFILTRATION PRACTICES LEVEL 2 (PRACTICE 8)	0.92	0.93	0.95	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.12	0.0419	1.37	0.09	59.67
001484-INF -006-3	PIMMIT VIEW SEC 2 LOT 3 (DR)	01/21/2021	DETENTION-RESIDENTIAL	-	-	-	No Credit	0	0.04	-	-	-
001279-INF -056-2	CHURCHILL SEC 1 & 2 BLK D LOT 21 (DR)	10/08/2020	INFILTRATION PRACTICES LEVEL 2 (PRACTICE 8)	0.92	0.93	0.95	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.07	0.07	1.09	0.11	77.89
001279-INF -055-2	CHURCHILL SEC 1 & 2 BLK D LOT 27 (DR)	10/08/2020	INFILTRATION PRACTICES LEVEL 1 (PRACTICE 8)	0.80	0.85	0.95	CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.03	0.03	0.40	0.04	33.38
001610-INF -050-2	CHESTERBROOK GARDENS SEC 2 LOT 69 (EPLAN) (DR)	01/13/2021	INFILTRATION PRACTICES LEVEL 2 (PRACTICE 8)	0.92	0.93	0.95	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.053	0.029	0.67	0.05	36.28
001610-INF -048-2	CHESTERBROOK GARDENS SEC 2 LOT 72 (DR)	10/08/2020	BIORETENTION BASINS LV 2 NO UNDERGROUND SOIL INFILTRATN	0.90	0.90	0.55	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Bioretention C/D soils, underdrain for TSS	0.1	0.04	1.15	0.08	31.57
002013-INF -014-2	KENT GARDENS SEC 2 LOT 1 (DR)	11/18/2020	2.I. TO STORMWATER PLANTER (URBAN BIORETENTION) (SPEC #9, APPENDIX A)	0.64	0.55	0.55	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Bioretention C/D soils, underdrain for TSS	0.012	0.012	0.13	0.01	7.73
002013-INF -014-2	KENT GARDENS SEC 2 LOT 1 (DR)	11/18/2020	2.I. TO STORMWATER PLANTER (URBAN BIORETENTION) (SPEC #9, APPENDIX A)	0.64	0.55	0.55	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Bioretention C/D soils, underdrain for TSS	0.018	0.018	0.19	0.02	11.60
001603-INF -011-3	MARLBORO ESTATES SEC 2 LT 9 (DR)	04/07/2021	DETENTION-RESIDENTIAL	-	-	-	No Credit	0	0.088	-	-	-
001603-INF -009-1	MARLBORO ESTATES SEC 3 LOT 66 (DR)	12/16/2020	INFILTRATION PRACTICES LEVEL 2 (PRACTICE 8)	0.92	0.93	0.95	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.0899	0.0371	1.06	0.08	50.10
001603-INF -014-2	MARLBORO ESTATES SEC 3 LOT 68 (DR)	10/08/2020	2.I. TO STORMWATER PLANTER (URBAN BIORETENTION) (SPEC #9, APPENDIX A)	0.64	0.55	0.55	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Bioretention C/D soils, underdrain for TSS	0.05	0.05	0.54	0.04	32.21
013041-INF -007-1	DEVON PARK SEC 2 LOT 85 (DR)	07/29/2020	INFILTRATION TRENCH - DESIGN 1	0.80	0.85	0.95	CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.17	0.06	1.70	0.12	85.14
025318-INF -002-2	ADA GROVE LOT 5 (DR)	12/16/2020	2.I. TO STORMWATER PLANTER (URBAN BIORETENTION) (SPEC #9, APPENDIX A)	0.64	0.55	0.55	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Bioretention C/D soils, underdrain for TSS	0.04	0.04	0.43	0.04	25.77
025286-INF -006-3	Z B GROVES LOT 15 [DR]	10/09/2020	2.I. TO STORMWATER PLANTER (URBAN BIORETENTION) (SPEC #9, APPENDIX A)	0.64	0.55	0.55	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Bioretention C/D soils, underdrain for TSS	0.04	0.04	0.43	0.04	25.77
002043-INF -021-3	WESTMORELAND PARK SEC 2 LOT 65 (DR)	10/25/2020	2.I. TO STORMWATER PLANTER (URBAN BIORETENTION) (SPEC #9, APPENDIX A)	0.64	0.55	0.55	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Bioretention C/D soils, underdrain for TSS	0.05	0.05	0.54	0.04	32.21
000020-INF -027-3	WESTMORE GARDENS SEC 2 LOT 29 (DR)	12/29/2020	2.I. TO STORMWATER PLANTER (URBAN BIORETENTION) (SPEC #9, APPENDIX A)	0.64	0.55	0.55	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Bioretention C/D soils, underdrain for TSS	0.024	0.024	0.26	0.02	15.46
000020-INF -027-3	WESTMORE GARDENS SEC 2 LOT 29 (DR)	12/29/2020	2.I. TO STORMWATER PLANTER (URBAN BIORETENTION) (SPEC #9, APPENDIX A)	0.64	0.55	0.55	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Bioretention C/D soils, underdrain for TSS	0.025	0.025	0.27	0.02	16.11
000020-INF -026-2	WESTMORE GARDENS SEC 2 LOT 59 (DR)	10/08/2020	INFILTRATION PRACTICES LEVEL 1 (PRACTICE 8)	0.80	0.85	0.95	CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.26	0.1	2.64	0.19	138.00

Single Family Residential Development July 1, 2020 to June 30, 2021

Plan Number	Project Name	Released Date	Facility Type	Efficiency			Efficiency Source	Area Treated	Impervious Area (ac)	Total POC Reductions (lb/yr)		
				TN	TP	TSS				TN	TP	TSS
007419-INF -002-3	JAMES B PHILLIPS PT LT 5 OF LT 8 (DR)	12/16/2020	INFILTRATION PRACTICES LEVEL 2 (PRACTICE 8)	0.92	0.93	0.95	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.15	0.1	2.01	0.17	119.63
015843-INF -001-2	CHESTERFIELD SEC 1 LOT 1 (DR)	03/31/2021	BIORETENTION BASINS LV 2 NO UNDERGROUND SOIL INFILTRATN	0.90	0.90	0.55	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Bioretention C/D soils, underdrain for TSS	0	0.05	0.31	0.05	27.38
015843-INF -001-2	CHESTERFIELD SEC 1 LOT 1 (DR)	03/31/2021	INFILTRATION PRACTICES LEVEL 2 (PRACTICE 8)	0.92	0.93	0.95	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.18	0.14	2.54	0.23	162.47
024725-INF -005-1	HIGHVIEW TERRACE LOT 11 (DR)	10/08/2020	INFILTRATION PRACTICES LEVEL 1 (PRACTICE 8)	0.80	0.85	0.95	CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.07	0.07	0.94	0.10	77.89
001610-RGP -001-1	CHESTERFIELD GARDENS SEC 1 LOT 25 (DR)	08/16/2020	MICRO-BIORETENTION (RAINGARDENS) LEVEL 1	0.64	0.55	0.55	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Bioretention C/D soils, underdrain for TSS	0.0241	0.0241	0.26	0.02	15.53
004520-INF -010-2	FRANKLIN FOREST LOT 30 SEC 2 (DR)	08/26/2020	INFILTRATION PRACTICES LEVEL 1 (PRACTICE 8)	0.80	0.85	0.95	CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.0364	0.0025	0.31	0.02	8.44
005607-INF -009-2	FRANKLIN FOREST LOT 1 PT LOT 2 (DR)	11/25/2020	INFILTRATION PRACTICES LEVEL 2 (PRACTICE 8)	0.92	0.93	0.95	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.37	0.16	4.43	0.32	213.11
005607-INF -009-2	FRANKLIN FOREST LOT 1 PT LOT 2 (DR)	11/25/2020	INFILTRATION PRACTICES LEVEL 2 (PRACTICE 8)	0.92	0.93	0.95	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.23	0.099	2.75	0.20	132.04
001450-INF -007-2	FRANKLIN PARK BLK 4 LOT 1 (DR)	08/16/2020	INFILTRATION PRACTICES LEVEL 2 (PRACTICE 8)	0.92	0.93	0.95	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.05	0.05	0.78	0.08	55.64
015414-INF -025-2	MARLBOROUGH LOT 23 [DR]	03/10/2021	INFILTRATION PRACTICES LEVEL 1 (PRACTICE 8)	0.80	0.85	0.95	CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.1313	0.0331	1.24	0.08	53.23
005735-INF -013-2	KENBARGAN LOT 9 (DR)	07/29/2020	INFILTRATION PRACTICES LEVEL 2 (PRACTICE 8)	0.92	0.93	0.95	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.07	0.07	1.09	0.11	77.89
005735-INF -014-2	KENBARGAN LOT 31 (DR)	04/27/2021	DETENTION-RESIDENTIAL	-	-	-	No Credit	0	0.04	-	-	-
001279-INF -054-2	CHURCHILL SEC 1 BLK H LT 1 (DR)	10/25/2020	BIORETENTION FILTERS LEVEL 1 WITH UNDERDRAIN	0.64	0.55	0.55	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Bioretention C/D soils, underdrain for TSS	0.109	0.0426	0.89	0.05	33.86
008219-INF -004-3	OX ROAD LOT 19 - 3610 WEST OX ROAD (SU)	10/09/2020	DETENTION-RESIDENTIAL	-	-	-	No Credit	0	0.43	-	-	-
005725-INF -026-3	GRAYS SEC 2 LOT 6 (PR)	07/21/2020	INFILTRATION PRACTICES LEVEL 1 (PRACTICE 8)	0.80	0.85	0.95	CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.12	0.01	1.02	0.05	29.50
001361-INF -002-3	FIVE OAKS PT LOT 2 (PR)	07/07/2020	INFILTRATION PRACTICES LEVEL 2 (PRACTICE 8)	0.92	0.93	0.95	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.1495	0.083	1.90	0.15	103.46
002479-INF -006-2	POPLAR HEIGHTS SEC 3 LOT 53 (PR)	12/02/2020	DETENTION-RESIDENTIAL	-	-	-	No Credit	0	0.0315	-	-	-
007214-INF -008-1	BEL AIR LOT 32 SEC 1 (MA)	08/26/2020	INFILTRATION PRACTICES LEVEL 2 (PRACTICE 8)	0.92	0.93	0.95	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.12	0.07	1.55	0.12	86.24
001102-INF -004-4	KIELS GARDENS LOT 17 (BR)	11/02/2020	INFILTRATION PRACTICES LEVEL 2 (PRACTICE 8)	0.92	0.93	0.95	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.093	0.069	1.29	0.11	80.79
004505-INF -001-2	GAINES 1ST ADDN STRATHMEADE SPRINGS LOT 7 (PR)	11/02/2020	BIORETENTION BASINS LV 1 NO UNDERGROUND SOIL INFILTRATN	0.64	0.55	0.55	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Bioretention C/D soils, underdrain for TSS	0.11	0.05	0.93	0.06	38.01
007611-INF -015-2	WAKEFIELD FOREST SEC 3 LOT 116 (BR)	07/20/2020	INFILTRATION PRACTICES LEVEL 1 (PRACTICE 8)	0.80	0.85	0.95	CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.13	0.04	1.26	0.09	59.54
024878-INF -001-3	WINTERSET SEC 1 LOT 2A - 4004 WINTERSET DR (MA)	07/29/2020	MICRO-BIORETENTION (RAINGARDENS) LEVEL 2	0.90	0.90	0.55	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Bioretention C/D soils, underdrain for TSS	0.12	0.05	1.39	0.10	38.98
001259-INF -016-3	FIRST ADDITION HOLMES RUN HEIGHTS LT 43 (MA)	11/02/2020	BIORETENTION BASINS LV 2 NO UNDERGROUND SOIL INFILTRATN	0.90	0.90	0.55	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Bioretention C/D soils, underdrain for TSS	0.15	0.12	2.09	0.19	80.21
007214-INF -009-3	BEL AIR SEC 1 LOT 19 (EPLAN) (MA)	04/27/2021	INFILTRATION PRACTICES LEVEL 2 (PRACTICE 8)	0.92	0.93	0.95	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.0574	0.0528	0.86	0.08	59.52
006806-INF -003-1	MOORE AND KEITH LT 14B-1 (MA)	12/16/2020	INFILTRATION PRACTICES LEVEL 2 (PRACTICE 8)	0.92	0.93	0.95	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.1535	0.07	1.86	0.14	91.84
006806-INF -002-2	MOORE AND KEITH LT 14B-2 (MA)	12/16/2020	INFILTRATION PRACTICES LEVEL 2 (PRACTICE 8)	0.92	0.93	0.95	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.1963	0.1	2.44	0.19	127.36
000898-INF -003-3	FARR AND MCCANDLISH LOT 30A2 (MA)	03/17/2021	INFILTRATION PRACTICES LEVEL 1 (PRACTICE 8)	0.80	0.85	0.95	CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.12	0.03	1.13	0.07	48.41
000898-INF -003-3	FARR AND MCCANDLISH LOT 30A2 (MA)	03/17/2021	INFILTRATION PRACTICES LEVEL 1 (PRACTICE 8)	0.80	0.85	0.95	CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.08	0.03	0.81	0.06	41.73
			INFILTRATION PRACTICES LEVEL 1 (PRACTICE 8)	0.80	0.85	0.95	CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.05	0.03	0.57	0.05	36.72
009628-INF -002-4	BAILEYS CROSSROADS LOT 95 (MA)	08/16/2020	INFILTRATION PRACTICES LEVEL 2 (PRACTICE 8)	0.92	0.93	0.95	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.15	0.04	1.64	0.10	62.88

Single Family Residential Development July 1, 2020 to June 30, 2021

Plan Number	Project Name	Released Date	Facility Type	Efficiency			Efficiency Source	Area Treated	Impervious Area (ac)	Total POC Reductions (lb/yr)		
				TN	TP	TSS				TN	TP	TSS
024921-INF -003-3	OLD CREEK ESTATES SEC 1 LOT 2 (EPLAN)(BR)	03/10/2021	INFILTRATION PRACTICES LEVEL 2 (PRACTICE 8)	0.92	0.93	0.95	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.109	0.0541	1.35	0.10	69.37
001658-INF -002-1	KINGS PARK LT 699 (BR)	12/02/2020	DETENTION-RESIDENTIAL	-	-	-	No Credit	0	0.039	-	-	-
015191-INF -001-2	RAVENSWORTH SEC 3B BLK 3 LOT 34 ADJ CHURCH (BR)	07/20/2020	MICRO-BIORETENTION (RAINGARDENS) LEVEL 2	0.90	0.90	0.55	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Bioretention C/D soils, underdrain for TSS	0.17	0.06	1.91	0.13	49.29
025886-INF -002-2	KATHMOOR LOT 20A (LE)	10/01/2020	BIORETENTION FILTERS LEVEL 1 WITH UNDERDRAIN	0.64	0.55	0.55	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Bioretention C/D soils, underdrain for TSS	0.18	0.1263	1.71	0.12	86.56
007706-INF -015-3	WINDSOR ESTATES LOT 75 SEC 2 / 6437 WINDHAM AVE (L	01/05/2021	INFILTRATION PRACTICES LEVEL 2 (PRACTICE 8)	0.92	0.93	0.95	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.1229	0.09	1.70	0.15	105.64
011889-INF -003-3	DEWEY PARK SEC 1 LOT 16 (LE)	11/01/2020	2.I. TO STORMWATER PLANTER (URBAN BIORETENTION) (SPEC #9, APPENDIX A)	0.64	0.55	0.55	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Bioretention C/D soils, underdrain for TSS	0.024	0.024	0.26	0.02	15.46
011889-INF -003-3	DEWEY PARK SEC 1 LOT 16 (LE)	11/01/2020	2.I. TO STORMWATER PLANTER (URBAN BIORETENTION) (SPEC #9, APPENDIX A)	0.64	0.55	0.55	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Bioretention C/D soils, underdrain for TSS	0.026	0.026	0.28	0.02	16.75
021650-INF -005-2	CHAPEL ACRES SEC 1 LOT 61 (MV)	09/09/2020	BIORETENTION BASINS LV 1 NO UNDERGROUND SOIL INFILTRATN	0.64	0.55	0.55	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Bioretention C/D soils, underdrain for TSS	0	0.0273	0.12	0.02	14.95
008009-INF -051-2	HOLLIN HALL VILLAGE 1 LOT 96 (MV)	10/01/2020	2.I. TO STORMWATER PLANTER (URBAN BIORETENTION) (SPEC #9, APPENDIX A)	0.64	0.55	0.55	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Bioretention C/D soils, underdrain for TSS	0.02	0.02	0.22	0.02	12.88
008009-INF -052-2	HOLLIN HALL VILLAGE SECTION 1 LOT 97 (MV)	10/01/2020	2.I. TO STORMWATER PLANTER (URBAN BIORETENTION) (SPEC #9, APPENDIX A)	0.64	0.55	0.55	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Bioretention C/D soils, underdrain for TSS	0.01	0.01	0.11	0.01	6.44
001815-INF -002-2	WAYNEWOOD SEC 2 BLK 15 LOT 7 (EPLAN) (MV)	03/23/2021	2.I. TO STORMWATER PLANTER (URBAN BIORETENTION) (SPEC #9, APPENDIX A)	0.64	0.55	0.55	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Bioretention C/D soils, underdrain for TSS	0	0.01	0.04	0.01	5.48
008909-INF -002-3	HOLLYMEADE LOT 19 - POOL (EPLAN)(MV)	12/30/2020	INFILTRATION PRACTICES LEVEL 2 (PRACTICE 8)	0.92	0.93	0.95	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.0632	0.0632	0.98	0.10	70.33
000080-INF -006-2	PLYMOUTH HAVEN SEC 2 BLK 4 LOT 2 (MV)	06/23/2021	DETENTION-RESIDENTIAL	-	-	-	No Credit	0	0.0637	-	-	-
							2021 Single Family Credit for Structural BMPs:			**145.81**	**11.45**	**7,637.67**
							2021 Single Family Credit for Nutrient Credit Purchases:			**174.49**	**13.11**	-
							Total 2021 Credit for Single Family < 1 acre:			**320.30**	**24.56**	**7,637.67**

Single Family Residential Development < 1 Acre: Nutrient Credit Purchases Identifed by County July 1, 2020 - June 30, 2021 (on parcels intersecting 2021 MS4)

NCA_ID	PLAN NAME	PLAN NUMBER	DISTURBED ACRES	PHOSPHORUS CREDITS PURCHASED	NITROGEN CREDITS PURCHASED	EFFECTIVE_DATE	PARCEL_PIN	ADDRESS
NCA0884	Plymouth Haven Sec 2, Blk 5, Lot 518	5291-INF-023-1	0.20	0.04	0.63	6/17/2020	1112 04050518	1129 Priscilla Lane, Alexandria, VA 22308
NCA0885	Forestville Estates Sec 2, Lot 8A	7016-INF-005-1	0.19	0.05	0.79	6/9/2020	0074 09 0008A	725 Springvale Road Geat Falls, VA 22066
NCA0889	6722 Nicholson Road	8415-INF-002-2	0.46	0.16	2.50	6/25/2020	0602 12 0006	6722 Nicholson Road, Fairfax, VA 22042
NCA0890	Reston Sec 36, Blk 2, Lot 36	22548-CON-001-2	0.05	0.06	0.66	6/29/2020	0261 11020036	12366 Lima Lane, Reston, VA 20191
NCA0893	Chesterbrook Woods Sec 2, Lot 7	6828-INF-031-3	0.37	0.12	1.05	6/24/2020	0314 05 0007	1705 Oak Lane, Mclean, VA 22101
NCA0899	First Addition Byrn Mawr Lot 4 of 36, 37, 38, 39	6132-INF-004-2	0.37	0.17	2.66	5/18/2020	0304 11 0004	6639 Byrns Place Project, McLean VA 22101
NCA0901	Ferry Landing Estates Sec 1, Lot 3	3819-INF-002-2	0.48	0.24	2.97	5/21/2020	1104 09 0003	4015 Ferry Landing Road, Alexandria, Va 22312
NCA0903	New Hope, Pt Lt 23	9892-INF-010-2	0.32	0.06	0.57	5/15/2020	0591 11 0023	8230 Robey Avenue
NCA0904	Plymouth Haven Sec 1, Blk 1, Lot 2	0080-INF-007-2	0.24	0.06	0.94	6/3/2020	1112 04010002	8724 Standish Road, Alexandria, VA 22312
NCA0906	Forest Villa, Lot 5	9272-INF-008-2	0.53	0.08	1.27	7/10/2020	0313 16 0005	1522 Forest Villa Lane, McLean, VA 22101
NCA0907	Haybla Valley Farms, Blk 6, Lot 518	6176-INF-023-2	0.35	0.09	1.41	7/22/2020	1021 07060518	7808 Frances Drive, Alexandria, VA 22306
NCA0908	Maymont Sec 2, Lot 34	6553-INF-003-4	0.28	0.15	1.43	6/23/2020	0193 22 0034	1356 Blairstone Drive, Vienna, VA 22182
NCA0910	Lewinsville Heights Sec 2, Lot 5	24859-INF-025-2	0.22	0.08	1.25	7/31/2020	0304 27 0050	1704 Bradmore Court, McLean, VA 22101
NCA0911	Knollwood, Lot 6	8415-INF-002-2	0.46	0.16	2.50	6/25/2020	0602 12 0006	6722 Nicholson Road, Fairfax, VA 22042
NCA0912	Oldewood Resub Blks D, E, Lot 16	4507-INF-005-2	0.33	0.13	2.03	6/30/2020	0492 06 0016	2461 Jackson Drive, Falls Church, VA 22043
NCA0913	Hillside Manor, Lot 2	7333-INF-020-1	0.04	0.08	1.25	8/5/2020	0304 20 0002	6808 Dean Drive, McLean ,VA 22101
NCA0915	Old Burke Lake Preserve Lot 3	8608-CON-001-1	0.11	0.09	1.42	7/9/2020	0782 26 0003	9218 Old Burke Lake Road, Burke, VA 22015
NCA0916	Clearfield, Lot 29A, Pt 28	7218-INF-004-2	0.20	0.20	2.71	6/3/2020	0714 06 0029A	5232 Clifton Street, Alexandria, VA 22312
NCA0917	Springfield Forest, Sec 2	1625-CON-002-1	0.09	0.09	1.41	6/23/2020	0902 10 0079	6614 Forsythia street, Springfield, VA 22150
NCA0921	Tiburon Sec 1, Lot 51	24999-INF-004-2	0.24	0.10	0.88	8/24/2020	0283 11 0051	9515 Percussion Way, Vienna, VA 22182
NCA0922	Franklins S Gicker Jr, Lot 2	0100-INF-002-2	0.63	0.12	1.05	8/24/2020	0214 01 0036A	6615 Malta Lane, Mclean, VA 22101
NCA0928	Ruckers Langley Sec 3 Lot 37	1521-INF-012-2	0.28	0.07	0.61	8/31/2020	0214 21 0037	1122 Ormond Court, Mclean, VA 22101
NCA0929	Ruckers Langley Sec 3 Lot 36	1521-INF-013-2	0.29	0.06	0.53	8/31/2020	0214 21 0036	1121 Ormond Court, Mclean, VA 22101
NCA0934	Arden Acres Lot 4, Block 1, Sec 2	6755-INF-002-2	0.14	0.12	3.48	9/26/2016	0814 06010004	5211 York Road, Alexandria, VA 22310
NCA0938	Beau Ridge Sec 2, Lot 14	25279-INF-003-1	0.29	0.17	1.86	9/11/2020	0193 02 0014	9604 Pembroke Place, Vienna, VA 22182
NCA0939	Pimmit Hills Sec 3, Lot 62	5134-INF-229-2	0.26	0.04	0.63	8/24/2020	0401 02 0062	1916 Leonard Road, Falls Church, VA 22043
NCA0940	Langley Hill, Lot 7	1317-INF-004-2	0.50	0.13	1.43	8/3/2020	0223 02 0007	1016 Langley Hills Drive, Mclean, VA 22101
NCA0942	Ellison Heights, Lot 15A	9178-INF-027-4	0.53	0.10	1.34	9/18/2015	0404 19G 0013	2300 Highland Terrace, Falls Church, VA 22046
NCA0943	Ellison Heights, Blk G, Lot 13	9178-INF-025-4	0.53	0.05	0.67	9/18/2015	0404 19G 0013	2300 Highland Terrace, Falls Church, VA 22046
NCA0944	Pimmit Hills Sec 65, Lot 44	5134-INF-222-2	0.24	0.09	1.41	8/5/2020	0401 13 0044	1927 Anderson Road, Falls Church, VA 22043
NCA0946	Nantucket, Lot 80	1365-INF-003-2	0.33	0.02	0.31	9/3/2020	0411 19 0080	2038 Freedom Lane, Fairfax County, VA 22043
NCA0947	Leonard, Lot 25	9219-INF-008-2	0.21	0.04	0.63	9/17/2020	0401 18 0025	2016 Kilgore Road, Falls Church, VA 22043
NCA0948	Pimmit Hills Sec 6, Lot 131	5134-INF-218-2	0.21	0.04	0.63	9/16/2020	0392 06 0131	2013 Nordlie Place, Falls Church, VA 22043
NCA0950	Huntsville, Lot R1	3172-INF-001-2	0.20	0.08	1.25	9/28/2020	0584 29 R1	4123 Hunt Road Fairfax, VA 22032
NCA0951	Colonial Acres Sec 1, Lot 13	4180-INF-008-2	0.32	0.10	1.56	9/9/2020	1102 02 0013	4009 Colonial Avenue, Alexandria, VA 22309
NCA0953	Oak Spring Village, Lot 12	2016-CON-001-1	0.10	0.06	0.94	1/30/2020	0484 06 0012	3115 Barbara Lane, Fairfax, VA 22031
NCA0958	Salone Village Sec 6 Lot 23	5253-INF-054-2	0.80	0.03	0.47	10/5/2020	0311 03 0023	1321 Darnall Drive, Mclean, VA 22101
NCA0960	Brouhill Langley Estates Sec 2 Lot 59	8622-INF-045-2	0.33	0.15	1.65	10/7/2020	0214 15 0059	1045 Carpet Street, Mclean, VA 22101
NCA0961	Madrillon Farms Lot S 39 A 39 B	7795-RGP-001-2	0.00	0.18	2.03	10/6/2020	0391 09 0039B	2024 & 2026 George Washington Road, Vienna, VA 22182
NCA0967	Pimmitt Hills Sec 6 Lot 356	5314-INF-018-1	0.33	0.10	2.53	8/29/2018	0401 03 0356	1901 Cheri Drive, Falls Church, VA 22043
NCA0969	Herbys Clermont Lot 5A	4720-INF-001-3	0.39	0.24	3.76	10/22/2020	0821 05 0005A	5715 Clermont Drive, Alexadria, VA 22310
NCA0970	Pimmit Hills Sec 6 Lot 120	5134-INF-216-2	0.24	0.11	1.21	10/21/2020	0392 06 0120	2004 Nordlie Place, Falls Church, VA 22043

NCA_ID	PLAN NAME	PLAN NUMBER	DISTURBED ACRES	PHOSPHORUS CREDITS PURCHASED	NITROGEN CREDITS PURCHASED	EFFECTIVE_DATE	PARCEL_PIN	ADDRESS
NCA0971	Chesterbrook Sec 2 Lot 105	3176-INF-007-3	0.26	0.03	0.47	9/9/2020	0411 12 0105	6325 Halsey Road, Mclean, VA 22101
NCA0972	Grafield Park Sec 3 Lot 99	9649-INF-044-1	0.23	0.22	1.63	10/19/2020	0202 14 0099	854 Centrillion Drive, Mclean, VA 22102
NCA0973	Pimmit Hills Sec 2 Blk K Lot 8	5134-INF-232-2	0.24	0.01	0.16	9/17/2020	0401 05K 0008	2040 Arch Drive, Falls Church 22043
NCA0974	Hollin Hall Village Sec 1 Lot 94A	8009-INF-047-3	0.17	0.05	1.05	3/29/2019	1022 03 0095A	8028 Washington Road Aexandria, VA
NCA0974	Hollin Hall Village Sec1 Lot 95A	8009-INF-048-3	0.17	0.02	1.20	3/29/2019	1022 03 0095A	8026 Washington Road, Alexandria, VA
NCA0976	Chesterbrook Gardens Sec 5 Lot 129	24975-INF-010-3	0.23	0.11	1.62	1/22/2019	0304 10 0129	1814 Chesterfield Place, Mclean, VA 22101
NCA0978	Kent Gardens Sec 2 Lot 18	13308-INF-008-1	0.32	0.03	0.47	10/30/2020	0402 09 0018	1910 Sawyer Place, Mclean, VA 22101
NCA0982	The Ridings at Virginia Run Lot 6	0442-CON-001-1	0.11	0.16	2.50	11/5/2020	0531 06 0006	5850 Saddle Downs Place, Centreville, VA 20120
NCA0985	Brookhaven Block 1 Lot 9	4342-INF-024-3	0.40	0.16	2.52	11/3/2020	0313 02010009	1508 Brookhaven Drive, McLean, VA 22101
NCA0989	Fort Hunt Lot 8	25475-INF-002-2	0.39	0.07	1.10	11/16/2020	1112 01 0008	8953 Fort Hunt Road, Alexandria, VA 22308
NCA0991	Chesterbrook Sec 2 Lot 105	15414-INF-027-2	0.27	0.06	0.95	11/6/2020	0313 06 0104	6327 Halsey Road, Mclean, VA 22101
NCA0993	Dewberry Park Sec 1 Lot 14	6163-INF-001-1	0.35	0.18	2.82	10/23/2020	0912 06 0014	7034 Roxann Road, Alexandria, VA 22315
NCA0995	Columbia Pines Sec 2 Blk D Lot 10	7310-INF-008-2	0.35	0.17	2.66	11/23/2020	0604 04D 0010	3721 Rose Lane, Annadale, VA 22003
NCA0997	Salona Village Sec 3 Lot 31	5253-INF-061-3	0.28	0.07	1.11	11/23/2020	0302 17 0031	1479 Waggaman Circle, Mclean, VA 22101
NCA0998	Shreve Wood Estates Lot 9	3021-CON-001-2	0.11	0.11	1.72	12/9/2020	0403 28 0009	2510 Patricia Court, Falls Church, VA 22043
NCA1000	Waples Mill Lot 12B	8725-INF-002-4	0.57	0.08	0.88	12/15/2020	0464 01 0012B	11280 Waples Mill Road, Oakton, VA 22124
NCA1001	Rosemont Sec 5 Lot 9	24881-INF-011-2	0.23	0.04	0.63	11/9/2020	0304 32 0009	6931 Tyndale Street, Mclean, VA 22101
NCA1005	Chesterbrook Woods Briggs Hooppers Sec 3 Lot 2	5406-INF-004-2	0.23	0.06	0.95	12/16/2020	0314 16 0027	1512 Crestwood Lane, Mclean, VA 22101
NCA1014	Springwood of Mclean Lot 3	7268-CON-001-2	0.10	0.08	0.70	1/4/2021	0204 17 0003	8205 Spring Hill Lane, Mclean, VA 22102
NCA1016	Ravensworth Sec 6 Block 3 Lot 39	15191-CON-001-2	0.11	0.08	1.25	1/15/2021	0792 03030039	5626 Inverchapel Road, Springfield, VA 22151
NCA1017	Brilyn Park Lot 76	24708-INF-014-2	0.23	0.06	0.94	12/21/2020	0404 05 0076	2303 Brilyn Place, Falls Church, AV 22046
NCA1018	Hunter Station	7179-INF-001-1	0.15	0.08	1.25	1/22/2021	1024 01 0051A	1500 Grassymeade Lane, Alexandria, VA 22308
NCA1019	Sycamore Ridge Sec 7 Lot 8	4494-CON-002-2	0.10	0.01	0.09	1/21/2021	0251 14070008	2481 Iron Forge Road, Herndon, VA 20171
NCA1021	Near Falls Church Lot 58	0952-INF-002-3	0.38	0.22	2.49	1/18/2021	0214 01 0060	1105 Waverly Way, Mclean, VA 22101
NCA1025	Pimmit Hills Sec 3 Lot 94	5134-INF-235-2	0.10	0.02	0.31	1/27/2021	0401 02 0094	7406 Bethune Street, Falls Church, VA 22043
NCA1027	Hillside Manor Lot 38	2908-INF-025-2	0.24	0.11	1.72	2/1/2021	0304 20 0038	1727 Melbourne Drive, Mclean, VA 22101
NCA1029	Lane on Georgetown Pike Lot 4A	7931-INF-005-2	0.45	0.07		11/4/2020	0223 08 0004A	1000 Dogue Hill Lane, Mclean, VA 22101
NCA1031	Walney Woods Lot 25	9862-CON-001-2	0.11	0.09	0.86	1/29/2021	0444 16 0025	13691 Black Spruce Way, Chantilly, VA 20151
NCA1036	Westmoreland Park Sec 1 Lot 19	2043-INF-023-2	0.23	0.05	0.78	12/31/2020	0404 06 0019	2223 Orchid Drive, Falls Church, VA 22046
NCA1037	Chapel Acres Lot 66 Sec 1	3535-CON-002-2	0.10	0.05	0.78	2/9/2021	0981 03 0066	8731 Scott Street, Springfield, VA 22153
NCA1042	Old Dominion Gardens Sec 3 Lot 52	1771-CON-001-2	0.11	0.14	1.54	2/3/2021	0301 08 0052	7204 Matthew Mills Road, Mclean, VA 22101
NCA1043	El Nido Estates Sec 2 Lot 7	13236-INF-006-2	0.29	0.06	0.94	2/15/2021	0313 11 0007	6501 Divine Street, Mclean, VA 22101
NCA1044	Pimmit Hills Sec 7 Lot 221	5134-INF-245-2	0.26	0.02	0.32	1/26/2021	0401 16 0221	1906 Hillside Drive, Falls Church, VA 22043
NCA1046	Old Creek Estates Sec 3 Lot 121	24921-INF-004-2	0.22	0.08	1.25	2/9/2021	0691 03 0121	9431 Winterberry Lane, Fairfax, VA 22032
NCA1047	Springvale Estates Lot 3	1290-CON-001-3	0.10	0.07	0.92	2/11/2021	0074 19 0003	10469 Springvale Meadow Lane, Great Falls, VA 22066
NCA1051	Hillside Manor Lot 75	2908-INF-023-3	0.30	0.10	1.56	2/15/2021	0304 20 0075	6711 Van Fleet Drive, Mclean, VA 22101
NCA1052	Southern Grove Lot 66 Sec 1	25749-CON-001-2	0.08	0.03	0.22	2/10/2021	0793 16 0066	5938 Hall Street, Springfield, VA 22152
NCA1054	Allans Fairfax Farms Lot 4	4002-INF-002-1	0.65	0.18	1.97	2/16/2021	0464 03 0004	3701 Michele Court, Oakton, VA 22124
NCA1055	Broyhills Mclean Estates Sec 2 Lot 102	0427-INF-029-3	0.23	0.05	0.55	2/23/2021	0301 12 0102	1459 Dewberry Court, Mclean, VA 22101
NCA1058	1814 Peabody Drive Lot 419 Sec 6	5134-INF-215-1	0.23	0.01		3/3/2020	0303 03 0419	1814 Peabody Drive, Falls Church, VA 22043
NCA1061	6409 Maplewood Drive	24640-INF-005-1	0.24	0.10		11/4/2014	0613 11 0053	6409 Maplewood Drive, Falls Church, VA 22041
NCA1063	Clearfield Lot 11	3254-INF-004-1	0.36	0.20	3.13	2/25/2021	0714 06 0011	6614 Edsall Road, Springfield, VA 22151
NCA1064	Evermay Sec 1 Lot 24	2342-CON-001-1	0.11	0.14	2.19	2/25/2021	0311 13 0024	6306 Long Meadow Road, Mclean, VA 22101
NCA1065	Holmes Run Heights First Add Lot 46	1259-CON-001-1	0.10	0.12	1.88	3/2/2021	0594 09 0049	3500 Delta Place, Annadale VA 22003

Single Family Residential Development < 1 Acre: Nutrient Credit Purchases (2020-2021)

NCA_ID	PLAN NAME	PLAN NUMBER	DISTURBED ACRES	PHOSPHORUS CREDITS PURCHASED	NITROGEN CREDITS PURCHASED	EFFECTIVE_DATE	PARCEL_PIN	ADDRESS
NCA1066	Mclean Manor Sec 2 Lot 22	4285-INF-039-2	0.24	0.05	0.78	3/4/2021	0304 17 0022	6813 Wise Street, Mclean, VA 22101
NCA1068	Center Park Sec 1 Lot 4	2382-CON-001-2	0.11	0.07	1.10	44260	0793 07 0004	6131 Garden Road, West Springfield, VA 22152
NCA1069	Rosemont Sec 3 Lot 11	1298-INF-019-2	0.10	0.04	0.63	3/9/2021	0304 29 0011	1603 Woodmoor Lane, Mclean, VA 22101
NCA1071	Marlboro Estates Sec 3 Lot 23	1603-INF-015-2	0.25	0.02	0.08	3/5/2021	0402 25 0023	1830 Dalmation Drive, Mclean, VA 22101
NCA1072	Lockmeade Sec 3 Lot 64	0929-INF-005-1	0.39	0.06	0.66	3/5/2021	0123 05 0064	1156 Kettle Pond Lane, Great Falls, VA 22066
NCA1073	Franklin Park Blk 6 Lot 7A	1337-INF-013-1	0.10	0.04	0.63	3/12/2021	0411 18 0007A	2029 Rhode Island Avenue, Mclean, VA 22101
NCA1075	Reddfield Lot 7	2166-INF-008-1	0.32	0.04	0.63	3/12/2021	0403 21 0007	2210 Reddfield Drive, Falls Church, VA 22043
NCA1076	Grass Ridge Sec 1 Blk 2 Lot 4	9716-INF-028-1	0.32	0.03	0.47	3/12/2021	0411 02020004	6505 Byrnes Drive, Mclean, VA 22101
NCA1077	Donovan's Ridge Lot 26	8134-CON-001-1	0.09	0.13	2.03	3/16/2021	0871 12 0026	6605 Ellies Way, Fairfax Station, VA 22039
NCA1078	UACJT Javem Estates	8278-INF-003-2	0.27	0.09	1.41	3/17/2021	1103 04D 0019	4500 Dolphin Lane, Alexandria, VA 22309
NCA1079	1674 Chain Bridge Road	24497-INF-002-1	0.40	0.22		4/13/2018	0303 01 0056F	1674 Chain Bridge Road, Mclean, VA 22101
NCA1081	Dowden Terrace Blk 10 Lot 54 Pool Addition	0342-INF-005-2	0.18	0.21	3.29	3/18/2021	0614 10100054	5611 Dawes Avenue, Alexandria, VA 22311
NCA1082	Boulevard Acres Lot 32	3607-INF-006-3	0.34	0.15	2.35	3/22/2021	1024 08 0032	1200 Cedar Dale Lane, Alexandria, VA 22308
NCA1085	Hammer Park Sec 2 Lot 1	5354-CON-001-2	0.11	0.09	1.41	3/22/2021	0614 01 0121A	5726 Clarence Avenue, Alexandria, VA 22311
NCA1086	Westmoreland Park Sec 1 Lot 24	2043-INF-022-3	0.19	0.02	0.32	3/19/2021	0404 06 0024	2213 Orchid Drive, Falls Church, VA 22046
NCA1087	Foxmeadow Lot 12	8731-CON-001-1	0.11	0.09	1.41	3/16/2021	0551 17 0012	5229 Fernbrook Drive, Centreville, VA 20120
NCA1088	Pimmit View Sec 2 Lot 21	1484-INF-009-2	0.18	0.05	0.78	3/24/2021	0303 08 0021	7400 Storm Court, Falls Church, VA 22043
NCA1089	The Ridings at Virginia Run Lot 6	0442-CON-001-1	0.11	0.02	0.31	3/19/2021	0531 06 0006	5850 Saddle Downs Place, Centreville, VA 20120
NCA1091	Hichory Vale Farm Lot 10	6422-CON-002-1	0.11	0.12	1.53	3/26/2021	0122 15 0010	794 Stephanie Circle, Great Falls, VA 22066
NCA1093	Pimmit Hills Sec 1 Blk F Lot 6	5134-INF-247-3	0.21	0.05	0.79	2/9/2021	0401 06F 0006	2044 Pimmit Drive, Falls Church, VA 22043
NCA1095	Polar Heights Sec 6 Lot 117	2479-INF-007-2	0.19	0.05		12/6/2019	0501 02 0117	7422 Allan Avenue, Falls Church, VA 22046
NCA1096	Riley Ridge Lot 4	3433-INF-005-1	0.60	0.08		12/20/2018	0112 04 0004	11494 White Oak Court, Herndon, VA 20170
NCA1097	Oak Spring Village, Lot 12	5154-CON-001-3	0.11	0.06		11/15/2019	0484 06 0012	3115 Barbara Lane, Fairfax, VA 22031
NCA1100	Pimmit Hills Sec 6 Lot 387	5134-INF-250-3	0.25	0.05	0.79	3/2/2021	0401 03 0387	7504 Fisher Drive, Falls Chruch, VA 22043
NCA1101	West Staffor Landing Lot 11A	5966-INF-002-1	0.29	0.06	0.94	3/29/2021	0492 23 0011A	2707 Westford Court, Falls Church, VA 22043
NCA1102	Timberly South Sec 1 Lot 5	1962-CON-002-1	0.11	0.06	0.66	4/6/2021	0292 12 0005	1326 Timberly Lane, Mclean, VA 22101
NCA1103	Pleasant Hill Sec 4 Lot 65	0660-CON-001-1	0.11	0.10	1.56	4/30/2021	0531 03040065	6205 Piont Circle, Centreville, VA 20120
NCA1105	Woodland Park Lot 43	4656-INF-001-8	0.28	0.16	2.50	4/9/2021	1014 12 0043	3130 Woodland Lane, Alexandria, VA 22309
NCA1106	Boulevard Acres Lot 2	23691-INF-003-3	0.73	0.29	1.98	4/13/2021	1024 08 0002C1	1120 Cedar Dale Lane, Alexandria, VA 22308
NCA1107	Brookhaven Block 3 Lot 2	4342-INF-025-2	0.40	0.05	0.78	3/5/2021	0313 02030002	1509 Brookhaven Drive, Mclean, VA 22101
NCA1108	Stoney Creek Lot 1	7203-CON-002-1	0.11	0.07	1.10	1/14/2021	0871 16 0001	10720 Ox Croft Court, Fairfax, VA 22039
NCA1113	Addition Plymouth Haven Sec 1 Blk 2 Lot 8	3959-INF-017-2	0.81	0.41	5.57	3/25/2021	1112 04020007	0111 02 04 02 0008 & 0111 02 04 02 0009
NCA1114	Memorial Heights Blk H Lot 323 Lot 324	9605-INF-019-1	0.26	0.15	2.35	3/16/2021	0931 18H 0322A	2605 Groveton Street, Alexandria, VA 22306
NCA1115	Memorial Heights Blk H Lot 322A	9605-INF-018-1	0.33	0.15	2.35	3/16/2021	0931 18H 0322A	2605 Groveton Street, Alexandria, VA 22306
NCA1116	Wolftrap Woods Sec 2 Lot 156	0984-CON-001-1	0.09	0.05	0.62	4/16/2021	0282 06 0156	1416 Wolftrap Run Road, Vienna, VA 22182
NCA1122	Forestville Lot 58	2877-INF-003-2	0.45	0.16		3/3/2021	0074 01 0058	702 Walker Road, Great Falls, VA 22066
NCA1123	Hillwood Sec 2 Lot 106	6402-INF-020-2	0.25	0.19	2.97	2/5/2021	0513 02 0106	6418 South Street, Falls Church, VA 22042
NCA1124	Putnam Farm Estates Lot 5	0903-INF-001-1	0.20	0.16	2.15	4/22/2021	0121 20 0005	1038 Aziza Court, Great Falls, VA 22066
NCA1126	Falcon Ridge Sec 3 Lot 52	1262-INF-018-3	0.38	0.18	2.38	4/26/2021	0034 06020051	74 Windy Hollow Court, Great Falls, VA 22066
NCA1127	Mclean Manor Sec 3 Lot 136	7986-INF-005-1	0.22	0.06	0.94	4/28/2021	0304 17 0136	6711 Danforth Street, Mclean, VA 22101
NCA1128	West Grass Ridge Sec 2 Block 4 Lot 3	24695-INF-004-1	0.37	0.15	2.35	4/28/2021	0304 28040003	1627 Wrightson Drive, Mclean, VA 22101
NCA1129	Collingwood On Potomax L2A B11 S1	26011-INF-002-2	0.26	0.08	1.25	5/4/2021	1024 06110002A	8307 West Boulevard Drive, Alexandria, VA 22308
NCA1130	Mclean Manor Sec 3 Lot 122	7986-INF-004-3	0.23	0.07	1.10	5/5/2021	0304 17 0122	6810 Old Chesterbrook Road, Mclean, VA 22101
NCA1131	Annandale Oaks Korfontas Addition Lot 3	5331-CON-002-1	0.11	0.10	1.56	5/5/2021	0603 52 0003	4020 Annandale Road, Annandale, VA 22003

Single Family Residential Development < 1 Acre: Nutrient Credit Purchases (2020-2021)

NCA_ID	PLAN NAME	PLAN NUMBER	DISTURBED ACRES	PHOSPHORUS CREDITS PURCHASED	NITROGEN CREDITS PURCHASED	EFFECTIVE_DATE	PARCEL_PIN	ADDRESS
NCA1132	Pimmit Hills Sec 6 Lot 194	25592-INF-007-1	0.21	0.05	1.41	5/6/2021	0401 03 0194	7443 Fisher Drive, Falls Church, VA 22043
NCA1134	Sturbridge Lot 16	5514-INF-002-1	0.17	0.08	1.06	4/30/2021	0213 15 0016	1042 Balls Hill, Mclean, VA 22101
NCA1135	Crimmins Subdivision Lot 4	4294-INF-001-1	0.14	0.13	0.89	5/10/2021	0411 34 0004	2137 Crimmins Lane, Falls Church, VA 22043
NCA1136	Cedar Chase Lot 34	9992-CON-001-1	0.09	0.11	1.45	4/15/2021	0064 17 0034	11617 Cedar Chase Road, Herndon, VA 20170
NCA1138	Dunn Loring Gardens Lot 1A	2440-INF-016-2	0.10	0.03	0.47	4/22/2021	0394 03 0001A	8111 Idylwood Road, Vienna, VA 22027
NCA1139	West Lewinsville Heights Sec 4 Lot 13	15585-INF-002-2	0.25	0.02	0.32	3/29/2021	0303 14 0013	1728 Great Falls Street, Mclean, VA 22101
		Total Credits Purchased		**13.11**	**174.49**			

Septic Conversions from July 1, 2020 to June 30, 2021 (or previously unreported)
List includes parcels that intersect the FY21 MS4 Service Area

PIN	Street Name	Street Type	Address Number	Status Change	Type (Residential or Commercial)
0584 04 0001	JOYCE	ST	9113	6/17/2021	R
0214 01 0025	MALTA	LN	6618	5/7/2021	R
0602 33 0001a	SLEEPY HOLLOW	RD	3435	6/25/2021	C

Reduction from Residential Septic Conversions:

TN Edge of Stream Loading (lbs/year/person):	3.5	updated per GM20-2003
Average number of people per household for Fairfax County (2010 Census):	2.8	
Number of residential conversions:	2	

Residential TN reduction (lbs/year) = 19.60

Formula from DEQ for Household Septic Conversion

Average HH (2010)	TN Per Year Per Person	TN Reduction Per HH Per Year	Conversions	Total TN Reduced (Lbs/Year)
2.80	3.50	9.80	1.00	9.80

Determining TN Per Gallon Based on DEQ Household Formula and Table 5.1 "Sewage Flows" from 12VAC5-610-670
Table 5.1 Provides Dwelling Per Person Total Flow of 75 GPD

Average HH (2010)	Flow Per Person Per Year (Gal)	Flow Per HH Per Year (Gal)	Conversions	Total Flow Reduced (Gal/Year)
2.80	27375.00	76650.00	1.00	76650.00

Total TN Reduced Per Gallon = Total TN Reduced / Total Flow Reduced:		**0.000128**

Commercial Facility Calculations (July 1, 2020 June 30, 2021)

Unless otherwise noted, commercial flow is the maximum design flow provided by VDH divided by 1.6667 to arrive at an average flow. This factor is based on that applied by Fairfax County to average household flow to arrive at the design flow.

Facility	Use	Design Unit	Flow Per Day (Gal)	Flow Per Year	TN Reduced Per Gallon	Total TN Reduced (Lbs/Year)
Sleepy Hollow United Methodist Church	Church	Per Day (Note that max. design flow per VDH is 367 gal/day. Since primary use is once a week, this figure is divided by seven for a conservative daily estimate. Approach approved by Kelsey Brooks at DEQ by email on 9/28/2016.)	52.43	19136.95	0.000128	2.45

Total TN Reduced for Commercial Facility Conversions	**2.45**

Total TN Reduced for Residential and Commercial Facility Conversions (FY21)	**22.05**

Land Use Changes July 1, 2020 - June 30, 2021

Updated: 8/27/2021

Projects in Addition to Those Reported in the Chesapeake Bay TMDL Action Plan Completed July 1, 2020 to June 30, 2021 (or previously unreported)

Project Name	Substantial Completion	Longitude	Latitude	Pollutant Reduction Calculation Method	Land Use From	Conversion	Area Converted (SF)	Estimated Cost ($)	Estimated Amount of Pollutant Reduction from Land Use Change (lb/yr)			Total Drainage Area (Ac)	Impervious Drainage Area (Ac)	Pervious Drainage Area (Ac)	Estimated Pollutant Reduction from Forest Buffer (lb/yr)			Estimated Amount of Total Pollutant Reduction (lb/yr)		
									TN	TP	TSS				TN	TP	TSS	TN	TP	TSS
Construction Complete																				
Herrity Concrete Fountain Replacement	1/29/2021	-77.362500	38.856500	Land Use Change	Impervious	Pervious	6,970		1.08	0.23	179.06	-	-	-	-	-	-	1.08	0.23	179.06
						Total:	**6,970**	**$ -**	**1.08**	**0.23**	**179.06**	**0**	**0**	**0**	**0**	**0**	**0**	**1.08**	**0.23**	**179.06**

Redevelopment July 1, 2020 - June 30, 2021

Updated: 8/27/2021

Redevelopment and Oversized Facility Credit (all pollutant loads in lb/yr)
Projects identified in the July 1, 2020 to June 30, 2021 reporting period (on parcels intersecting 2021 MS4)
Calculation process based on Appendix V.E of Guidance Memo 20-2003

Data collected from VRRM spreadsheets on plans

				TN Reductions, Example V.E.1, Step 3							Determine Proportions of TP Reductions Applied to TMDL, Example V.E.1, Step 1				TN Credit towards TMDL Reductions, Example V.E.1, Step 4			TSS Reductions, Example V.E.1, Steps 2 & 3			TSS Credit towards TMDL Reductions, Example V.E.1, Step 4		
Plan Number	Plan TP Redevelopment Reduction Required	Plan TP Total Reduction Required	Plan TP Total Reduction Achieved	Plan TN Total Reduction Achieved	BMP Clearinghouse Facility Name	Untreated Phosphorus Load to Practice (Impervious)	Untreated Phosphorus Load to Practice (Turf)	Facility Impervious Drainage Area (acres)	Facility Turf Drainage Area (acres)	Facility Drainage Area (acres)	Phosphorus Load to Practice	Plan Oversized Facility TP Credit[a]	Total TP Credit[b]	Redevelopment Percentage of Required Reductions[c]	TP Percentage Oversized[d]	Plan Oversized Facility TN Credit[e]	Plan Redevelopment TN Credit[f]	Total TN Credit[b]	Adjusted Facility Treated Depth	TSS Removal Efficiency	Facility TSS Reduction[g]	Plan Oversized Facility TSS Credit[e]	Plan Redevelopment TSS Credit[f]	Total TSS Credit[b]
3057-MSP-05-2	0.1	0.5	0.83	6.04	6.b. Bioretention #2 (Spec #9)	0.59	0.33	0.38	0.21	0.59	0.92	0.33	0.43	20.00%	39.76%	2.40	0.73	3.13	1.94	83%	360.16	143.20	43.39	186.59
1383-MSP-01-3	0.23	3.97	3.97	28.4	2.g. To Rain Garden #2 (Micro-Bioretention #2) (Spec #9)	0	0.21	0.00	0.36	0.36	0.21	-	0.23	5.79%	0.00%	0.00	1.65	1.65	1.25	55%	54.19	0.00	100.09	100.09
					3.b. Permeable Pavement #2 (Spec #7)	4.65	0	2.15	0.00	2.15	4.65								1.10	77%	1,673.37			0.00
1383-MSP-02-3	0.06	1.83	1.78	12.71	3.b. Permeable Pavement #2 (Spec #7)	2.19	0	1.01	0.00	1.01	2.19	-	0.06	3.28%	0.00%	0.00	0.42	0.42	1.10	77%	788.10	0.00	25.84	25.84
6537-MSP-03-1	0.01	0.26	0.18	1.27	3.a. Permeable Pavement #1 (Spec #7)	0.3	0	0.14	0.00	0.14	0.30	-	0.01	3.85%	0.00%	0.00	0.05	0.05	1.00	75%	105.41	0.00	4.05	4.05
13036-MSP-02-2	0.05	0.56	0.31	2.72	StormTech® Isolator Row™, StormTech -A Division of Advanced Drainage Systems, Inc.	0.59	0.18	0.33	0.10	0.43	0.77	-	0.05	8.93%	0.00%	0.00	0.24	0.24	0.65	64%	231.00	0.00	20.62	20.62
1736-MSP-05-3	0.08	0.36	0.19	1.36	3.a. Permeable Pavement #1 (Spec #7)	0.32	0	0.15	0.00	0.15	0.32	-	0.08	22.22%	0.00%	0.00	0.30	0.30	1.00	75%	112.44	0.00	24.99	24.99
8444-MSP-01-2	0.03	2.46	1.07	9.23	StormTech® Isolator Row™, StormTech -A Division of Advanced Drainage Systems, Inc.	2.15	0.52	1.16	0.28	1.44	2.67	-	0.03	1.22%	0.00%	0.00	0.11	0.11	0.62	62%	782.79	0.00	9.55	9.55
9565-MSP-02-2	1.23	2.53	3.87	31.36	BayFilter™ Stormwater Cartridge System, Baysaver Technologies LLC	4.11	3.63	2.93	2.58	5.51	7.74	1.34	2.57	48.62%	34.63%	10.86	9.97	20.83	0.94	74%	2,672.15	925.24	849.29	1,774.53
1303-SP-03-2	0.03	0.31	0.13	0.87	Filterra Bioretention Systems, Contech Engineered Solutions LLC	0.2	0.05	0.11	0.03	0.14	0.25	-	0.03	9.68%	0.00%	0.00	0.08	0.08	0.64	63%	74.18	0.00	7.18	7.18
5134-INF-172-2	0.02	0.09	0.12	0.84	7.b. Infiltration #2 (Spec #8)	0.11	0.01	0.06	0.01	0.07	0.12	0.03	0.05	22.22%	25.00%	0.21	0.14	0.35	1.28	95%	53.49	13.37	8.91	22.29
5314-INF-18-1	0.02	0.15	0.05	0.3	7.a. Infiltration #1 (Spec #8)	0.042	0.028	0.03	0.02	0.05	0.07	-	0.02	13.33%	0.00%	0.00	0.04	0.04	1.67	95%	31.20	0.00	4.16	4.16
8009-INF-47-3	0.01	0.08	0.03	0.25	2.i. To Stormwater Planter (Urban Bioretention) (Spec #9, Appendix A)	0.012	0	0.01	0.00	0.01	0.01	-	0.01	12.50%	0.00%	0.00	0.03	0.03	1.00	55%	3.10	0.00	1.61	1.61
					2.i. To Stormwater Planter (Urban Bioretention) (Spec #9, Appendix A)	0.038	0	0.02	0.00	0.02	0.04								1.00	55%	9.81			
24580-INF-05-2	0.04	0.13	0.05	0.4	2.i. To Stormwater Planter (Urban Bioretention) (Spec #9, Appendix A)	0.0225	0	0.01	0.00	0.01	0.02	-	0.04	30.77%	0.00%	0.00	0.12	0.12	1.00	55%	5.81	0.00	7.15	7.15
					2.i. To Stormwater Planter (Urban Bioretention) (Spec #9, Appendix A)	0.0675	0	0.03	0.00	0.03	0.07								1.00	55%	17.42			0.00
25769-INF-03-2	0.03	0.08	0.04	0.3	2.i. To Stormwater Planter (Urban Bioretention) (Spec #9, Appendix A)	0.06	0	0.03	0.00	0.03	0.06	-	0.03	37.50%	0.00%	0.00	0.11	0.11	1.00	55%	15.48	0.00	5.81	5.81
5134-INF-194-2	0.02	0.09	0.02	0.21	2.i. To Stormwater Planter (Urban Bioretention) (Spec #9, Appendix A)	0.05	0	0.02	0.00	0.02	0.05	-	0.02	22.22%	0.00%	0.00	0.05	0.05	1.00	55%	12.90	0.00	2.87	2.87
9525-RGP-01-2	0.06	0.08	0.1	0.73	7.b. Infiltration #2 (Spec #8)	0.11	0	0.04	0.04	0.08	0.11	0.02	0.08	75.00%	20.00%	0.15	0.44	0.58	2.04	95%	49.03	9.81	29.42	39.23
17419-MSP-02-2	0.01	0.01	0.06	0.41	7.a. Infiltration #1 (Spec #8)	0.034	0.066	0.03	0.06	0.09	0.10	0.05	0.06	100.00%	83.33%	0.34	0.07	0.41	2.50	95%	44.57	37.15	7.43	44.57
1601-MSP-04-2	0.02	0.16	0.04	0.34	StormTech® Isolator Row™, StormTech -A Division of Advanced Drainage Systems, Inc.	0.11	0	0.05	0.00	0.05	0.11	-	0.02	12.50%	0.00%	0.00	0.04	0.04	0.50	56%	28.77	0.00	3.60	3.60
1996-INF-26-2	0.01	0.06	0.08	0.67	2.i. To Stormwater Planter (Urban Bioretention) (Spec #9, Appendix A)	0.02	0	0.01	0.00	0.01	0.02	0.02	0.03	16.67%	25.00%	0.17	0.08	0.25	1.00	55%	5.16	9.68	4.84	14.52
					2.i. To Stormwater Planter (Urban Bioretention) (Spec #9, Appendix A)	0.04	0	0.02	0.00	0.02	0.04								1.00	55%	10.32			
					2.i. To Stormwater Planter (Urban Bioretention) (Spec #9, Appendix A)	0.09	0	0.04	0.00	0.04	0.09								1.00	55%	23.23			
4829-SP-01-2	0.67	1.58	1.89	13.4	7.b. Infiltration #2 (Spec #8)	1.13	0.92	0.78	0.63	1.41	2.05	0.31	0.98	42.41%	16.40%	2.20	4.75	6.95	1.99	95%	913.77	149.88	323.93	473.81
5544-MSP-02-5	0.04	0.04	0.04	0.33	2.f. To Rain Garden #1 (Micro-Bioretention #1) (Spec #9)	0.088	0	0.04	0.00	0.04	0.09	-	0.04	100.00%	0.00%	0.00	0.33	0.33	1.00	55%	22.71	0.00	56.77	56.77
					2.f. To Rain Garden #1 (Micro-Bioretention #1) (Spec #9)	0.066	0	0.03	0.00	0.03	0.07								1.00	55%	17.03			
					2.f. To Rain Garden #1 (Micro-Bioretention #1) (Spec #9)	0.066	0	0.03	0.00	0.03	0.07								1.00	55%	17.03			
9180-SP-02-2	0	0	1.26	11.58	StormTech® Isolator Row™, StormTech -A Division of Advanced Drainage Systems, Inc.	2.18	0.96	1.30	0.57	1.87	3.14	1.26	1.26	0.00%	100.00%	11.58	0.00	11.58	0.72	67%	984.12	984.12	0.00	984.12
5134-INF-206-2	0.02	0.07	0.08	0.65	2.i. To Stormwater Planter (Urban Bioretention) (Spec #9, Appendix A)	0.04	0	0.02	0.00	0.02	0.04	0.01	0.03	28.57%	12.50%	0.08	0.16	0.24	1.00	55%	10.32	4.52	9.03	13.55
					2.i. To Stormwater Planter (Urban Bioretention) (Spec #9, Appendix A)	0.1	0	0.05	0.00	0.05	0.10								1.00	55%	25.81			0.00
57770-INF-35-2	0.03	0.08	0.06	0.5	2.i. To Stormwater Planter (Urban Bioretention) (Spec #9, Appendix A)	0.045	0	0.02	0.00	0.02	0.05	-	0.03	37.50%	0.00%	0.00	0.19	0.19	1.00	55%	11.61	0.00	10.64	10.64
					2.i. To Stormwater Planter (Urban Bioretention) (Spec #9, Appendix A)	0.065	0	0.03	0.00	0.03	0.07								1.00	55%	16.77			0.00
13041-INF-23-2	0.02	0.07	0.04	0.3	2.f. To Rain Garden #1 (Micro-Bioretention #1) (Spec #9)	0.0199	0	0.01	0.00	0.01	0.02	-	0.02	28.57%	0.00%	0.00	0.09	0.09	1.00	55%	5.14	0.00	4.42	4.42
					2.f. To Rain Garden #1 (Micro-Bioretention #1) (Spec #9)	0.0401	0	0.02	0.00	0.02	0.04								1.00	55%	10.35			0.00
0640-SP-04-2	0.43	1.49	1.27	4.21	BayFilter™ Stormwater Cartridge System, Baysaver Technologies LLC	0.55	0.49	0.65	0.57	1.22	1.04	-	0.43	28.86%	0.00%	0.00	3.30	3.30	0.94	74%	358.84	0.00	283.53	283.53

Redevelopment July 1, 2020 - June 30, 2021

Updated: 8/27/2021

				TN Reductions, Example V.E.1, Step 3							Determine Proportions of TP Reductions Applied to TMDL, Example V.E.1, Step 1				TN Credit towards TMDL Reductions, Example V.E.1, Step 4			TSS Reductions, Example V.E.1, Steps 2 & 3			TSS Credit towards TMDL Reductions, Example V.E.1, Step 4		
Plan Number	Plan TP Redevelopment Reduction Required	Plan TP Total Reduction Required	Plan TP Total Reduction Achieved	Plan TN Total Reduction Achieved	BMP Clearinghouse Facility Name	Untreated Phosphorus Load to Practice (Impervious)	Untreated Phosphorus Load to Practice (Turf)	Facility Impervious Drainage Area (acres)	Facility Turf Drainage Area (acres)	Facility Drainage Area (acres)	Phosphorus Load to Practice	Plan Oversized Facility TP Credit[a]	Total TP Credit[b]	Redevelopment Percentage of Required Reductions[c]	TP Percentage Oversized[d]	Plan Oversized Facility TN Credit[e]	Plan Redevelopment TN Credit[f]	Total TN Credit[b]	Adjusted Facility Treated Depth	TSS Removal Efficiency	Facility TSS Reduction[g]	Plan Oversized Facility TSS Credit[e]	Plan Redevelopment TSS Credit[f]	Total TSS Credit[b]
				6.8	StormTech® Isolator Row™, StormTech -A Division of Advanced Drainage Systems, Inc.	0.9	0.78	0.65	0.57	1.22	1.68								0.94	74%	579.67			
				0.43	5.a. Dry Swale #1 (Spec #10)	0.05	0.06	0.04	0.05	0.09	0.11								2.25	85%	43.97			
													Total TP Credit	**6.64**				**Total TN Credit**	**51.47**					**Total TSS Credit**	**4,126.09**

[a] TP Reduction Achieved - TP Reduction Required
[b] Oversized + Redevelopment Credit
[c] Redevelopment TP Required/ Total Required TP Reduction
[d] Oversized Facility TP Credit/TP Credit Achieved
[e] Reduction Achieved x Oversized Percentage
[f] Reduction achieved - oversized reduction) x redevelopment percentage
[g] Phosphorus Load to Practice * 469.2 * TSS Removal Efficiency

Fairfax County 2021 MS4 Program Plan and Annual Report

Appendix R17

TMDL Action Plan Implementation Updates Other Than Chesapeake Bay

VSMP Permit Number VA0088587
9-30-2021

Appendix R17 - Local TMDL Action Plan Implementation FY2021

Benthic TMDL Action Plan

The Benthic TMDL Action Plan includes Stream Restoration Projects and Stormwater Retrofit Projects. The County has implemented all projects proposed in the Action Plan.

The County continues to implement projects within the affected watersheds in addition to those listed in the Benthic TMDL Action Plan. These are also listed in the updated TMDL Action Plan tables.

The status of other implementation items from the Benthic TMDL Action Plan are summarized below:

Implementation Item	Description	Implementation Status
MS4 Program Plan	The County will continue to implement the MS4 Program Plan, including elements related to sediment, in accordance with the schedule provided for in the MS4 Program Plan.	The County continues to implement its MS4 Program Plan.
Chesapeake Bay TMDL Action Plan	The County will continue to leverage the projects selected to meet the Chesapeake Bay TMDL Action Plan to reduce sediment in the benthic TMDL watersheds. The County's project selection SOP includes a prioritization criteria for local TMDLs.	The County continues to implement the Chesapeake Bay TMDL Action Plan.
County Owned or Operated Property	The County will consider retrofits to County owned or operated property during the development of its annual list of potential projects. Projects may be drawn from the watershed management plans, assessment of County owned or operated property, or other sources as appropriate.	The project identification and assessment process occurs annually in accordance with the County's Stormwater Planning Project Selection SOP. Projects on County property currently in construction: • Manufactured Treatment Devices at the Sully Community Center in the Cub Run watershed • Accotink Creek stream restoration at Wakefield Park
Watershed-Specific Project Implementation	The County will implement at least one project in each of the TMDL watersheds from the summary of potential projects contained in Appendix P2 of the County's 2016	Bull Run: The County has completed the Flatlick Phase I project from Appendix P2. Difficult Run: The County has completed the Penderbrook

Implementation Item	Description	Implementation Status
	MS4 Program Plan and Annual Report.	constructed wetland project from Appendix P2. Popes Head Creek: The County has completed the Innisvale Drive outfall restoration project. This project was identified after creation of the potential project list.
Enhanced Education, Outreach, and Training	The County will continue to implement enhanced education, outreach, and training for sediment in accordance with the MS4 permit and the MS4 Program Plan.	The County is implementing its enhanced education, outreach and training for sediment in accordance with the MS4 Program Plan.

Bacteria TMDL Action Plan

The status of implementation items from the Bacteria TMDL Action Plan are summarized below:

Implementation Item	Description	Implementation Status
Dog Park Site Assessment	Conduct a walk-through of the dog parks at Baron Cameron and Mason District parks to assess the effectiveness of implemented pet waste management strategies.	The dog parks were assessed on June 1, 2018. The dog parks had few isolated pet waste deposits, indicating that most pet owners were cleaning up after their pet. The parks were well-signed with respect to pet waste disposal. FCPA and County staff are cooperating on potential improvements to the dog park sites.
Educational inserts in dog license renewal mailers	Include educational inserts about proper disposal of pet waste in dog license renewal mailers.	The insert has been prepared and is sent annually with the dog license renewals in November.

PCB TMDL Action Plan

The status of implementation items from the PCB TMDL Action Plan are summarized below:

Implementation Item	Description	Implementation Status
IHRR facility identification modification	The process of identifying IHRR facilities for inspection will be modified in PY3 to include SIC codes from Virginia DEQ's 2016 document titled "The Relationship between Polychlorinated Biphenyls (PCBs), VPDES Wastewater/Stormwater Facilities, Stormwater Industrial General Permitted Facilities (ISWGPs), and the Standard Industrial Classification System (SIC)".	The County updates its IHRR list as new data becomes available, which includes consideration of facilities in the county MS4 associated with these SIC codes in accordance with its modified standard operating procedures. The County is working with regional partners to create and distribute educational materials encouraging proper disposal of materials that may contain PCBs.
Enhanced training on recognition and reporting of illicit discharges by field personnel	Existing training material will be revised in PY3 to include information relevant to PCB discharges. The training will be implemented in PY4 as part of the ongoing biennial training program.	The on-line Employee University training material was revised to include information related to PCB discharges. The training materials were provided in the 2018 annual report.
Enhanced training on good housekeeping and pollution prevention practices	Training materials will be revised in PY3 to include information relevant to potential PCB sources and steps to take if a source of PCBs is discovered at a county property. The training will be implemented in PY4 as part of the ongoing biennial training program.	The on-line Employee University training material was revised to include information related to PCB discharges. The training materials were provided in the 2018 annual report.

Fairfax County Sediment TMDL Tracking Ledger

Bull Run Stream Restoration	TSS lbs/year	
Constructed	2,598,218.67	
Bull Run		
Cub Run	2,422,839.72	
Johnny Moore Creek		
Little Rocky Run		
Popes Head Creek	175,378.95	
Under Construction	0	
Bull Run		
Cub Run	-	
Johnny Moore Creek		
Little Rocky Run		
Popes Head Creek		
Total	2,598,218.67	Credit Sharing
Fairfax	2,598,218.67	100.0%
Herndon	-	0.0%
Vienna	-	0.0%

Bull Run Structural Retrofits	TSS lbs/year	
Constructed	237,231.98	
Bull Run	18,484.11	
Cub Run	164,082.44	
Johnny Moore Creek		
Little Rocky Run	11,629.62	
Popes Head Creek	43,035.81	
Under Construction	-	
Bull Run	-	
Cub Run	-	
Johnny Moore Creek		
Little Rocky Run		
Popes Head Creek	-	
Total	237,231.98	Credit Sharing
Fairfax	237,231.98	100.0%
Herndon	-	0.0%
Vienna	-	0.0%

Bull Run Land Use Change	TSS lbs/year	
Constructed	1,158.78	
Bull Run		
Cub Run	1,158.78	
Johnny Moore Creek		
Little Rocky Run		
Popes Head Creek		
Under Construction	-	
Bull Run		
Cub Run		
Johnny Moore Creek		
Little Rocky Run		
Popes Head Creek		
Total	1,158.78	
Fairfax	1,158.78	No Credit
Herndon	-	Sharing
Vienna	-	

Bull Run Total	TSS lbs/year	
Constructed	2,836,609.43	
Bull Run	18,484.11	
Cub Run	2,588,080.94	
Johnny Moore Creek	-	
Little Rocky Run	11,629.62	
Popes Head Creek	218,414.76	
Under Construction	-	
Bull Run	-	
Cub Run	-	
Johnny Moore Creek	-	
Little Rocky Run	-	
Popes Head Creek	-	
Total	2,836,609.43	Credit Sharing
Fairfax	2,836,609.43	100.0%
Herndon	-	0.0%
Vienna	-	0.0%

Difficult Run Stream Restoration	TSS lbs/year	
Constructed	6,751,568.18	
Under Construction	-	
Total	6,751,568.18	Credit Sharing
Fairfax	5,765,839.23	85.4%
Herndon	-	0.0%
Vienna	985,728.95	14.6%

Difficult Run Structural Retrofits	TSS lbs/year	
Constructed	163,996.26	
Under Construction	-	
Total	163,996.26	Credit Sharing
Fairfax	140,052.81	85.4%
Herndon	-	0.0%
Vienna	23,943.45	14.6%

Difficult Run Land Use Change	TSS lbs/year	
Constructed	179.06	
Under Construction	-	
Total	179.06	
Fairfax	179.06	No Credit
Herndon	-	Sharing
Vienna	-	

Difficult Run Total	TSS lbs/year	
Constructed	6,915,564.45	
Under Construction	-	
Total	6,915,743.51	Credit Sharing
Fairfax	5,906,071.11	85.4%
Herndon	-	0.0%
Vienna	1,009,672.40	14.6%

Popes Head Creek Stream Restoration	TSS lbs/year	
Constructed	175,378.95	
Under Construction	0	
Total	175,378.95	Credit Sharing
Fairfax	175,378.95	100.0%
Herndon	0.00	0.0%
Vienna	0.00	0.0%

Popes Head Creek Structural Retrofits	TSS lbs/year	
Constructed	43,035.81	
Under Construction	-	
Total	43,035.81	Credit Sharing
Fairfax	43,035.81	100.0%
Herndon	-	0.0%
Vienna	-	0.0%

Popes Head Creek Total	TSS lbs/year	
Constructed	218,414.76	
Under Construction	-	
Total	218,414.76	Credit Sharing
Fairfax	218,414.76	100.0%
Herndon	-	0.0%
Vienna	-	0.0%

NOTES
Popes Head Creek projects are included in both the Bull Run TMDL and Popes Head Creek TMDL since the TMDLs overlap.

Stream Restoration

PRJ_ID	#	Project Name	Substantial Completion	Longitude	Latitude	Type of Project or BMP	Acres Treated (Ac)	Impervious Acres Treated (Ac)	Pervious Acres Treated (Ac)	Estimated Cost ($)	Restored Length (LF)	Estimated Amount of TSS Reduction (lbs/yr)		Pollutant Reduction Calculation Method	Watershed
												With Sediment Delivery Ratio	Without Sediment Delivery Ratio*		
Benthic Action Plan Project Completion Status - Stream Restoration															
CU9206	2	Big Rocky Tributary	5/26/2010	-77.441575	38.849032	Urban Stream Restoration	99.95	29.21	70.74	$191,600	336	7,307.04	40,370.40	CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 336 LF, Average Stream Bank Height: 4.5 ft, Sediment Delivery Ratio: 0.181; Protocol 2 - Average Stream Bank Width: 6.4 ft	Cub Run
CU9211A	4	Flatlick Confluence Stream Restoration	5/18/2011	-77.477458	38.862985	Urban Stream Restoration	5,016.42	1,938.97	3,077.45	$633,530	1400	62,832.00	347,138.12	CBP Urban Stream Restoration Interim Approved Removal Rates; Sediment Delivery Ratio:0.181	Cub Run
CU9218A	5	Schneider Branch Stream Restoration	5/31/2011	-77.467084	38.893042	Urban Stream Restoration	1,022.20	627.48	394.72	$631,100	1000	9,037.15	49,929.00	CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 1000 LF, Average Stream Bank Height: 1.87 ft, Sediment Delivery Ratio: 0.181; Protocol 2 - Average Stream Bank Width: 10 ft	Cub Run
DF9143C46	8	Government Center Stormwater Retrofit	6/29/2012	-77.353374	38.854106	Urban Stream Restoration	148.14	74.73	73.41	$275,000	1000	22,713.69	125,490.00	CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 1000 LF, Average Stream Bank Height: 4.7 ft, Sediment Delivery Ratio: 0.181	Difficult Run
DF82-0015	14	Wolftrap Creek	10/19/2013	-77.250652	38.902473	Urban Stream Restoration	755.57	350.97	404.60	$1,749,434	2089	31,296.08	172,906.52	CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 2089 LF, Average Stream Bank Height: 3.1 ft, Sediment Delivery Ratio: 0.181	Difficult Run
CU9207	20	Big Rocky Run Phase II	6/25/2014	-77.438891	38.848568	Urban Stream Restoration	4,400.40	1,809.78	2,590.63	$2,457,798	2550	73,191.24	404,371.49	CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 2330 LF, Average Stream Bank Height: 6.5 ft, Sediment Delivery Ratio: 0.181	Cub Run
DF83-0002	22	Miller Heights Outfall	8/7/2014	-77.325369	38.888489	Outfall Restoration	23.83	5.34	18.49	$209,803	233	11,728.80	64,800.00	CBP Urban Stream Restoration Expert Panel: Protocol 1 -BANCS Sediment Load Estimate: 64.8 tons/yr, Sediment Delivery Ratio: 0.181	Difficult Run
DF82-0001	23	South Lakes Stream Restoration	10/1/2014	-77.336585	38.932076	Urban Stream Restoration	37.23	19.79	17.43	$646,509	660	4,401.62	24,318.36	CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 660 LF, Average Stream Bank Height: 1.38 ft, Sediment Delivery Ratio: 0.181	Difficult Run
DF9045E	25	Difficult Run Tributary at Oakton Estates (DF9045)	6/26/2015	-77.350268	38.877995	Urban Stream Restoration	55.97	10.65	45.33	$337,000	300	6,524.14	36,045.00	CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 300 LF, Average Stream Bank Height: 4.5 ft, Sediment Delivery Ratio: 0.181	Difficult Run
CU9214A	34	Flatlick Phase I	12/8/2016	-77.423793	38.887072	Urban Stream Restoration	2,417.60	831.78	1,585.82	$1,725,604	1772	69,107.61	381,809.99	CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 2600 LF, Average Stream Bank Height: 5.5 ft, Sediment Delivery Ratio: 0.181	Cub Run
DF82-0008	38	Colvin Run Ph I	8/9/2017	-77.311688	38.965054	Urban Stream Restoration	2,776.59	947.96	1,828.63	$3,041,000	2175	153,126.00	846,000.00	CBP Urban Stream Restoration Expert Panel: Protocol 1 -BANCS Sediment Load Estimate: 846 tons/yr, Sediment Delivery Ratio: 0.181; Protocol 2 - Average Stream Bank Width: 30.8 ft	Difficult Run
				-77.314909	38.963992	Urban Stream Restoration					110	3,077.00	17,000.00	CBP Urban Stream Restoration Expert Panel: Protocol 1 -BANCS Sediment Load Estimate: 17 tons/yr, Sediment Delivery Ratio: 0.181; Protocol 2 - Average Stream Bank Width: 4.6 ft	Difficult Run
				-77.313468	38.964642	Urban Stream Restoration					350	11,403.00	63,000.00	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	Difficult Run
	42	Wolftrap Creek Phase 2	10/18/2017	-77.246262	38.905770	Urban Stream Restoration	693.74	268.15	425.59	$890,000	1020	45,777.60	252,914.92	CBP Urban Stream Restoration Interim Approved Removal Rates; Sediment Delivery Ratio:0.181	Difficult Run
						Subtotal:	**17,447.65**	**6,914.80**	**10,532.85**	**$ 12,788,378**	**14,995**	**511,522.97**	**2,826,093.80**		

Stream Restoration

PRJ_ID	#	Project Name	Substantial Completion	Longitude	Latitude	Type of Project or BMP	Acres Treated (Ac)	Impervious Acres Treated (Ac)	Pervious Acres Treated (Ac)	Estimated Cost ($)	Restored Length (LF)	Estimated Amount of TSS Reduction (lbs/yr)		Pollutant Reduction Calculation Method	Watershed
												With Sediment Delivery Ratio	Without Sediment Delivery Ratio*		
Projects Completed in Addition to Action Plan Projects															
	54	Stone Mill Court Reach 2	4/24/2018	-77.342058	38.879321	Outfall Restoration	32.96	7.76	25.20	$360,874	262.8	5,084.00	28,088.40	CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 263 LF, Average Stream Bank Height: 4 ft, Sediment Delivery Ratio: 0.181	Difficult Run
CU-9214	55	Flatlick Ph II	4/26/2018	-77.434525	38.881297	Urban Stream Restoration	3,331.06	1,117.71	2,213.35	$4,874,194	3560	138,323.95	764,220.72	CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 4400 LF, Average Stream Bank Height: 5.5 ft, Sediment Delivery Ratio: 0.181; Protocol 2 - Average Stream Bank Width: 46 ft	Cub Run
						Urban Stream Restoration					340			CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 346 LF, Average Stream Bank Height: 5 ft, Sediment Delivery Ratio: 0.181; Protocol 2 - Average Stream Bank Width: 15 ft	
						Urban Stream Restoration					175			CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 285 LF, Average Stream Bank Height: 5.5 ft, Sediment Delivery Ratio: 0.181; Protocol 2 - Average Stream Bank Width: 14 ft	
						Urban Stream Restoration					200			CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 225 LF, Average Stream Bank Height: 5 ft, Sediment Delivery Ratio: 0.181; Protocol 2 - Average Stream Bank Width: 28 ft	
DF82-03	56	Robinson, PCL 19 @ 0723DP (DF82-03)	5/22/2018	-77.293272	38.970800	Outfall Restoration	34.33	5.08	29.25	$395,000	260	1,256.50	6,942.00	CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 260 LF, Average Stream Bank Height: 1.0 ft, Sediment Delivery Ratio: 0.181	Difficult Run
DF82-0014	59	Lake Martin Tributaries	10/23/2018	-77.341165	38.88487	Outfall Restoration	29.48	5.24	24.24	$1,747,968	1363	36,268.39	200,377.85	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	Difficult Run
	62	Innisvale Drive Outfall Restoration	12/7/2018	-77.354019	38.803831	Outfall Restoration	17.18	3.13	14.05	$495,616	475	7,966.71	44,014.97	CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 471 LF, Average Stream Bank Height: 3.5 ft, Sediment Delivery Ratio: 0.181	Popes Head Creek
1250DP	66	Browns Chapel Pond & Outfall Improvement	4/20/2019	-77.307614	38.96985	Outfall Restoration	91.58	22.42	69.16	$262,518	145	5,132.33	28,355.41	CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 180 LF, Average Stream Bank Height: 5.9 ft, Sediment Delivery Ratio: 0.181	Difficult Run
DF82-0007		Difficult Run Tributary @ Brittenford Drive	3/1/2020	-77.297957	38.943905	Urban Stream Restoration	459.20	112.42	346.78	$4,781,000	5402	631,206.73	3,487,330.00	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 Length 5486 lf, Average Stream Bank Width: 3.9 ft, Sediment Delivery Ratio: 0.181	Difficult Run
400-C40101		Brevity Drive Outfall	11/27/2019	-77.30877	38.98328	Outfall Restoration	88.90	14.20	74.70	$622,839	540	15,657.95	86,508.01	CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 540 LF, Average Stream Bank Height: 6 ft, Sediment Delivery Ratio: 0.181	Difficult Run
		Four Stairs Court & Sandy Folly Court Outfall	11/8/2019	-77.32923	38.809097	Outfall Restoration	27.60	4.80	22.80	$572,842	1070	23,776.88	131,363.98	CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 1070 LF, Average Stream Bank Height: 4.5 ft, Sediment Delivery Ratio: 0.181	Popes Head Creek
		Flatlick PhIII	4/10/2020	-77.448606	38.878373	Urban Stream Restorat	3,989.40	1,333.50	2,655.9	$3,154,231	3,895	78,735.00	435,000.00	CBP Urban Stream Restoration Expert Panel: Protocol 1 -BANCS Sediment Load Estimate: 435 tons/yr, Average Stream Bank Height: 4.6 ft , Protocol 2 - Restored Length 3794 lf, Average Stream Bank Width: 16.2 ft, Sediment Delivery Ratio: 0.181	Cub Run

Stream Restoration

PRJ_ID	#	Project Name	Substantial Completion	Longitude	Latitude	Type of Project or BMP	Acres Treated (Ac)	Impervious Acres Treated (Ac)	Pervious Acres Treated (Ac)	Estimated Cost ($)	Restored Length (LF)	Estimated Amount of TSS Reduction (lbs/yr)		Pollutant Reduction Calculation Method	Watershed
												With Sediment Delivery Ratio	Without Sediment Delivery Ratio*		
Projects Completed in Addition to Action Plan Projects															
DF82-0005	73	Old Courthouse Spring Branch - Phase I @ Gosnell Road	1/29/2021	-77.247156	38.925587	Urban Stream Restora	369.25	259.69	109.6	$7,022,060	3,236	82,333.00	454,878.45	CBP Urban Stream Restoration Expert Panel: Protocol 1 -BANCS Sediment Load Estimate: 454.88 tons/yr, Sediment Delivery Ratio: 0.181	Difficult Run
		Snakeden Branch Tributary @ Lake Audubon	1/15/2021	-77.335564	38.929434	Urban Stream Restora	46.76	22.44	24.3	$1,860,000	863	21,344.00	117,922.65	CBP Urban Stream Restoration Expert Panel: Protocol 1 -BANCS Sediment Load Estimate: 117.92 tons/yr, Sediment Delivery Ratio: 0.181	Difficult Run
		Miller Heights Outfall	3/11/2021	-77.32549	38.888567	Outfall Restoration	31.00	5.89	25.1	$272,345	403	9,251.00	51,110.50	CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 403 LF, Average Stream Bank Height: 4.75 ft, Sediment Delivery Ratio: 0.181	Difficult Run
		Rockport Road	11/11/2020	-77.27333	38.913687	Outfall Restoration	39.70	13.10	26.6	$441,909	378	14,614.00	80,740.33	CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 378 LF, Average Stream Bank Height: 8 ft, Sediment Delivery Ratio: 0.181	Difficult Run
		Brooktrail Court	6/10/2021	-77.28009	38.928154	Outfall Restoration	39.11	7.04	32.1	$310,026	300	5,799.00	32,038.67	CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 300 LF, Average Stream Bank Height: 4 ft, Sediment Delivery Ratio: 0.181	Difficult Run
		Piney Branch	3/25/2021	-77.111759	38.814183	Urban Stream Restora	688.50	249.80	438.7	$1,600,000	1,525	104,039.00	574,801.10	CBP Urban Stream Restoration Expert Panel: Protocol 1 -BANCS Sediment Load Estimate: 574.81 tons/yr, Sediment Delivery Ratio: 0.181	Difficult Run
						Subtotal:	**9,316.01**	**3,184.21**	**6,131.83**	**28,773,421.79**	**24,393.00**	**1,180,788.44**	**6,523,693.05**		

* Sediment delivery ratio does not apply to local TMDLs

QA/QC Corrections - Some projects included Bay baseline adustments which were removed to keep reporting consistent

Project completed during the reporting period

Credit Summary by Watershed (lb\yr)	With Sediment Delivery Ratio	Without Sediment Delivery Ratio*
Cub Run Complete	438,533.99	2,422,839.72
Cub Run Under Construction	-	-
Little Rocky RunRun Complete	-	-
Little Rocky Run Under Construction	-	-
Total Bull Run	**438,533.99**	**2,422,839.72**
Difficult Run Complete	1,222,033.83	6,751,568.18
Difficult Run Under Construction	-	-
Total Difficult Run	**1,222,033.83**	**6,751,568.18**
Popes Head Creek Complete	31,743.59	175,378.95
Popes Head Creek Under Construction	-	-
Total Popes Head Creek	**31,743.59**	**175,378.95**

Structural Retrofits

PRJ_ID	#	Project Name	Substantial Completion	Longitude	Latitude	Type of Project or BMP	Acres Treated (Ac)	Impervious Acres Treated (Ac)	Pervious Acres Treated (Ac)	Estimated Cost ($)	Estimated Total TSS Reduction (lbs/yr)*	Pollutant Reduction Calculation Method	Watershed
Benthic TMDL Action Plan Project Completion Status - Stormwater Retrofits													
CU9124	1	Willoughby's Ridge Pond Retrofit(0944DP)	9/4/2009	-77.429377	38.845618	Extended Detention Pond	17.03	7.82	9.21	$277,100	5,389.42	CBP Established Efficiency, Dry Extended Detention Ponds	Cub Run
CU9125	2	Englewood Mews Pond Retrofit(1396DP)	9/4/2009	-77.428622	38.846256	Extended Detention Pond	46.42	21.63	24.79	$297,300	14,846.87	CBP Established Efficiency, Dry Extended Detention Ponds	Cub Run
CU9143	5	Fair Ridge Richmond American Pond	12/15/2009	-77.374687	38.871101	Constructed Wetland	41.50	31.22	10.28	$390,400	18,053.73	CBP Retrofits Expert Panel, ST, 0.42 inches of runoff treated	Cub Run
CU9193	6	Foxfield Pond D	12/15/2009	-77.405292	38.89487	Extended Detention Pond	111.00	22.77	88.23	$271,800	21,090.90	CBP Established Efficiency, Dry Extended Detention Ponds	Cub Run
CU9142	7	Fair Ridge Pond A	12/15/2009	-77.370964	38.870001	Constructed Wetland	65.04	53.08	11.96	$366,800	32,138.12	CBP Established Efficiency, Wet Ponds and Wetlands	Cub Run
PH9890	16	University Square	12/22/2010	-77.323737	38.838279	Extended Detention Pond	18.40	5.80	12.60	$178,100	4,504.37	CBP Established Efficiency, Dry Extended Detention Ponds	Popes Head Creek
BN9105	21	Springhill Rec Center	7/15/2011	-77.227473	38.940809	Filtering Practices	0.10	0.10	-	$39,000	93.71	CBP Established Efficiency, Filtering Practices	Bullneck Run
				-77.22833554	38.9406501	Permeable Pavement	0.40	0.40	-	$76,100	345.80	CBP Retrofits Expert Panel, RR, 0.95 inches of runoff treated	Bullneck Run
				-77.227463	38.942894	Extended Detention Pond	14.10	8.04	6.06	$56,200	5,239.89	CBP Established Efficiency, Dry Extended Detention Ponds	Bullneck Run
CU81-0003	22	Sequoia Section 2 Pond 1	8/1/2011	-77.440837	38.850177	Extended Detention Pond	92.25	30.00	62.25	$486,264	23,041.58	CBP Established Efficiency, Dry Extended Detention Ponds	Cub Run
PH81-0001	25	Barton Place Pond Retrofit (DEL 2011)	12/13/2011	-77.33245	38.806626	Wet Pond	65.92	24.39	41.53	$192,000	18,946.16	CBP Retrofits Expert Panel, ST, 0.51 inches of runoff treated	Popes Head Creek
DF9143C46	29	Government Center Stormwater Retrofit	6/29/2012	-77.353366	38.853269	Constructed Wetland	4.28	3.12	1.16	$50,000	3,071.89	CBP Retrofits Expert Panel, ST, 2.5 inches of runoff treated	Difficult Run
				-77.355078	38.852334	Constructed Wetland	45.35	25.85	19.50	$275,000	25,193.45	CBP Retrofits Expert Panel, ST, 1.39 inches of runoff treated	Difficult Run
DF87-0003	32	Great Falls Nike Park #4	11/1/2012	-77.324875	38.992132	Infiltration	0.95	0.90	0.05	$41,954	1,009.83	CBP Established Efficiency, Infiltration Practices w/o Sand, Veg.	Difficult Run
						Dry Swale	0.40	0.09	0.31	$37,495	133.07	CBP Retrofits Expert Panel, RR, 2 inches of runoff treated	Difficult Run
						Infiltration	1.89	1.79	0.10	$190,736	2,008.53	CBP Established Efficiency, Infiltration Practices w/o Sand, Veg.	Difficult Run
PH9190	33	Marymead Section 1 & 2	12/14/2012	-77.362382	38.84276	Constructed Wetland	50.20	6.53	43.67	$427,000	9,723.70	CBP Retrofits Expert Panel, ST, 0.75 inches of runoff treated	Popes Head Creek
DF9143D47	34	Fairfax County Landbay C, Pond #4	3/20/2013	-77.355287	38.852875	Constructed Wetland	16.99	9.25	7.74	$110,000	9,722.55	CBP Retrofits Expert Panel, ST, 2.31 inches of runoff treated	Difficult Run
CU9138	35	Fair Woods, Section 9, Pond 2	4/10/2013	-77.38609	38.877209	Extended Detention Pond	26.99	14.91	12.08	$401,550	9,794.02	CBP Established Efficiency, Dry Extended Detention Ponds	Cub Run
PH9180B	36	Brentwood West	6/19/2013	-77.365386	38.837887	Extended Detention Pond	35.27	9.52	25.75	$345,158	7,838.91	CBP Established Efficiency, Dry Extended Detention Ponds	Popes Head Creek
DF9031A7	38	Regional SWM Pond D-31	6/24/2013	-77.314594	38.892094	Extended Detention Pond	331.11	116.20	214.91	$655,815	86,944.28	CBP Established Efficiency, Dry Extended Detention Ponds	Difficult Run
DF81-0006	45	Towlston Meadow (0371DP)	4/4/2014	-77.265751	38.949846	Constructed Wetland	26.00	8.00	18.00	$266,751	6,267.48	CBP Established Efficiency, Wet Ponds and Wetlands	Difficult Run
DF87-0006	48	Oak Marr Rec Center Stormwater	8/1/2014	-77.316279	38.874842	Bioretention	0.95	0.75	0.20	$128,366	441.28	CBP Retrofits Expert Panel, RR, 0.4 inches of runoff treated	Difficult Run
DF87-0001	51	Oakton Library	9/15/2014	-77.302299	-77.302299	Permeable Pavement	0.37	0.25	0.12	$239,841	267.78	CBP Retrofits Expert Panel, RR, 2.5 inches of runoff treated	Difficult Run
				-77.30182	38.883805	Bioretention	0.91	0.67	0.24	$67,545	454.84	CBP Established Efficiency, Bioretention C/D soils, underdrain	Difficult Run
				-77.301959	38.883783	Infiltration	0.50	0.42	0.08	$37,113	480.72	CBP Established Efficiency, Infiltration Practices w/o Sand, Veg.	Difficult Run
CU87-0002	53	Fire and Rescue Training Academy II	9/27/2014	-77.37489023	38.8545573	Permeable Pavement	0.82	0.65	0.17	$89,210	660.28	CBP Retrofits Expert Panel, RR, 1.94 inches of runoff treated	Cub Run
CU9186	55	Armfield Sec 5	11/15/2014	-77.418565	38.895334	Constructed Wetland	78.79	27.43	51.36	$317,413	19,507.74	CBP Retrofits Expert Panel, ST, 0.43 inches of runoff treated	Cub Run
DF9045A6	62	Oakton Swim and Racquet Club (DF9045A6)	5/22/2015	-77.350396	-77.350396	Bioretention	22.70	3.74	18.96	$90,120	4,242.65	CBP Established Efficiency, Bioretention C/D soils, underdrain	Difficult Run
				-77.350679	-77.350679	Bioretention	18.87	2.47	16.40	$90,120	3,176.95	CBP Established Efficiency, Bioretention C/D soils, underdrain	Difficult Run
				-77.350653	-77.350653	Bioretention	5.32	2.18	3.14	$90,120	1,708.02	CBP Established Efficiency, Bioretention C/D soils, underdrain	Difficult Run
DF9045F	66	Penderbrook (DF9045/0691DP)	3/8/2016	-77.362336	38.87771	Constructed Wetland	22.53	2.60	19.93	$105,021	4,239.05	CBP Retrofits Expert Panel, ST, 0.79 inches of runoff treated	Difficult Run
CU9214A	69	Flatlick Phase I	12/8/2016	-77.422712	38.887882	Constructed Wetland	8.39	3.59	4.80	$325,765	3,912.75	CBP Retrofits Expert Panel, ST, 1.87 inches of runoff treated	Cub Run
						Subtotal:	**1,171.74**	**446.16**	**725.58**	**$ 7,013,155**	**344,490.32**		

Structural Retrofits

PRJ_ID	#	Project Name	Substantial Completion	Longitude	Latitude	Type of Project or BMP	Acres Treated (Ac)	Impervious Acres Treated (Ac)	Pervious Acres Treated (Ac)	Estimated Cost ($)	Estimated Total TSS Reduction (lbs/yr)*	Pollutant Reduction Calculation Method	Watershed
Projects Completed in Addition to Action Plan Projects													
CU9711	3	Franklin Middle School	9/14/2009	-77.422277	38.90754	Constructed Wetland	54.40	10.10	44.30	$556,479	11,415.78	CBP Retrofits Expert Panel, ST, 0.62 inches of runoff treated	Cub Run
				-77.422277	38.90754	Bioretention	1.41	1.09	0.32	$72,000	1,010.02	CBP Retrofits Expert Panel, RR, 1.05 inches of runoff treated	Cub Run
DF87-0004B	31	Waples Mill ES Phase II	8/8/2012	-77.345172	-77.345172	Permeable Pavement	0.82	0.71	0.11	$250,000	708.85	CBP Retrofits Expert Panel, RR, 1.92 inches of runoff treated	Difficult Run
DF	67	Terraset ES	12/15/2015	-77.343127	38.937057	Permeable Pavement	1.28	0.84	0.44	$461,857	905.27	CBP Retrofits Expert Panel RR, 2.5 inches of runoff treated	Difficult Run
DF	67	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	Difficult Run
BR8001-BR001	14	Weltman Estates	10/4/2010	-77.491502	38.83826	Extended Detention Pond	47.82	28.69	19.13	$345,000	18,484.11	CBP Established Efficiency, Dry Extended Detention Ponds	Bull Run
DF87-0005	74	Sunrise Valley ES	9/1/2015	-77.3213	38.941291	Permeable Pavement	0.21	0.14	0.07	$532,290	150.38	CBP Retrofits Expert Panel, RR, 2.5 inches of runoff treated	Difficult Run
				-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	Difficult Run
				-77.319947	38.941094	Dry Swale	0.33	0.19	0.14		197.73	CBP Established Efficiency, Bioswale	Difficult Run
				-77.318977	38.939997	Infiltration	2.72	1.43	1.29		1,797.22	CBP Established Efficiency, Infiltration Practices w/o Sand, Veg.	Difficult Run
CU9807	76	Stringfellow Road - Park & Ride Stormwater Enhancements	5/11/2016	-77.40506	38.853782	Permeable Pavement	0.83	0.75	0.08	$612,337	760.96	CBP Retrofits Expert Panel RR, 2.5 inches of runoff treated	Cub Run
				-77.404792	38.854064	Permeable Pavement	0.32	0.29	0.03		292.55	CBP Retrofits Expert Panel RR, 2.5 inches of runoff treated	Cub Run
				-77.405645	38.853421	Permeable Pavement	0.97	0.83	0.15		847.34	CBP Retrofits Expert Panel RR, 2.5 inches of runoff treated	Cub Run
				-77.405548	38.854177	Permeable Pavement	0.41	0.36	0.05		370.04	CBP Retrofits Expert Panel RR, 2.5 inches of runoff treated	Cub Run
				-77.405226	38.854651	Permeable Pavement	0.46	0.44	0.02		444.48	CBP Retrofits Expert Panel RR, 2.5 inches of runoff treated	Cub Run
				-77.40434	38.853796	Filtering Practices	0.03	0.03	0.00		23.73	CBP Retrofits Expert Panel RR, 2.5 inches of runoff treated	Cub Run
				-77.404202	38.853338	Filtering Practices	0.03	0.03	0.00		28.40	CBP Retrofits Expert Panel RR, 2.5 inches of runoff treated	Cub Run
CU87-0001	81	West Ox Bus Operations Center Expansion (CU87-0001)	7/21/2017	-77.377953	38.84816	Permeable Pavement	0.08	0.08	-	$5,501	73.26	CBP Retrofits Expert Panel RR, 1.21 inches of runoff treated	Cub Run
						Permeable Pavement	0.42	0.42	-	$83,249	380.46	CBP Retrofits Expert Panel RR, 1.17 inches of runoff treated	Cub Run
	88	Public Safety Headquarters Building Stormwater Enhancements	8/30/2017	-77.362589	38.857386	Dry Swale	3.10	2.54	0.56	$264,636	2,458.08	CBP Established Efficiency, Bioswale	Difficult Run
						Dry Swale	0.26	0.20	0.06	$22,195	194.26	CBP Established Efficiency, Bioswale	Difficult Run
						Permeable Pavement	0.24	0.24	-	$91,300	210.59	CBP Retrofits Expert Panel RR, 1.0 inches of runoff treated	Difficult Run
						Vegetated Roof	0.53	0.53	-	$315,147	465.05	CBP Retrofits Expert Panel, RR, 1.0 inches of runoff treated	Difficult Run
						Rainwater Harvesting	0.61	0.61	-	$366,143	582.95	CBP Retrofits Expert Panel, RR, 1.51 inches of runoff treated	Difficult Run
						Biofilter # 1	0.09	0.02	0.07	$50,503	25.01	CBP Retrofits Expert Panel, ST, 1.0 inches of runoff treated	Difficult Run
						Biofilter # 2	0.26	0.15	0.11	$145,897	136.36	CBP Retrofits Expert Panel, ST, 1.0 inches of runoff treated	Difficult Run
DF9143H51		Herrity Pond Retrofit	8/8/2018	-77.361313	38.857138	Wet Pond	33.9	17.43	16.47	$820,000	412.29	CBP Retrofits Expert Panel RR, 0.48 inches of runoff treated	Difficult Run
LR81-0001	91	Centreville Greene Pond 1 (LR81-0001)	2/4/2019	-77.413883	38.83876	Constructed Wetland	57.52	24.22	33.29	$384,937	4,289.40	CBP Retrofits Expert Panel, ST, 0.09 inches of runoff treated	Little Rocky Run
LR81-0002		Centreville Greene Pond 2 (LR81-0002)	2/4/2019	-77.416088	38.836768	Constructed Wetland	27.96	16.43	11.53	$361,107	4,574.42	CBP Retrofits Expert Panel ST, 0.15 inches of runoff treated	Little Rocky Run
1250DP		Browns Chapel Pond & Outfall Improvement	4/20/2019	-77.308138	38.970711	Extended Detention Pond	81.66	20.07	61.59	$262,518	2,693.90	CBP Retrofits Expert Panel, ST curve (wet ponds) for forebay only, 0.14 inches of runoff treated	Difficult Run
		Langston Hughes MS	6/30/2020	-77.338308	38.934725	Infiltration	2	1.9	0.1	$294,000	2,130.93	CBEE Infiltration w/o sand	Difficult Run
		Willow Springs ES	8/16/2019	-77.37839	38.831059	Filtering Practices	7.36	1.24	6.12	$534,000	2,022.67	CBEE Filtering Practices	Popes Head Creek

Structural Retrofits

PRJ_ID	#	Project Name	Substantial Completion	Longitude	Latitude	Type of Project or BMP	Acres Treated (Ac)	Impervious Acres Treated (Ac)	Pervious Acres Treated (Ac)	Estimated Cost ($)	Estimated Total TSS Reduction (lbs/yr)*	Pollutant Reduction Calculation Method	Watershed
Projects Completed in Addition to Action Plan Projects													
		Herrity Concrete Fountain Replacement	1/29/2021	-77.3625	38.8565	Rainwater Harvesting	2.2	1.87	0.33	$321,750	697.00	VA Rainwater Harvesting Spreadsheet	Difficult Run
		Herrity Concrete Fountain Replacement	1/29/2021	-77.3625	38.8565	Bioretention	0.1	0.08	0.02	$321,750	53.67	CBEE Bioretention C/D soils, underdrain	Difficult Run
		Foulger and Boldog	1/15/2021	-77.390302	38.847329	Wet Pond	51.3	14.56	41.85	$72,000	2,765.80	CBP Retrofits Expert Panel, ST curve, for 0.67 inches of runoff w/ forebay	Little Rocky Run
						Subtotal:	**382.88**	**149.24**	**238.74**	**7,546,595.26**	**62,417.32**		

* Adjustments for baseline do not apply to local TMDLs

Total Credit Summary by Watershed	Estimated TSS Reduction (lb/yr)*
Bull Run Complete	18,484.11
Bull Run Under Construction	-
Total Bull Run	**18,484.11**
Cub Run Complete	164,082.44
Cub Run Under Construction	-
Total Cub Run	**164,082.44**
Little Rocky Run Complete	11,629.62
Little Rocky Run Under Construction	-
Total Little Rocky Run	**11,629.62**
Difficult Run Complete	163,996.26
Difficult Run Under Construction	-
Total Difficult Run	**163,996.26**
Popes Head Creek Complete	43,035.81
Popes Head Creek Under Construction	-
Total Popes Head Creek	**43,035.81**

Originally identified in Difficult Run in TMDL Action Plan - not included on tracking ledger

Added FCPS Projects

Corrected watershed

Project completed during the reporting period or previously unreported

Land Use Change

#	Project Name	Substantial Completion	Longitude	Latitude	Pollutant Reduction Calculation Method	Land Use From	Conversion	Area Converted (SF)	Estimated Cost of Implementation ($)	Estimated Amount of TSS Reduction from Land Use Change (lb/yr)	Watershed
	Construction Complete										
7	Oak Marr Rec Center Stormwater Enhancements	8/1/2014	-77.316595	38.875066	Land Use Change	Pervious	Grass	16,200	$ 35,342	-	Difficult Run
	(DF87-0006)	8/1/2014	-77.315768	38.874972	Land Use Change	Pervious	Grass	6,480	$ 14,375	-	Difficult Run
9	Government Center Pollinator Meadow	5/15/2016	-77.354660	38.855184	Land Use Change	Pervious	Grass	38,333	$ 35,000	-	Difficult Run
	WQ FCPA @ Rock Hill	12/24/2019	-77.473033	38.876334	Land Use Change	Pervious	Forest	154,649	$ 170,600	1,158.78	Cub Run
	Herrity Concrete Fountain Replacement	1/29/2021	-77.362500	38.856500	Land Use Change	Impervious	Pervious	6,970		179.06	Difficult Run
							Subtotal:	**222,632**	**255,317**	**1,337.84**	

Project completed during the reporting period or previously unreported

Difficult Run Complete	179.06
Difficult Run Under Construction	-
Total Difficult Run	**179.06**
Cub Run Complete	1,158.78
Cub Run Under Construction	-
Total Cub Run	**1,158.78**

Fairfax County 2021 MS4 Program Plan and Annual Report

Appendix R18

Summary of Program Effectiveness

VSMP Permit Number VA0088587
9-30-2021

The purpose of this table is to illustrate how each permit element is assessing the effectiveness of the programs put in place to ensure compliance. Evaluation of program elements for effectiveness is a continuous process as implementation occurs. Staff meets on an annual basis to review and evaluate the effectiveness of the MS4 program.

MS4 Action ID	Permit Element	Description of Assessment	Outcome
A.2.	Permittee Responsibilities	The county reviews the roles and responsibilities section of the MS4 Program Plan annually to verify that it is accurate.	Complete – No changes from FY20.
A.3.	Legal Authority	The county reviews its ordinances annually to determine if any changes are needed to implement the MS4 Program Plan.	Complete – No change from FY20.
A.4.	MS4 Program Resources	The county reviews its budget annually to ensure that it has adequate resources to implement the MS4 Program Plan.	Complete – MS4 Program Plan budget is adequate.
A.5	Permit Maintenance Fees		Complete – submitted annually.
A.6.	MS4 Program Plan		Complete – the county maintains its MS4 Program Plan on its website.
A.7.	MS4 Program Review and Updates	The county reviews the MS4 Program Plan annually as required.	Complete – minor modifications to the Program Plan are documented in the annual report.
B.1.	Planning		Complete – the summary of potential projects was submitted as required.
B.2.a.	Construction Site Runoff and Post Construction Runoff from Areas of New Development and Development on Prior Developed Lands	The county conducts a needs assessment annually to provide supplemental training for plan reviewers and site inspectors.	Fairfax County developed a Web GIS solution to streamline the management of site-related construction complaints. The system enables managers, inspectors, administrative staff and the general public to seamlessly process and resolve complaints efficiently.
B.2.b.	Retrofitting on Prior Developed Lands	This permit element is assessed by ensuring the county has completed 30 of the projects	Complete – 30 projects constructed.

MS4 Action ID	Permit Element	Description of Assessment	Outcome
		that were submitted in compliance with Part.I.B.1 of the permit.	
B.2.c.	Roadways	An annual review of the required SOPs is conducted to assess accuracy. Also, the county maintains an updated list of roadways, parking lots, and streets that are treated and not treated. This list is refreshed annually.	Complete – the annual review resulted in revisions to the SOPs to resolve overlaps and to ensure consistency with the county facility SWPPPs. The updated SOPs are included as a Program Plan appendix.
B.2.d.	Pesticide, Herbicide, and Fertilizer Application	The county annually reviews the guideline SOP, as well as the status of implementation of NMPs.	Complete – The county convened a workgroup that generated a county-wide GIS layer for 'Ecologically Sensitive Sites' that will be available to certified Nutrient Management Planners for inclusion in NMPs. Also, Neighborhood and Community Services modified web content and permit application language to include language to confirm that user groups must comply with state regulations related to PHF application.
B.2.e.	Illicit Discharges and Improper Disposal	The program is pro-active and works to ensure county processes facilitate enforcement of the stormwater ordinance. The program is evaluated based on satisfactory closeout of reported cases in timely manner by follow-up inspections.	Staff continued to implement the multiple-agency MOU to ensure the plan review process identifies cooling towers and ensures proper permitting. As a preventive measure, staff conducted follow up inspections for a third year of commercial lots where road salt had been improperly stored that were originally identified in FY2019.
B.2.f.	Spill Prevention and Response	The county evaluates incidents occurring over the reporting period to determine if program changes are needed or if	Complete – no changes to program.

MS4 Action ID	Permit Element	Description of Assessment	Outcome
		additional training on spill response is required.	
B.2.g.	Industrial & High Risk Runoff	The program is evaluated annually against performance goals (number of inspections, updated inventory of potential IHRR facilities) documented in SOPs.	Complete – The program updated the facility list.
B.2.h.	Stormwater Infrastructure Management	The county reviews its Post Construction Stormwater Inspection and Maintenance Policies and Procedures for stormwater management facilities and Best Management Practices annually and assesses the following performance metrics: Percentage of Public Facility Inventory inspections completed Percentage of Private Facility Inventory inspections completed Number of Enforcement Actions brought against the Inspection Program from regulators (EPA or DEQ) The county assesses the conveyance piece of the permit element by tracking the identification and elimination of "unauthorized intrusions" into the MS4, by tracking responses to drainage complaints, and annually assessing progress toward the program goal of inspecting 15% of the MS4. On an annual basis, the MS4 service area is reviewed and updated based on	Stormwater facility and conveyance system inspections are on track to meet the inspection schedule specified in the MS4 Program Plan with appropriate follow-up. The county has developed and is maintaining a stream restoration inspection SOP and is in the process of enhancing the asset management system to facilitate and track inspection and maintenance details. Elimination of "unauthorized intrusions" and response to drainage complaints continue to be performed in a timely fashion. The MS4 system map was updated based on new infrastructure information and comments provided by Stormwater staff.

MS4 Action ID	Permit Element	Description of Assessment	Outcome
		infrastructure additions and comments by field staff (monitoring programs and IDID) to improve the map accuracy.	
B.2.i.	County Facilities	The SWPPP Program manager conducts an annual inspection to ensure SWPPP documents are up to date and that inspections and trainings are conducted as specified. The Stormdrain Marking Inspection SOP was updated to ensure storm drain labels are assessed and installed at HPMF facilities and on permittee properties with greater than 2-acres of impervious surface.	Site managers at several facilities have started using Work Order Management (WOM) systems to trigger quarterly inspections and inform upper management on completion of assignment. The remainder of HPMF facilities are in the process of implementing similar procedures. The project team is in the process of implementing the site selection process to identify facilities to inspect in FY22.
B.2.j.	Public Education/Participation	The county's MS4 public education team meets annually to assess the status of outreach for target audiences and to determine if additional resources are needed to complete MS4 Program Plan outreach activities. The county continues to coordinate with Clean Water Partners to assess trends in stormwater knowledge and behavior and preferences for receiving information.	Fairfax County has eight partners to assist fulfilling this permit requirement. These partnerships assist the county in reaching 3,623,543 people to ensure the required messages are given to a wide variety of audiences. The MS4 Public Education and Participation Team meets at least once a year with the partners to assess the current outreach efforts. Additional meetings may take place to improve existing outreach or develop new outreach. In coordination with the DPWES website development team, Stormwater Management made significant revisions to its web content to facilitate reporting of stormwater management and

MS4 Action ID	Permit Element	Description of Assessment	Outcome
			pollution issues, streamline and organize educational topics, and provide better search results. Stormwater updated web content related to the illicit discharge and improper disposal program, car washing, swimming pool discharges, cooling tower discharges, and salt storage. Stormwater also created new publications including a fact sheet for food service vendors. Complete: The Clean Water Partner survey results have been provided as an appendix with a brief summary of the results.
B.2.k.	Training	The trainings are evaluated annually to ensure they are still relevant, that the appropriate staff are trained as required, and to amend content based on feedback from attendees.	Complete. - Fairfax County's Site Code Academy provides training classes on a variety of topics, such as stormwater management, site inspections for BMPs and E&S controls, and associated regulatory requirements for inspectors, plan reviewers and other technical staff. The intent is to provide contact hours that can be applied to certifications and professional licenses and to enhance the county's customer service efforts. Classes are developed based on the needs assessment and

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			repeated throughout the year on an as-needed basis. - Minor modifications were made to the trainings to update out of date information and to update the code of the trainings to ensure ease of access.
B.2.l.	Water Quality Screening Programs	The dry weather screening program SOP is assessed annually to confirm that outfall selection and screening procedures are effective in locating illicit discharges. The sampling staff also assess the coordination process with the IDID program to ensure illicit discharges are eliminated. The wet weather screening program SOP is evaluated annually for potential improvements to procedures and results are reviewed to identify and mitigate potential sources of pollution. The County began piloting changes to the wet weather screening program in October, 2020 with an updated, improved SOP.	Complete – No changes were made to the dry weather SOP. The dry weather screening program continues to be successful in locating illicit discharges that are eliminated in coordination with the IDID program. Complete – Starting in October 2020, Fairfax County began piloting an updated, improved wet weather screening SOP at two new sites, which modifies our selection protocol, adds new constituents, and begins using more actionable criteria for our inspectors. The County will monitor these new sites for five years to better quantify seasonal and interannual magnitudes and variability of pollutants entering the MS4. Samples were collected under both the old and updated SOP through June, 2021. The program will fully transition to the updated wet weather screening SOP in July, 2021.

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B.2.m.	Infrastructure Coordination	The county evaluates coordination with VDOT during the annual meeting. A focus of the meeting is how the county and VDOT can work together more effectively.	The county is exploring partnership projects to meet TMDL requirements.
C.1	Biological Stream Monitoring	The county evaluates the program annually with a goal of assessing long term trends in the benthic macroinvertebrate community.	The county continues to gather data in compliance with the permit but does not have enough data to evaluate long-term trends at this time.
C.2.	In-Stream Monitoring	The county evaluates the program annually with a goal of assessing long term trends in stream water quality.	The county continues to gather data in compliance with the permit but does not have enough data to evaluate long-term trends at this time.
C.3.	Floatables Monitoring	The county evaluates the program annually with a goal of determining a loading rate of floatables from the MS4 to streams in the county.	The Floatables Monitoring Program SOP was updated to include a methodology to identify additional sites to be monitored, with the goal of improving the confidence in observations made at the compliance sites currently being monitored.
C.4.	Structural and Source Controls Compliance Monitoring and Tracking	The county will annually evaluate its process for updating the asset management system and make improvements as needed. The county is currently evaluating new asset management systems to improve tracking.	Complete – no changes made to process. Any improvements to the tracking system will be documented in future annual reports.
D.1.	Chesapeake Bay Special Condition	The county implements and tracks projects to reduce nitrogen, phosphorus and total suspended sediments. Pollutant reduction progress is evaluated against TMDL reduction goals.	Complete – the county has met the reduction goals in the Chesapeake Bay Special Condition. The county continues to implement and track projects to document progress towards meeting

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			future Chesapeake Bay permit requirements.
D.2.	TMDL Action Plans other than the Chesapeake Bay TMDL	Each of the Local TMDL Action Plans contains a section on assessment of effectiveness.	• Bacteria: The county conducts dog park assessments to evaluate effectiveness of controls – controls appeared to be effective in the reporting period. Public education effectiveness is assessed through the Clean Water Partners survey. • Benthic: Progress towards meeting sediment reduction goals is tracked and reported in the annual report. • PCB: Complete - Educational outreach materials appropriate for industrial and high risk runoff facilities were developed in partnership with NVRC and distributed to facilities.