County of Fairfax, Virginia

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

September 30, 2020

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

Reference: 2020 Municipal Separate Storm Sewer System Program Plan and Annual Report for Virginia Stormwater Management Program Permit No. VA0088587

Dear Ms. Tuthill:

The 2020 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, 2019 through June 30, 2020 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,

Randolph W. Bartlett
Director

Enclosures: As stated

cc: Craig Carinci, Director, Stormwater Planning Division, Department of Public Works and Environmental Services,

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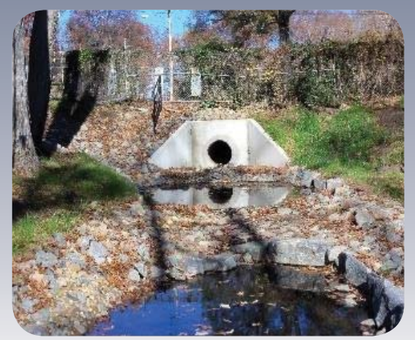
Fairfax County, Virginia

2020 Municipal Separate Storm Sewer System (MS4) Program Plan and Annual Report

September 30, 2020

Reporting Period: July 1, 2019 through June 30, 2020



Permit No: VA0088587
Effective Date: April 1, 2015
Expiration Date: March 31, 2020

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, 2020

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

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Fairfax County, Virginia

2020 Municipal Separate Storm Sewer System (MS4) Program Plan and Annual Report

September 30, 2020

VSMP Permit No: VA0088587

Effective Date: April 1, 2015

Expiration Date: March 31, 2020

Administratively Continued

Reporting Period: July 1, 2019 through June 30, 2020

2020 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, 2019 through June 30, 2020 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.
2020 Program Plan Elements:	This column describes the county's program for compliance with each permit requirement for the 2020 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.*
2020 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	2020 Program Plan Elements (July 1, 2019 through June 30, 2020)	Due Date / Annual Timeline — Permit Year 1	2	3	4	5	Specific Reporting Requirement	2020 Annual Report (July 1, 2019 through June 30, 2020)
	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	2020 Program Plan Elements (July 1, 2019 through June 30, 2020)	Due Date / Annual Timeline — Permit Year 1	2	3	4	5	Specific Reporting Requirement	2020 Annual Report (July 1, 2019 through June 30, 2020)
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	2020 Program Plan Elements (July 1, 2019 through June 30, 2020)	Due Date / Annual Timeline — Permit Year 1	2	3	4	5	Specific Reporting Requirement	2020 Annual Report (July 1, 2019 through June 30, 2020)
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 "2020 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: o Northern Virginia Soil and Water Conservation District (NVSWCD) o Clean Fairfax Council o Northern Virginia Regional Commission (NVRC) Clean Water Partners o Fairfax County Park Authority (FCPA) o Fairfax County Public Schools (FCPS)	►	►	►	►	►	*Each annual report shall include a current list of roles and responsibilities.*	See the "Responsible Party" and "2020 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	2020 Program Plan Elements (July 1, 2019 through June 30, 2020)	Due Date / Annual Timeline — Permit Year 1	2	3	4	5	Specific Reporting Requirement	2020 Annual Report (July 1, 2019 through June 30, 2020)
A.3.a.	*Control the contribution of pollutants to the MS4;*	DPWES (124, 104, 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;*	DPWES (124, 104, 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;*	DPWES (124, 104, 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	2020 Program Plan Elements (July 1, 2019 through June 30, 2020)	Due Date / Annual Timeline — Permit Year 1	2	3	4	5	Specific Reporting Requirement	2020 Annual Report (July 1, 2019 through June 30, 2020)
A.3.d.	*Require compliance with conditions in ordinances, permits, contracts, inter-jurisdictional agreements, or orders; and*	DPWES (124, 104, 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: o Stormwater Management Ordinance (Chapter 124): see Article 8 – Violations and Penalties. o Erosion and Sediment Control Ordinance (Chapter 104): see § 104-1-12. - Penalties, Injunctions, and Other Legal Actions. o Fire Protection Ordinance(Chapter 62): see § 62-1-1. – Penalty: § 62-2-5. – Powers of arrest. o Plumbing and Gas Provisions Ordinance (Chapter 65): see Article 7. – Penalties. o Food and Food-Service Establishments Ordinance (Chapter 43.1): see Article 4 – Penalties; § 8-4 Inspection and Correction of Violations. o Health or Safety Menaces Ordinance (Chapter 46): see § 46-1-3 – Abatement of health or safety menaces. o Individual Sewage Disposal Facilities Ordinance (Chapter 68.1): see § 68.1-1-3. – Penalties. o Water Recreation Facilities Ordinance (Chapter 69.1): see § 69.1-1-22. – Penalties. o 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	2020 Program Plan Elements (July 1, 2019 through June 30, 2020)	Due Date / Annual Timeline – Permit Year 1	2	3	4	5	Specific Reporting Requirement	2020 Annual Report (July 1, 2019 through June 30, 2020)
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.*	DPWES (124, 104, 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 $0.0325 (three and a quarter cents) 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 2021 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/fy2021/adopted/volume2/40100.pdf

MS4 Action ID	Permit Requirement	Responsible Party	2020 Program Plan Elements (July 1, 2019 through June 30, 2020)	Due Date / Annual Timeline — Permit Year 1	2	3	4	5	Specific Reporting Requirement	2020 Annual Report (July 1, 2019 through June 30, 2020)
	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 2000413051 dated September 5, 2019.
	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 2020 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 2020 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 2020 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 submited 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.

MS4 Action ID	Permit Requirement	Responsible Party	2020 Program Plan Elements (July 1, 2019 through June 30, 2020)	Due Date / Annual Timeline — Permit Year 1	2	3	4	5	Specific Reporting Requirement	2020 Annual Report (July 1, 2019 through June 30, 2020)
	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: • During FY20, programmatic changes were made to Chapter 124 of the County Code to make operations more effective. No changes were made to change the context of the ordinance. • Updated the Stormwater Infrastructure SOP. • .
A.7.a.	***MS4 Program Updates and Modifications:*** *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;*									

MS4 Action ID	Permit Requirement	Responsible Party	2020 Program Plan Elements (July 1, 2019 through June 30, 2020)	Due Date / Annual Timeline — Permit Year 1	2	3	4	5	Specific Reporting Requirement	2020 Annual Report (July 1, 2019 through June 30, 2020)
	(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.* *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:*									

MS4 Action ID	Permit Requirement	Responsible Party	2020 Program Plan Elements (July 1, 2019 through June 30, 2020)	Due Date / Annual Timeline — Permit Year 1	2	3	4	5	Specific Reporting Requirement	2020 Annual Report (July 1, 2019 through June 30, 2020)	
	B.1. Planning										
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:	757
										Total number of acres disturbed:	667
										Number of VESCP inspections conducted:	24,262
										Number of VSMP inspections conducted:	692
										Number of VESCP Notices of Violation Issued:	224
										Number of VSMP Notices of Violation Issued: *During FY19, the county incorrectly reported the total number of acres disturbed as 10,135. It should have been reported as 987. The cause of error was a single line item in the approved plans report which reported total disturbance using square footage instead of acreage, thereby increasing the number inaccurately.	12

MS4 Action ID	Permit Requirement	Responsible Party	2020 Program Plan Elements (July 1, 2019 through June 30, 2020)	Due Date / Annual Timeline — Permit Year 1	2	3	4	5	Specific Reporting Requirement	2020 Annual Report (July 1, 2019 through June 30, 2020)
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).
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	2020 Program Plan Elements (July 1, 2019 through June 30, 2020)	Due Date / Annual Timeline (Permit Year 1)	Permit Year 2	Permit Year 3	Permit Year 4	Permit Year 5	Specific Reporting Requirement	2020 Annual Report (July 1, 2019 through June 30, 2020)
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	2020 Program Plan Elements (July 1, 2019 through June 30, 2020)	Due Date / Annual Timeline (Permit Year)					Specific Reporting Requirement	2020 Annual Report (July 1, 2019 through June 30, 2020)
				1	2	3	4	5		
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	2020 Program Plan Elements (July 1, 2019 through June 30, 2020)	Due Date / Annual Timeline — Permit Year 1	2	3	4	5	Specific Reporting Requirement	2020 Annual Report (July 1, 2019 through June 30, 2020)
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	2020 Program Plan Elements (July 1, 2019 through June 30, 2020)	Due Date / Annual Timeline — Permit Year 1	2	3	4	5	Specific Reporting Requirement	2020 Annual Report (July 1, 2019 through June 30, 2020)
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 964,075.20 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	2020 Program Plan Elements (July 1, 2019 through June 30, 2020)	Due Date / Annual Timeline — Permit Year 1	2	3	4	5	Specific Reporting Requirement	2020 Annual Report (July 1, 2019 through June 30, 2020)
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 84 reports of illicit discharge or improper disposal during the reporting period. Seven of seven 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	2020 Program Plan Elements (July 1, 2019 through June 30, 2020)	Due Date / Annual Timeline — Permit Year 1	2	3	4	5	Specific Reporting Requirement	2020 Annual Report (July 1, 2019 through June 30, 2020)
	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 and Hazardous Materials Investigative Services (FHMIS) Training Manual (Chapter 12, Environmental Crimes, Section 12.5, 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 FHMIS 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	2020 Program Plan Elements (July 1, 2019 through June 30, 2020)	Due Date / Annual Timeline — Permit Year 1	2	3	4	5	Specific Reporting Requirement	2020 Annual Report (July 1, 2019 through June 30, 2020)
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 27 facilities on the IHRR list during the reporting period. • See Appendix R5 for the list of outfalls from 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.	►	►	►	►	►		

<table>
<tr><th rowspan="3">MS4 Action ID</th><th rowspan="3">Permit Requirement</th><th rowspan="3">Responsible Party</th><th rowspan="3">2020 Program Plan Elements (July 1, 2019 through June 30, 2020)</th><th colspan="5">Due Date / Annual Timeline</th><th rowspan="3">Specific Reporting Requirement</th><th rowspan="3">2020 Annual Report (July 1, 2019 through June 30, 2020)</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.g.5.</td><td>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.</td><td>SWPD</td><td>• 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.</td><td>►</td><td>►</td><td>►</td><td>►</td><td>►</td><td>Each annual report shall include a list of referrals to the Department.</td><td>Fairfax County referred the following two (2) facilities to DEQ during the reporting period:
<table>
<tr><th>Facility ID</th><th>VPDES Permit Type (if applicable)</th><th>VPDES Permit No.</th><th>Reason Referred to DEQ</th></tr>
<tr><td>VPD049305470</td><td>General Stormwater Industrial</td><td>VAR051066</td><td>Did not submit DMR</td></tr>
<tr><td>VPD118107035</td><td>General Stormwater Industrial</td><td>VAR052366</td><td>Did not submit DMR</td></tr>
</table></td></tr>
<tr><td>B.2.g.6.</td><td>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.</td><td>SWPD</td><td>• 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.</td><td>►</td><td>►</td><td>►</td><td>►</td><td>►</td><td></td><td></td></tr>
<tr><td></td><td>B.2.h. Stormwater Infrastructure Management</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>B.2.h.</td><td>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.</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>B.2.h.1.</td><td>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:</td><td>MSMD</td><td>The county meets this requirement through implementation of the actions described below.</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	2020 Program Plan Elements (July 1, 2019 through June 30, 2020)	Due Date / Annual Timeline — Permit Year 1	2	3	4	5	Specific Reporting Requirement	2020 Annual Report (July 1, 2019 through June 30, 2020)
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)	15	-	-	17
BR (Bioretention)	-	138	6	139
CS (Cistern System)	2	-	-	2
DP (Dry Pond - peak shaver/extended detention/enhanced extended detention)	850	1,282	34	1,419
FC-PL566 (PL566 Dams)	6	6	6	6
FTW (Floating Treatment Wetland)	4	4	-	4
GR (Vegetated Roof)	-	15	-	15
MB (Manufactured BMP)	21	-	3	27
OS (Open Space/Meadow)	6	-	-	6
PP (Permeable Pavement)	-	83	-	106
RF (Reforestation)	41	-	-	55
RT (Rooftop Detention)	1	-	-	1
SF (Sand Filter)	10	-	1	10
ST (Synthetic Turf)	-	-	-	1
TF (Tree Box Filter/Filterra)	-	233	21	234
TR (Infiltration Practice/Trench)	86	-	1	97
UG (Underground Detention)	98	-	-	110
VS (Vegetated Swale)	-	72	25	72
WL (Constructed Wetland)	2	-	-	2
WP (Wet Pond)	14	15	13	28
WS (Wet Swale)	-	-	-	7
TOTAL	**1,156**	**1,848**	**110**	**2,358**

MS4 Action ID	Permit Requirement	Responsible Party	2020 Program Plan Elements (July 1, 2019 through June 30, 2020)	Due Date / Annual Timeline — Permit Year 1	2	3	4	5	Specific Reporting Requirement	2020 Annual Report (July 1, 2019 through June 30, 2020)
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: 7,219,645 — 100.0 Total storm sewer system inspected: 2,334,155 — 32.3 Cumulative storm sewer system inspected since 4/1/2015: 9,085,223 — 125.8 Total storm sewer system maintained: 590,647 — 8.2 Total storm sewer system repaired: 11,789 — 0.16
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	2020 Program Plan Elements (July 1, 2019 through June 30, 2020)	Due Date / Annual Timeline — Permit Year 1	2	3	4	5	Specific Reporting Requirement	2020 Annual Report (July 1, 2019 through June 30, 2020)
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	2020 Program Plan Elements (July 1, 2019 through June 30, 2020)	Due Date / Annual Timeline — Permit Year 1	2	3	4	5	Specific Reporting Requirement	2020 Annual Report (July 1, 2019 through June 30, 2020)	
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:	1,269 676 5
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	2020 Program Plan Elements (July 1, 2019 through June 30, 2020)	Due Date / Annual Timeline — Permit Year 1	2	3	4	5	Specific Reporting Requirement	2020 Annual Report (July 1, 2019 through June 30, 2020)
B.2.h.2.a.3.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	2020 Program Plan Elements (July 1, 2019 through June 30, 2020)	Due Date / Annual Timeline — Permit Year 1	2	3	4	5	Specific Reporting Requirement	2020 Annual Report (July 1, 2019 through June 30, 2020)
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	2020 Program Plan Elements (July 1, 2019 through June 30, 2020)	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	2020 Annual Report (July 1, 2019 through June 30, 2020)
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	2020 Program Plan Elements (July 1, 2019 through June 30, 2020)	Due Date / Annual Timeline (Permit Year 1 2 3 4 5)	Specific Reporting Requirement	2020 Annual Report (July 1, 2019 through June 30, 2020)
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	2020 Program Plan Elements (July 1, 2019 through June 30, 2020)	Due Date / Annual Timeline — Permit Year 1	2	3	4	5	Specific Reporting Requirement	2020 Annual Report (July 1, 2019 through June 30, 2020)
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 ★	►	►		
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	2020 Program Plan Elements (July 1, 2019 through June 30, 2020)	Due Date / Annual Timeline (Permit Year 1	2	3	4	5)	Specific Reporting Requirement	2020 Annual Report (July 1, 2019 through June 30, 2020)
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 2020, 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 in the late winter and spring 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	2020 Program Plan Elements (July 1, 2019 through June 30, 2020)	Due Date / Annual Timeline (Permit Year 1 2 3 4 5)	Specific Reporting Requirement	2020 Annual Report (July 1, 2019 through June 30, 2020)
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 2020
Rain Garden	2 homeowners
Rain Barrels	20 distributed
Dry Wells	1 homeowners, 1 HOA
Conservation Landscaping	9 homeowners
Porous Pavers	1 homeowner

MS4 Action ID	Permit Requirement	Responsible Party	2020 Program Plan Elements (July 1, 2019 through June 30, 2020)	Due Date / Annual Timeline (Permit Year)					Specific Reporting Requirement	2020 Annual Report (July 1, 2019 through June 30, 2020)
				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">2020 Program Plan Elements (July 1, 2019 through June 30, 2020)</th><th colspan="5">Due Date / Annual Timeline</th><th rowspan="3">Specific Reporting Requirement</th><th rowspan="3">2020 Annual Report (July 1, 2019 through June 30, 2020)</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.<table><tr><th>Training Provided</th><th>Date</th><th>Number of Individuals Trained</th></tr><tr><td>Fairfax County MS4 Illicit Discharge Recognition and Reporting for County Personnel</td><td>Training is provided online through EmployeeU, and trainings are completed throughout the fiscal year.</td><td>358</td></tr></table></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.<table><tr><th>Training Provided</th><th>Date</th><th>Number of Individuals Trained</th></tr><tr><td>Fairfax County MS4 General Good Housekeeping and Pollution Prevention Training for County Personnel</td><td>Training is provided online through EmployeeU, and trainings are completed throughout the fiscal year.</td><td>455</td></tr></table></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	2020 Program Plan Elements (July 1, 2019 through June 30, 2020)	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	2020 Annual Report (July 1, 2019 through June 30, 2020)
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**: 1732
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	2020 Program Plan Elements (July 1, 2019 through June 30, 2020)	Due Date / Annual Timeline (Permit Year 1)	(Permit Year 2)	(Permit Year 3)	(Permit Year 4)	(Permit Year 5)	Specific Reporting Requirement	2020 Annual Report (July 1, 2019 through June 30, 2020)
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.*	See Appendix R9 for the Dry Weather Screening Program Report.

MS4 Action ID	Permit Requirement	Responsible Party	2020 Program Plan Elements (July 1, 2019 through June 30, 2020)	Due Date / Annual Timeline — Permit Year 1	2	3	4	5	Specific Reporting Requirement	2020 Annual Report (July 1, 2019 through June 30, 2020)
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	2020 Program Plan Elements (July 1, 2019 through June 30, 2020)	Due Date / Annual Timeline (Permit Year 1)	(Permit Year 2)	(Permit Year 3)	(Permit Year 4)	(Permit Year 5)	Specific Reporting Requirement	2020 Annual Report (July 1, 2019 through June 30, 2020)
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.*	• 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	2020 Program Plan Elements (July 1, 2019 through June 30, 2020)	Due Date / Annual Timeline — Permit Year 1	2	3	4	5	Specific Reporting Requirement	2020 Annual Report (July 1, 2019 through June 30, 2020)
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	2020 Program Plan Elements (July 1, 2019 through June 30, 2020)	Due Date / Annual Timeline — Permit Year 1	2	3	4	5	Specific Reporting Requirement	2020 Annual Report (July 1, 2019 through June 30, 2020)
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, 2019.
	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	2020 Program Plan Elements (July 1, 2019 through June 30, 2020)	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	2020 Annual Report (July 1, 2019 through June 30, 2020)
	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	2020 Program Plan Elements (July 1, 2019 through June 30, 2020)	Due Date / Annual Timeline — Permit Year 1	2	3	4	5	Specific Reporting Requirement	2020 Annual Report (July 1, 2019 through June 30, 2020)
	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	2020 Program Plan Elements (July 1, 2019 through June 30, 2020)	Due Date / Annual Timeline — Permit Year 1	2	3	4	5	Specific Reporting Requirement	2020 Annual Report (July 1, 2019 through June 30, 2020)
	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 2020. 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	2020 Program Plan Elements (July 1, 2019 through June 30, 2020)	Due Date / Annual Timeline — Permit Year 1	2	3	4	5	Specific Reporting Requirement	2020 Annual Report (July 1, 2019 through June 30, 2020)
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, 2020, the county has achieved the following reductions: **TN (lbs/year)** 75,765.98 — **TP (lbs/year)** 14,245.70 — **TSS (lbs/year)** 4,973,221.52 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	2020 Program Plan Elements (July 1, 2019 through June 30, 2020)	Due Date / Annual Timeline (Permit Year 1	2	3	4	5)	Specific Reporting Requirement	2020 Annual Report (July 1, 2019 through June 30, 2020)
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	2020 Program Plan Elements (July 1, 2019 through June 30, 2020)	Due Date / Annual Timeline — Permit Year 1	2	3	4	5	Specific Reporting Requirement	2020 Annual Report (July 1, 2019 through June 30, 2020)
	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, 2019 through June 30, 2020. • 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	2020 Program Plan Elements (July 1, 2019 through June 30, 2020)	Due Date / Annual Timeline — Permit Year 1	2	3	4	5	Specific Reporting Requirement	2020 Annual Report (July 1, 2019 through June 30, 2020)
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 2020 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
9-30-2020

Agency	Permit Section	Responsibilities
Clean Fairfax Council, Inc. (CFC)	I.B.2.j)1)f)	Public Education: litter prevention
Clean Water Partners	I.B.2.j)1)f	Public Education: regional campaign
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.d)	Pesticides, Herbicides and Fertilizers: develop and implement NMPs as required; track and report Integrated Pest Management Plans
	I.B.2.i)	County Facilities: implement HP-SWPPPs at identified facilities; ensure FCPA properties have permit-required storm drain markers
	I.B.2.j)1)	Public Education: golf courses and general education needs.
	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

Agency	Permit Section	Responsibilities
	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
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
Office of the County Attorney	I.A.3	Legal Authority
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

Agency	Permit Section	Responsibilities
	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
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 2020 MS4 Program Plan and Annual Report

Appendix P2

Summary of Potential Stormwater Projects for Consideration of Implementation

VSMP Permit Number VA0088587
9-30-2020

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 2020 MS4 Program Plan and Annual Report

Appendix P3

More Stringent Stormwater and Erosion and Sediment Control Legal Authorities

VSMP Permit Number VA0088587
9-30-2020

			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 2020 MS4 Program Plan and Annual Report

Appendix P4

Stormwater Ordinance Stringency Table

VSMP Permit Number VA0088587
9-30-2020

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 2020 MS4 Program Plan and Annual Report

Appendix P5

Roadways SOP's - Street Sweeping

VSMP Permit Number VA0088587
9-30-2020

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

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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

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Appendix P7

Roadways SOP's - Material Storage

VSMP Permit Number VA0088587
9-30-2020

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

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Fairfax County 2020 MS4 Program Plan and Annual Report

Appendix P8

Roadways SOP's - Vehicle Maintenance

VSMP Permit Number VA0088587
9-30-2020

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

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Fairfax County 2020 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
9-30-2020

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.

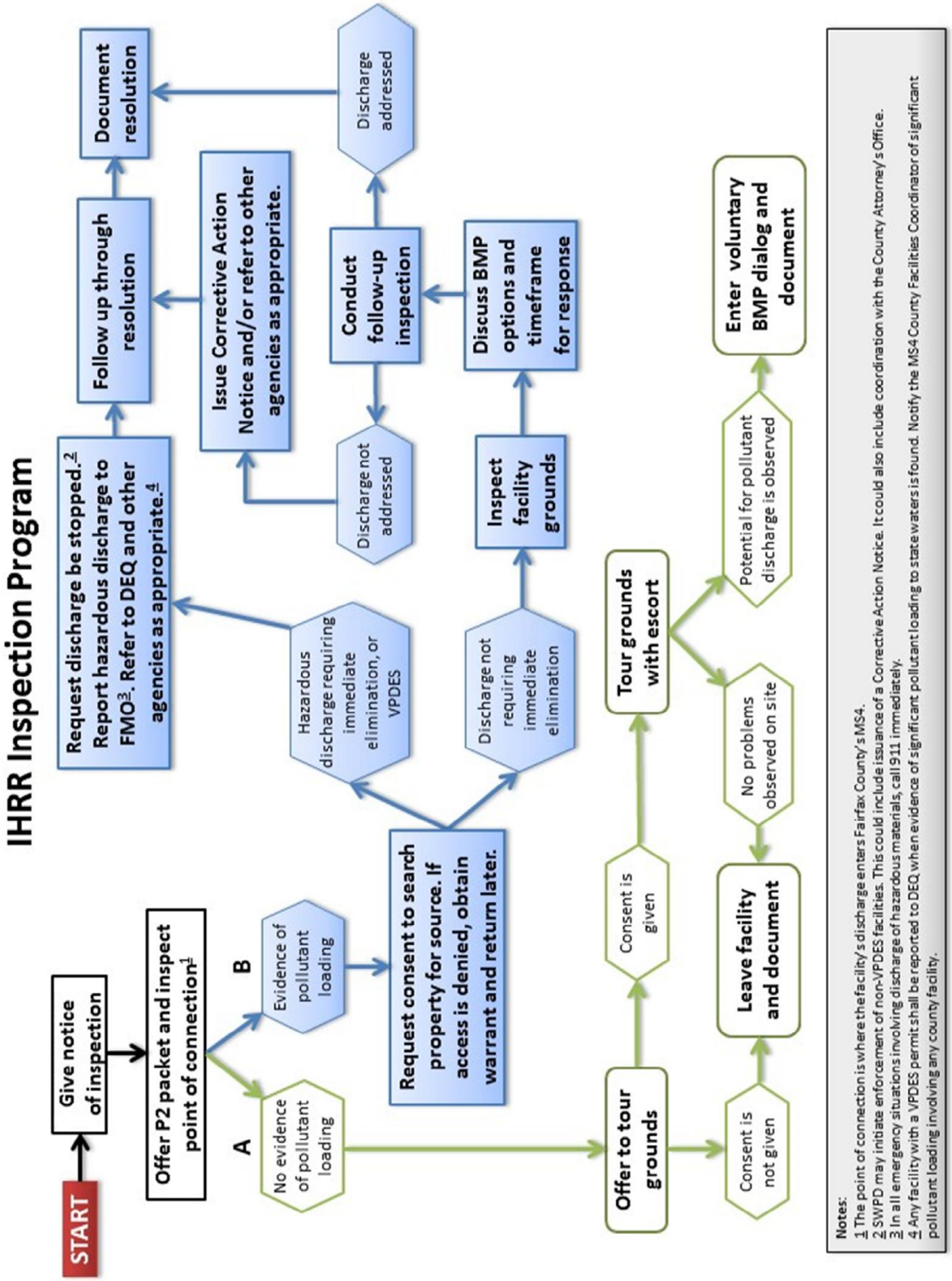


Figure 1: IHRR Program Inspection Process

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

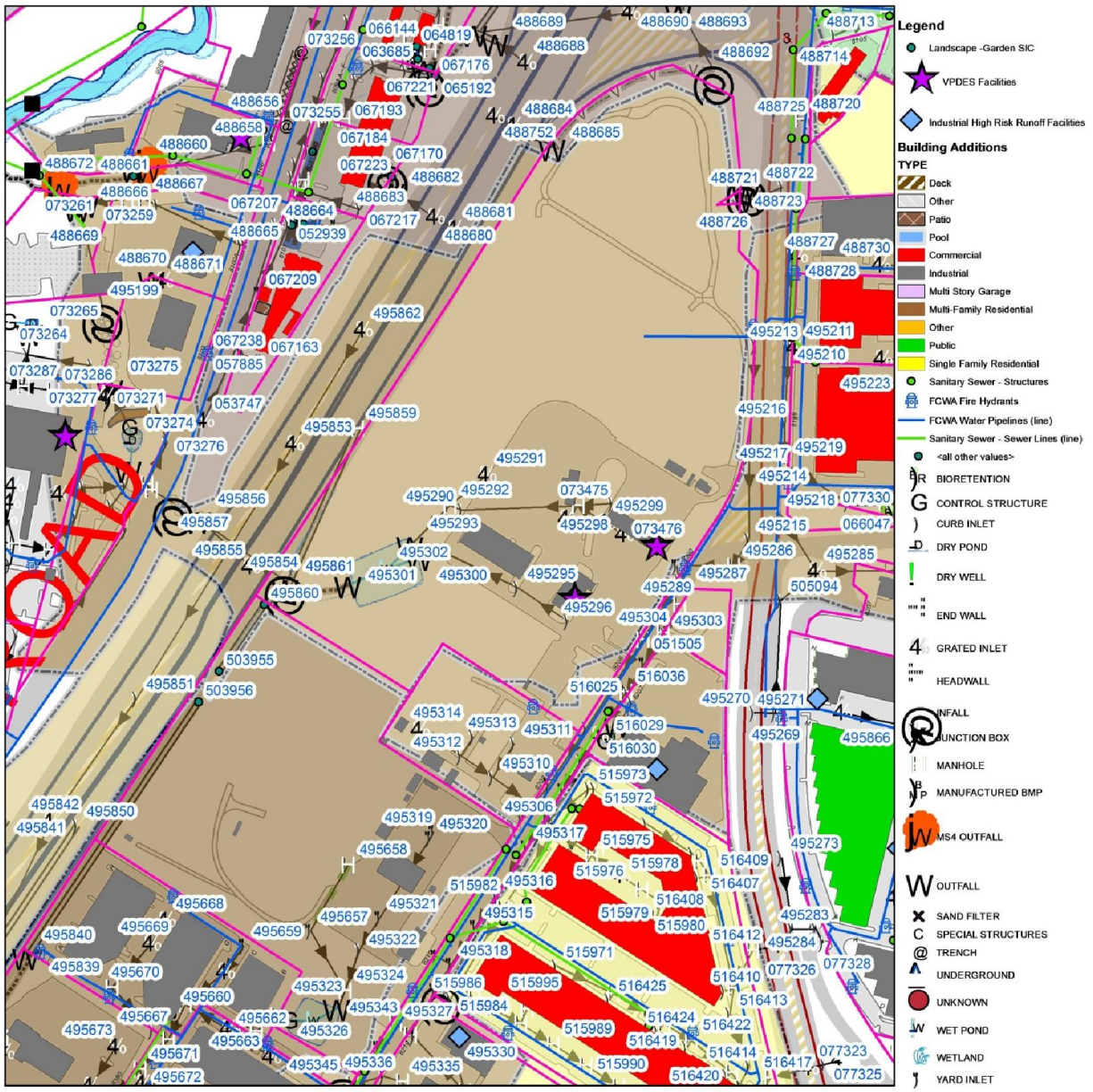
cc: [Inspector name], Code Specialist II, Watershed Planning and Assessment Branch, Stormwater Planning Division, Department of Public Works and Environmental Services

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 2020 MS4 Program Plan and Annual Report

Appendix P10

Post-Construction Stormwater Inspection and Maintenance Policies and Procedures

VSMP Permit Number VA0088587
9-30-2020

Post-Construction Stormwater Inspection and Maintenance - Policies and Procedures -

January 2016
Revised April 2017
Revised April 2020 -

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 management facilities (SWM) and Best Management Practices (BMPs). With approximately 7,400 stormwater management facilities 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 one-third of the noted stormwater facility inventory, which primarily includes dry ponds serving residential areas. These facilities are referred to as "public facilities." The remaining two-thirds of the stormwater management facility 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 SWM and BMP 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 stormwater management facilities. 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), which the County recently amended and updated to comply with Virginia's updated stormwater management law and regulations (VA Code §62.1-44.15:24, et seq. and 9VAC870); 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 stormwater management facilities. 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 stormwater management facilities 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 stormwater management facility 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 stormwater management facilities 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 stormwater management facilities 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

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

maintenance is performed on the following low impact development (LID) facilities: tree filters, bioretention facilities, green roofs, permeable pavement, 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. LID facility routine maintenance includes trash removal, sediment removal, and removal/trimming of overgrown and unwanted vegetation. 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 stormwater management facility 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 Wetlands	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

Facility Type	Routine Maintenance Frequency	Inspection Frequency
Underground Storage/Detention	Not Applicable	Annual
Vegetated Filter Strip	Not Applicable	Annual
Vegetated Swale	Annual (4x/year)	Biennial
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).

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

Most public stormwater management facilities 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

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 stormwater management facilities 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 stormwater management facilities 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 stormwater management facility 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 and Tax Map data, property ownership information, PMA's, 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 stormwater management facility 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 stormwater management facility 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 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 legal action to obtain compliance in an action for 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 SWM and BMP facility 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 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 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:

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	Current weather conditions?		
③⊙⊗		Facility Labeling			

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
SCORE	PHOTO	DESCRIPTION		Request Photos from Owner
①⊙⊗		Overall Facility Access		Contact MSMD
①②③⊙⊗		Component Access: _____		Other:_____

Amended Soils Area			
SCORE	PHOTO	DESCRIPTION	COMMENTS / DIMENSIONS
①⊙⊗		Impervious Area Encroachments *Description / Area:*	
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, Call to Re (703-877-2800: Inspection, Maint., & Enforc. Section)	

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	Current weather conditions?		
③⊙⊗		Facility Labeling			

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
	Stuck / Broken Cover	Request Photos from Owner
	Equipment Needed: ____	Contact MSMD
	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 *(20% < ③ < 40% < ② < 60% < ①)*	Observed:	Specified:		
①②③⊙⊗		Grass / Groundcover Missing *(20% < ③<40% < ②<60% < ①)*	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, Call to Re (703-877-2800: Inspection, Maint., & Enforc. Section)	

INSPECTOR COMMENTS

A-3: Cistern/Rain Barrel Inspection Form

Cistern / Rain Barrel Inspection Form

Inspector:

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

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

Weather Conditions

Last Rainfall	Date:	Amount:
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 Gate / Fence	Coordinate with Owner
Heavy Vegetation	Return for Re-inspection
Stuck / Broken Cover	Request Photos from Owner
Equipment Needed: _____	Contact MSMD
Other: _____	Other: _____

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, Call to Re (703-877-2800: Inspection, Maint., & Enforc. Section)	

INSPECTOR COMMENTS

A-4: Pond/Wetland Inspection Form

Pond / Wetland Inspection Form

Fairfax County Maintenance and Stormwater Management Division

Inspector:
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:
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 Gate / Fence	Coordinate with Owner
Heavy Vegetation	Return for Re-inspection
Stuck / Broken Cover	Request Photos from Owner
Equipment Needed: _____	Contact MSMD
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 (① < 25% < ② < 75% < ③)	
①②③☉⊗		Damage / Deterioration Description:	
		Top Trash Rack and Anti-Vortex Plate	
① ☉⊗		Pad Lock Missing	
①②③☉⊗		Blockage (① < 25% < ② < 75% < ③)	
①②③☉⊗		Damage / Deterioration Description:	
		Riser Interior	
①②③☉⊗		Trash / Debris / Sediment Description / Amount:	
①②③☉⊗		Ladder / Steps Condition	
①②③☉⊗		Manhole Condition	

			Principal Spillway Pipe, Upstream End	1	2	3	4	5	6
①②③☉⊗			Blockage (① < 25% < ② < 75% < ③)						
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☉⊗		Animal Holes								
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 (① < 25% < ② < 75% < ③)								
①②③☉⊗		Damage / Deterioration at Emergency Spillway Description:								

Outfall Structure / PSP Downstream End

Material: Size: End Type: Pipe Total:

SCORE	PHOTO	DESCRIPTION	1	2	3	4	5	6
①②③☉⊗		Blockage (① < 25% < ② < 75% < ③)						
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
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:
①②③⊙⊗		Submergent Vegetation	Observed:	Specified:
①②③⊙⊗		Emergent Vegetation	Observed:	Specified:
①②③⊙⊗		Undesired Vegetation (Cattails / Phragmites)		
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, Call to Re (703-877-2800: Inspection, Maint., & Enforc. Section)	

INSPECTOR COMMENTS

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:
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:
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⊙⊗		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 (20% < ③ < 40% < ② < 60% < ①)	Observed:	Specified:	
①②③⊙⊗		Grass / Groundcover Missing (20% < ③<40% < ②<60% < ①)	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, Call to Re (703-877-2800: Inspection, Maint., & Enforc. Section)	

INSPECTOR COMMENTS

A-6: Manufactured BMP Inspection Form

Manufactured BMP Inspection Form

Inspector:

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

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

Weather Conditions

Last Rainfall Date: Amount:

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 Gate / Fence	Coordinate with Owner
Parked Cars	Return for Re-inspection
Stuck / Broken Cover	Request Photos from Owner
Equipment Needed: _____	Contact MSMD
Other: _____	Other: _____

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
		Oil/Grit Separator	
①②③☉⊗		CMP Elbow Condition	
①②③☉⊗		Trash Rack Condition	
		StormFilter	
①②③☉⊗		StormGate Condition	*(Inspect the StormGate structure as it's own 'Chamber' below.)*
①②③☉⊗		Flow Spreader / Dissipator Condition	*(at Both ends of the Cartridge Bay)*
①	☉⊗	Number of Cartridges Inconsistent with Plans	# Observed / # Specified:
①②③☉⊗		Cartridge Condition *Description:*	
		Vortechs Hydrodynamic Separator	
①②③☉⊗		Swirl Chamber	
①②③☉⊗		Orifice Plates for High and Low Flows	
		Stormceptor	
①②③☉⊗		Fiberglass Insert	
①②③☉⊗		Weir	
①②③☉⊗		Inspection Port	
①②③☉⊗		Safety Grate (optional)	
		BaySaver	
①②③☉⊗		Tee Pipes	
①②③☉⊗		Bypass Plate	
		Downstream Defender	
①②③☉⊗		Cylindrical Baffle	

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

Chamber 1

Structure # on Plan: Chamber Name on Plan: Label on Sketch:

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 2

Structure # on Plan: Chamber Name on Plan: Label on Sketch:

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:	

Manufactured BMP Inspection Form — Page 2

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

Chamber 3

Structure # on Plan		Chamber Name on Plan		Label on Sketch
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

Structure # on Plan		Chamber Name on Plan		Label on Sketch
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

Structure # on Plan		Chamber Name on Plan		Label on Sketch
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, Call to Re (703-877-2800: Inspection, Maint., & Enforc. Section)	

INSPECTOR COMMENTS

A-7: Parking Lot Detention Inspection Form

Parking Lot Detention Inspection Form

Inspector:

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	Current weather conditions?		
③⊙⊗		Facility Labeling			

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
⊙⊗		Overall Facility Access	Equipment Needed:	Contact MSMD
①②③⊙⊗		Component Access:	Other:	Other:

Control Structure				
		Orifice Size:	Emegency 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, Call to Re (703-877-2800: Inspection, Maint., & Enforc. Section)	

INSPECTOR COMMENTS

A-8: Permeable Pavement Inspection Form

Permeable Pavement Inspection Form

Fairfax County Maintenance and Stormwater Management Division

Inspector: Cert ☉
Inspector: Cert ☉
Date:

Site ID: Facility ID: Facility Name:
Address: 9107 Horner Ct. 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: Filterra

Signs

SCORE	PHOTO	DESCRIPTION
①☉⊗		Facility Sign
③☉⊗		Facility Labeling

Weather Conditions

Last Rainfall Date: Amount:
Current weather conditions?

Accessibility

Access Comments:
New Access Comments for EAM:

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

SCORE	PHOTO	DESCRIPTION
①☉⊗		Overall Facility Access
①②③☉⊗		Component Access:

Parking Lot

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

Permeable Pavement

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:	
		Observation Well / Cleanout (if applicable)	
①☉⊗		Missing	
①☉⊗		Cap Missing / Stuck	
①☉⊗		Water / Sediment Observed in Well	
①②③☉⊗		Damaged	
①②③☉⊗		Other:	

Emergency Overflow / Outfall Structure

Emegency 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:*	

Other

SCORE	PHOTO	DESCRIPTION	LOCATION
①②③☉⊗		Encroachments	
①②③☉⊗		Modifications	
①②③☉⊗		Mosquito Habitat	
①②③☉⊗		Evidence of Possible Illicit Discharge, Call to Report (703-877-2800: Inspection, Maint., & Enforc. Section)	

INSPECTOR COMMENTS

A-9: Rooftop Disconnection Inspection Form

Rooftop Disconnection Inspection Form

Inspector:

Fairfax County Maintenance and Stormwater Management Division

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:
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
Other:_____	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, Call to Re (703-877-2800: Inspection, Maint., & Enforc. Section)	

INSPECTOR COMMENTS

A-10: Reforestation Inspection Form

Reforestation 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	Current weather conditions?		
③⊙⊗		Facility Labeling			

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
SCORE	PHOTO	DESCRIPTION		Request Photos from Owner
① ⊙⊗		Overall Facility Access		Contact MSMD
①②③⊙⊗		Component Access: _____		Other:_____

Reforested Area					
SCORE	PHOTO	DESCRIPTION	COMMENTS / DIMENSIONS		
① ⊙⊗		Reforestation Area	Observed:	Specified:	
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
①②③⊙⊗		Shrubs Missing *(20% < ③ < 40% < ② < 60% < ①)*	Observed:	Specified:	Material Coverage:
①②③⊙⊗		Grass / Groundcover Missing *(20% < ③ < 40% < ② < 60% < ①)*	Observed:	Specified:	
①②③⊙⊗		Unhealthy / Damaged			
①②③⊙⊗		Undesired / Invasive Vegetation			
①②③⊙⊗		Other: *Description:*			

Other			
SCORE	PHOTO	DESCRIPTION	LOCATION
①②③⊙⊗		Encroachments	
①②③⊙⊗		Modifications	
①②③⊙⊗		Mosquito Habitat	
①②③⊙⊗		Evidence of Possible Illicit Discharge, Call to Re (703-877-2800: Inspection, Maint., & Enforc. Section)	

INSPECTOR COMMENTS

A-11: Rooftop Detention Inspection Form

Rooftop Detention Inspection Form

Inspector:

Fairfax County Maintenance and Stormwater Management Division

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:
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 (③ < 25% < ② < 75% < ①)												
①②③⊙⊗		Damage / Deterioration												
①②③⊙⊗		Unapproved Alteration / Setting												
①②③⊙⊗		Other: *Description:*												
		Debris Cage												
①	⊙⊗	Missing												
①②③⊙⊗		Blockage (③ < 25% < ② < 75% < ①)												
①②③⊙⊗		Damage / Deterioration												
①②③⊙⊗		Other: *Description:*												
		Roof Drain Pipe Pipe Diameter:												
①②③⊙⊗		Blockage (③ < 25% < ② < 75% < ①)												
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 (③ < 25% < ② < 75% < ①)												
①②③⊙⊗		Damage / Deterioration												
①②③⊙⊗		Other: *Description:*												
		Detention Devices at Scuppers (When Applicable)												
①	⊙⊗	Missing												
①②③⊙⊗		Blockage (③ < 25% < ② < 75% < ①)												
①②③⊙⊗		Damage / Deterioration												
①②③⊙⊗		Unapproved Alteration												
①②③⊙⊗		Other: *Description:*												
		Emergency Overflow Summary					Plans Approved:							
		Number of Scuppers:	Observed:						Specified:					
①	⊙⊗	Insufficient Emergency Overflow *(Note Plan Date)*												

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, Call to Re (703-877-2800: Inspection, Maint., & Enforc. Section)	

INSPECTOR COMMENTS

A-12: Sand Filter Inspection Form

Sand Filter Inspection Form

Fairfax County Maintenance and Stormwater Management Division

Inspector:

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:
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
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 *(ⓓ < 25% < ⓒ < 75% < ⓐ)*	
①②③⊙⊗		Damage / Deterioration	
		Inflows	
①②③⊙⊗		Spalling / Deterioration	
①②③⊙⊗		Separation / Misalignment	
①②③⊙⊗		Blockage *(ⓓ < 25% < ⓒ < 75% < ⓐ)*	
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 Material: 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, Call to Re (703-877-2800: Inspection, Maint., & Enforc. Section)	

INSPECTOR COMMENTS

A-13: Tree Filter Inspection Form

Tree Filter Inspection Form

Fairfax County Maintenance and Stormwater Management Division

Inspector:

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	Current weather conditions?		
③⊙⊗		Facility Labeling			

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			
			Emegency 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, Call to Re (703-877-2800: Inspection, Maint., & Enforc. Section)	

INSPECTOR COMMENTS

A-14: Infiltration Trench Inspection Form

Infilitration Trench Inspection Form

Fairfax County Maintenance and Stormwater Management Division

Inspector:

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	Current weather conditions?		
③⊙⊗		Facility Labeling			

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
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		
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 *(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 / 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, Call to Re (703-877-2800: Inspection, Maint., & Enforc. Section)	

INSPECTOR COMMENTS

A-15: Underground Detention Inspection Form

Underground Detention Inspection Form

Inspector:

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	Current weather conditions?		
③⊙⊗		Facility Labeling			

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, Call to Re (703-877-2800: Inspection, Maint., & Enforc. Section)	

INSPECTOR COMMENTS

A-16: Vegetated Filter Strip Inspection Form

Vegetated Filter Strip 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:
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: _____

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

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 (20% < ③ < 40% < ② < 60% < ①)	Observed:	Specified:	
①②③⊙⊗	Grass / Groundcover Missing (20% < ③ <40% < ② <60% < ①)	Observed:	Specified:	
①②③⊙⊗	Unhealthy / Damaged			
①②③⊙⊗	Overgrown / Invasive Vegetation (Mow twice/year or more.)			
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:	

Other

SCORE	PHOTO	DESCRIPTION	LOCATION
①②③⊙⊗		Encroachments	
①②③⊙⊗		Modifications	
①②③⊙⊗		Mosquito Habitat	
①②③⊙⊗		Evidence of Possible Illicit Discharge, Call to Re (703-877-2800: Inspection, Maint., & Enforc. Section)	

INSPECTOR COMMENTS

A-17: Vegetated Swale Inspection Form

Vegetated Swale 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:
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
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⊙⊗		Condition of Vegetated Cover	
①②③⊙⊗		Unauthorized Planting *Description:*	
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% < ③ < 40% < ② < 60% < ①)*	Observed:	Specified:	Total % of Plant Material Coverage:
①②③⊙⊗		Shrubs Missing *(20% < ③ < 40% < ② < 60% < ①)*	Observed:	Specified:	
①②③⊙⊗		Grass / Groundcover Missing *(20%< ③<40%< ②<60%< ①)*	Observed:	Specified:	
①②③⊙⊗		Unhealthy / Damaged			
①②③⊙⊗		Overgrown / Invasive Vegetation			
①②③⊙⊗		Other:			

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:						

Pre-Treatment / Energy Dissipators

Type(s): Check dams / 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:	

Underdrain(s)

SCORE	PHOTO	DESCRIPTION	COMMENTS / DIMENSIONS
		Specified on Approved Plans?	
①	⊙⊗	Missing	
①②③⊙⊗		Blockage *(③ < 25% < ② < 75% < ①)*	
①②③⊙⊗		Spalling / Deterioration	
①②③⊙⊗		Separation / Misaligned Joints	
①②③⊙⊗		Other:	

Vegetated Swale Inspection Form — Page 2

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

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, Call to Re (703-877-2800: Inspection, Maint., & Enforc. Section)	

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), a tax map, 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

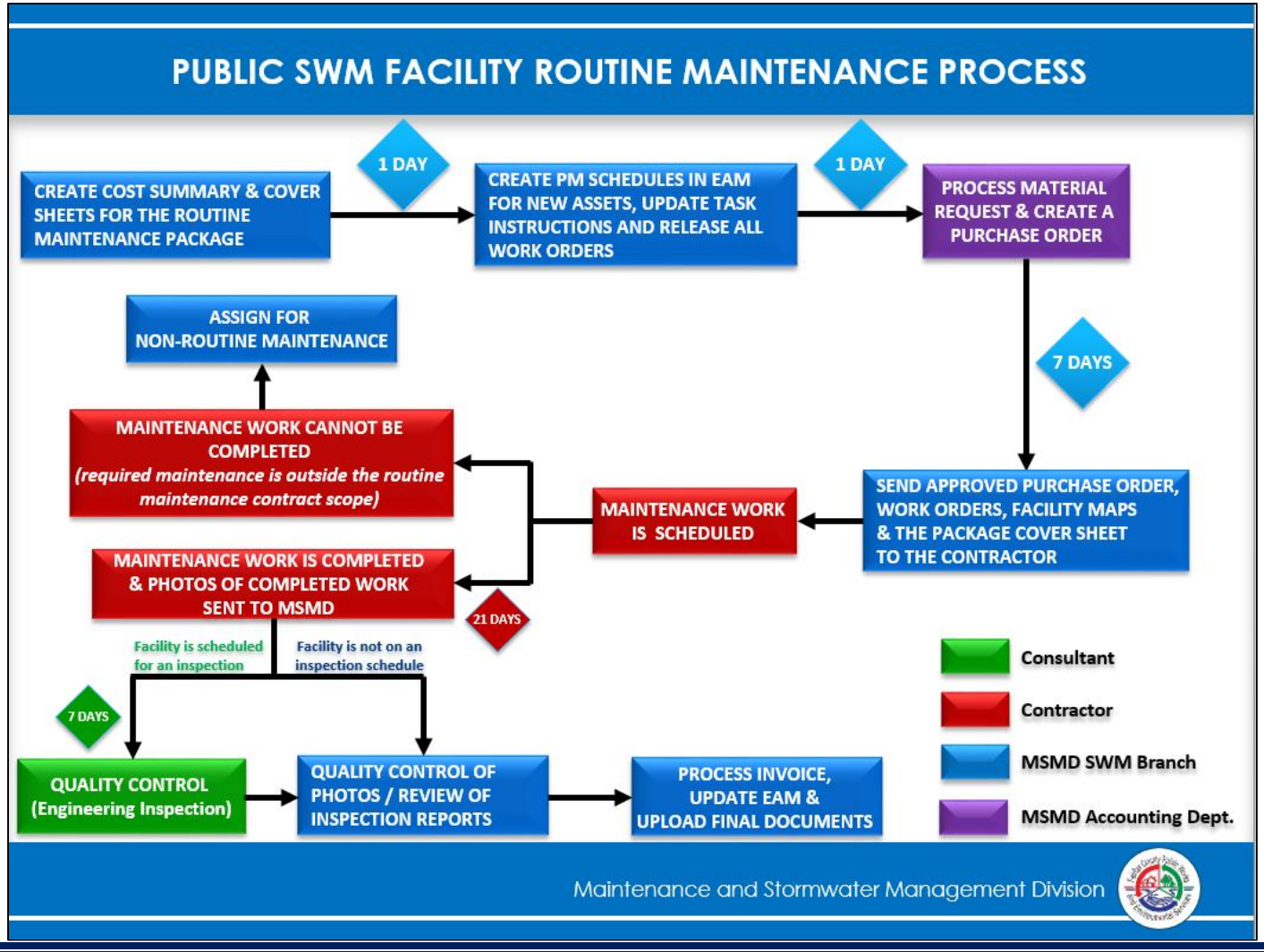
_____ _____ _____
Signature (Owner or Owner's Agent) Title Date

Legislation/Regulations/Permitting/Guidelines:

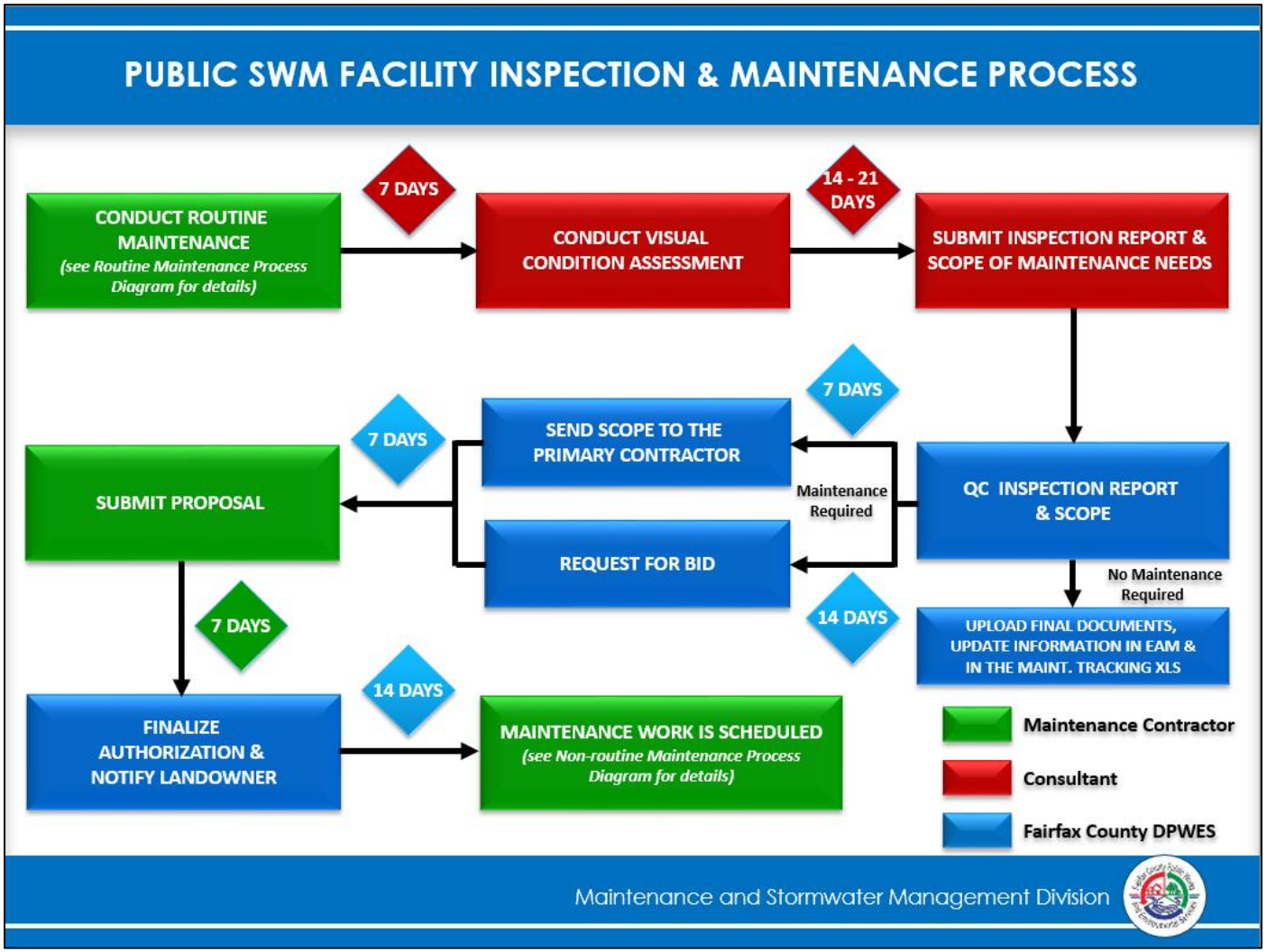
- Fairfax County Codified Ordinances – Chapters 104, 112, 118 & 124
- Fairfax County Public Facilities Manual (PFM), Chapter 6: Storm Drainage
- Virginia Stormwater Management Program (VSMP) (§9VAC25-870)
- Virginia Chesapeake Bay Preservation Act (§9VAC25-830)
- Federal Clean Water Act/Section 402-(P) 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

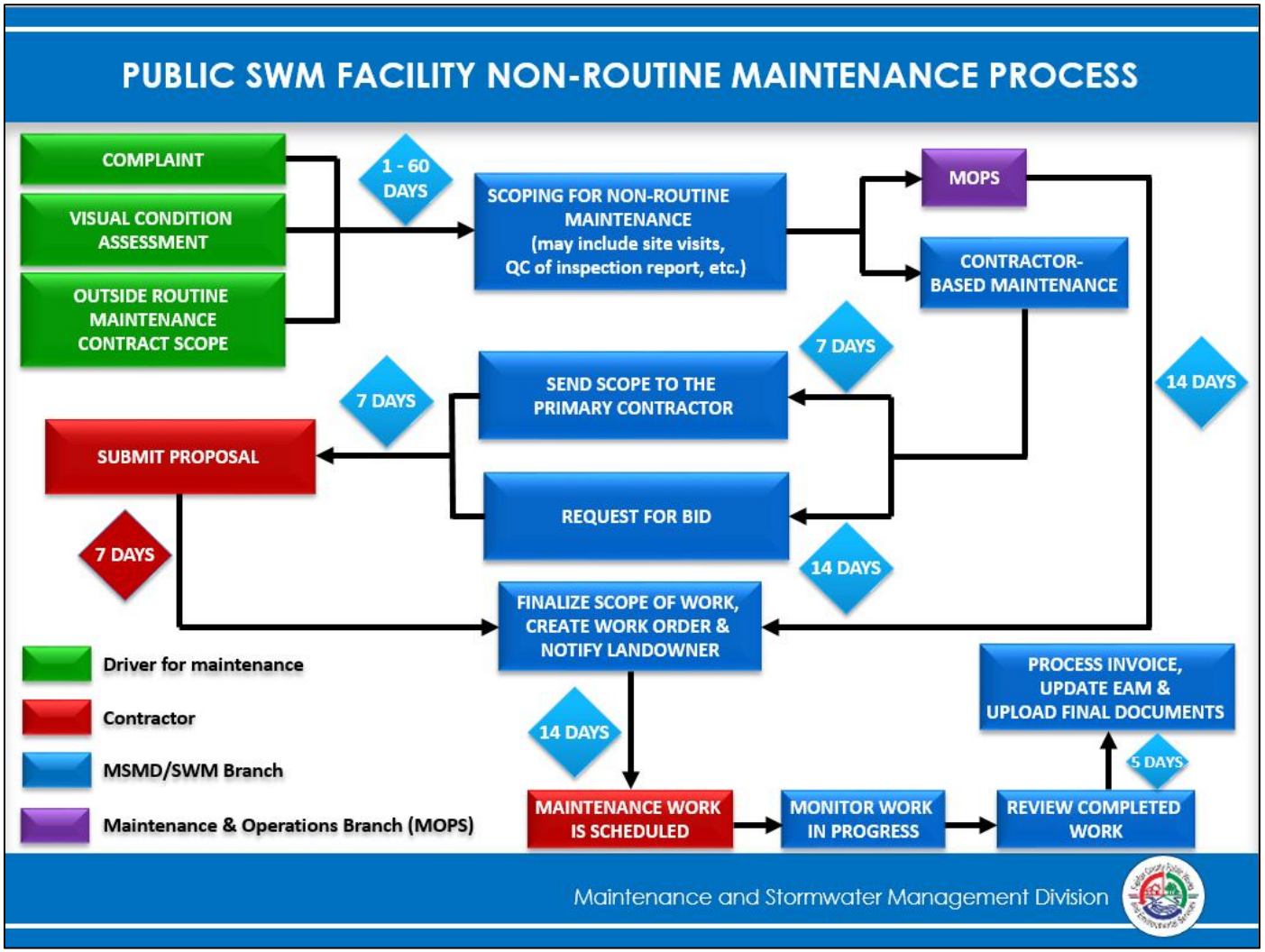
C-1: Public SWM Facilities-Routine Maintenance



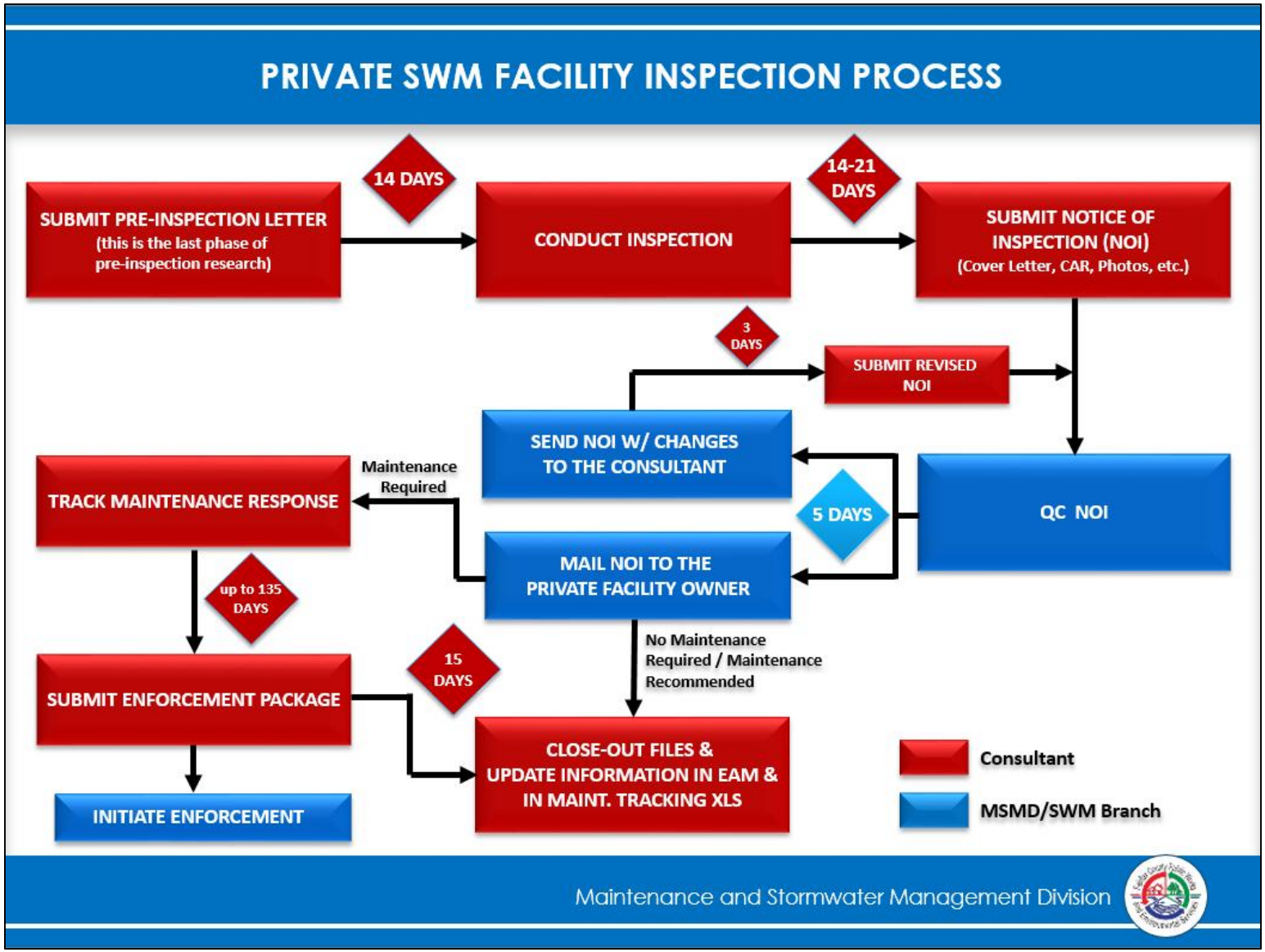
C-2: Public SWM Facilities-Inspection and Maintenance



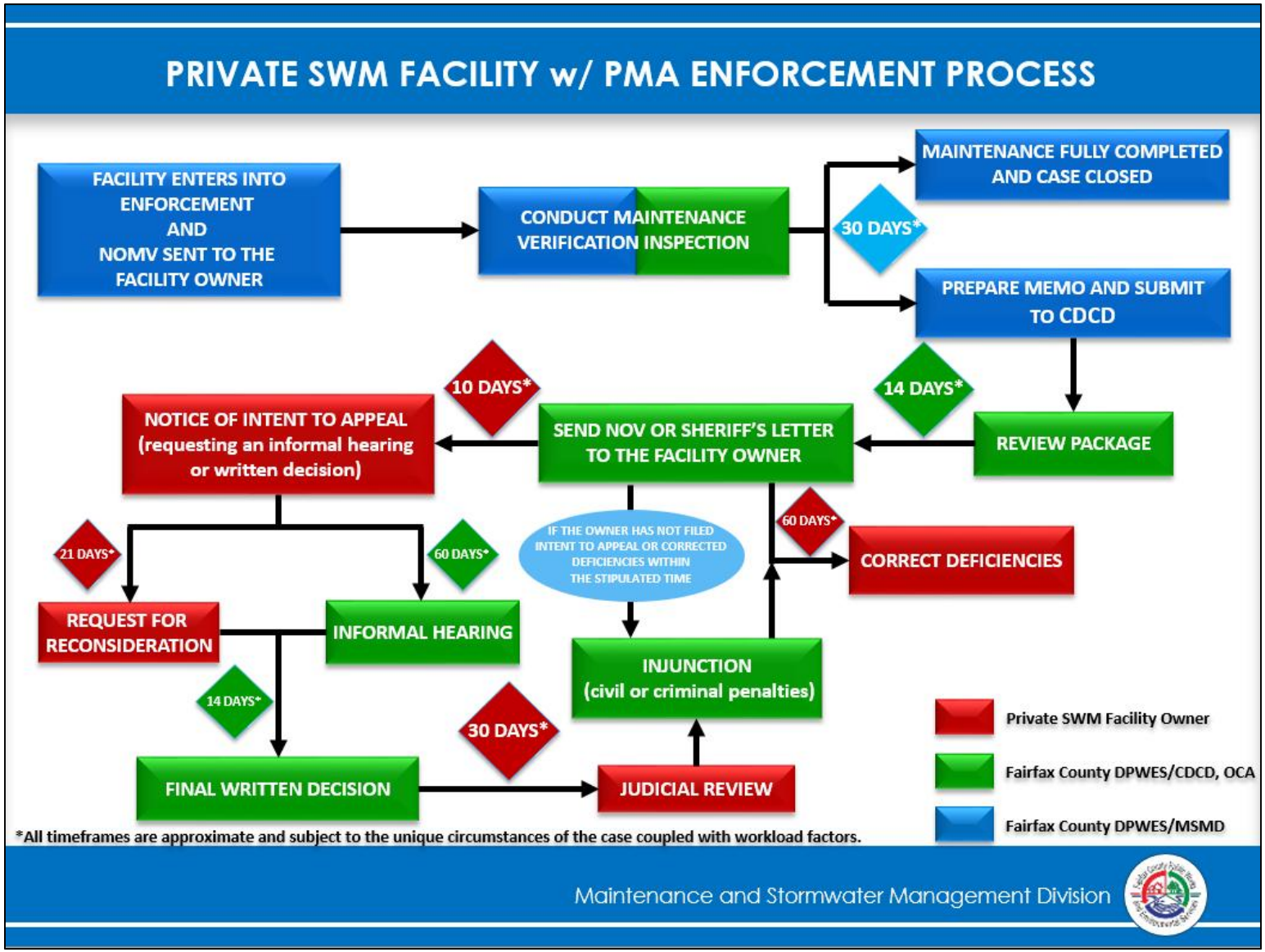
C-3: Public SWM Facilities-Non-routine Maintenance



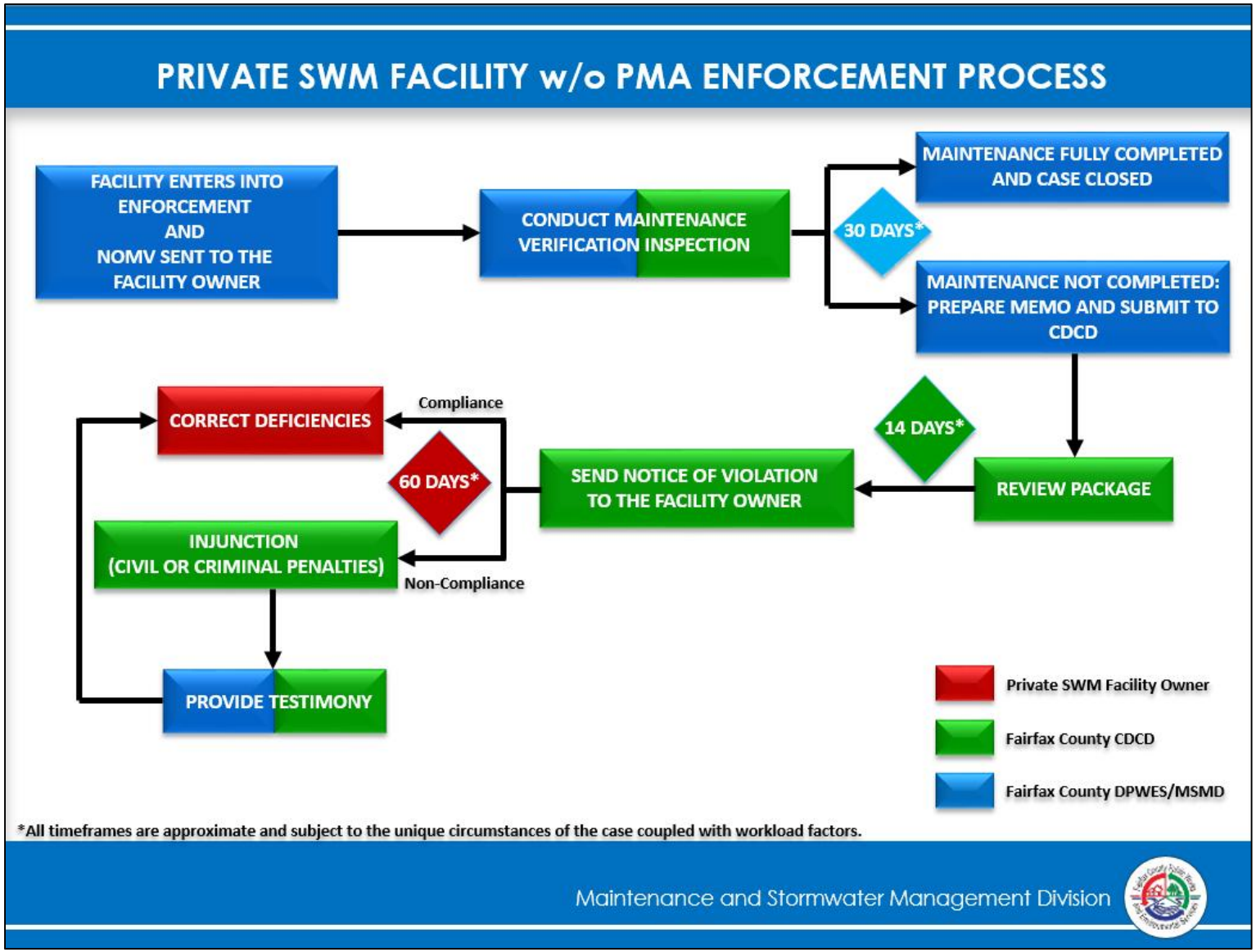
C-4: Private SWM Facilities-Inspection



C-5: Private SWM Facilities-Enforcement with PMA



C-6: Private SWM Facilities-Enforcement without PMA



Field Inspections and Reporting Policies and Procedures

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1 Introduction

Field inspections and reporting compiles information about the operational health and maintenance needs for a stormwater facility. 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 stormwater management (SWM) or best management practice (BMP) 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 stormwater 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 stormwater 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 stormwater 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
Gas monitor (meter)	1	Detect potentially hazardous atmospheric conditions inside storm structures
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 stormwater 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 stormwater facility 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 stormwater 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 stormwater facility 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/.

Gas meter readings (oxygen (O_2), carbon monoxide (CO), hydrogen sulfide (H_2S) and combustible gases (LEL)) must be taken every time a manhole, Bilco door, or other confined space access port is opened, both before and after opening the port. The gas meter, part of the required safety equipment, must be kept in good working order via regular calibration and "bump tests" as called for by the manufacturer. Each team should understand how to use their gas meter and how to properly report its readings. The current form for recording the gas meter readings, called "Non-entry Confined Space Photographic Assessment," is available at *J:\STW\SWM_Branch_Assets\Main\Private \Templates.* A separate form should be used for each facility; the facility ID should be included on the form. Structure ID's from the facility plans may be used in place of the STMN / STML StormNet IDs. **If any gas readings are outside the acceptable range, note the readings and notify your supervisor and MSMD immediately**.

Photographs may be taken in confined spaces by attaching the camera to a standard monopole or longer painter's pole with camera attachment only after normal atmospheric readings have been verified.

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 stormwater 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 stormwater 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. Stormwater 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 stormwater 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 stormwater 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 stormwater 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 Stormwater Management Basic and Stormwater Management Inspector courses 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 stormwater 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. Remember to take and record gas readings each time a manhole or Bilco door is opened.
7. Note and score any maintenance items on the inspection form.
8. 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.
9. For public facilities, take any additional measurements needed to generate the work order, as specified in the Field Measurements and Work Order Preparation document.
10. 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.

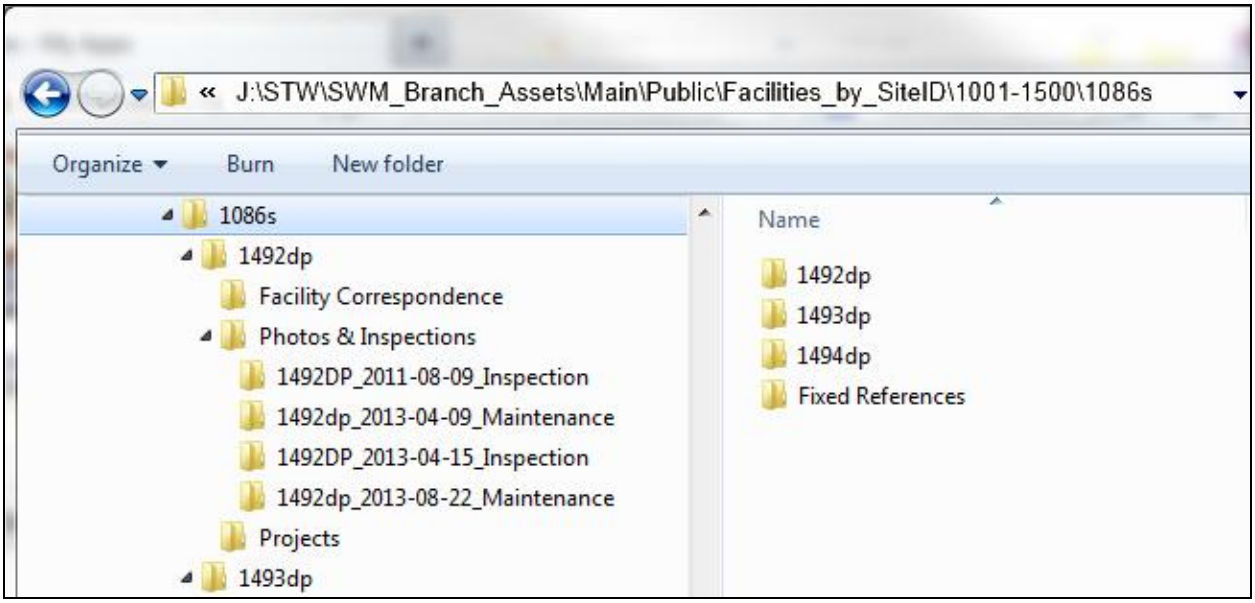


Figure 1-Illustration of folder naming conventions for public inspections, using facility 1086S / 1492DP as an example.

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.

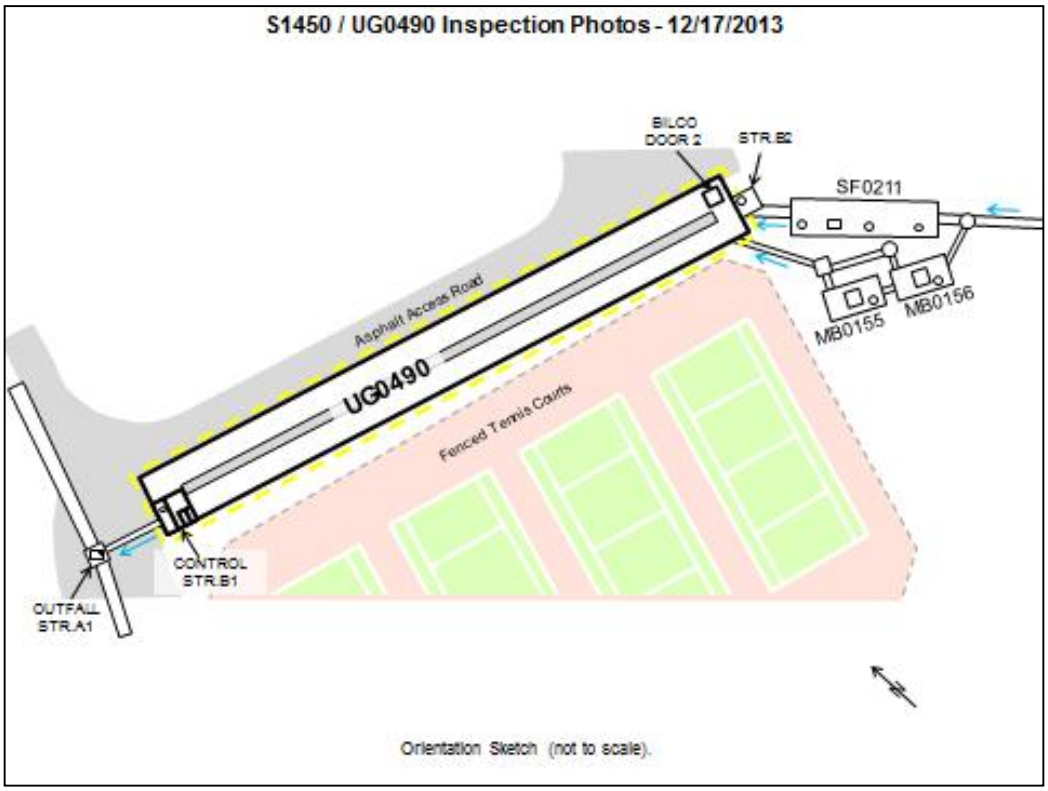


Figure 0-Orientation sketch example generated with the PowerPoint sketch tools.

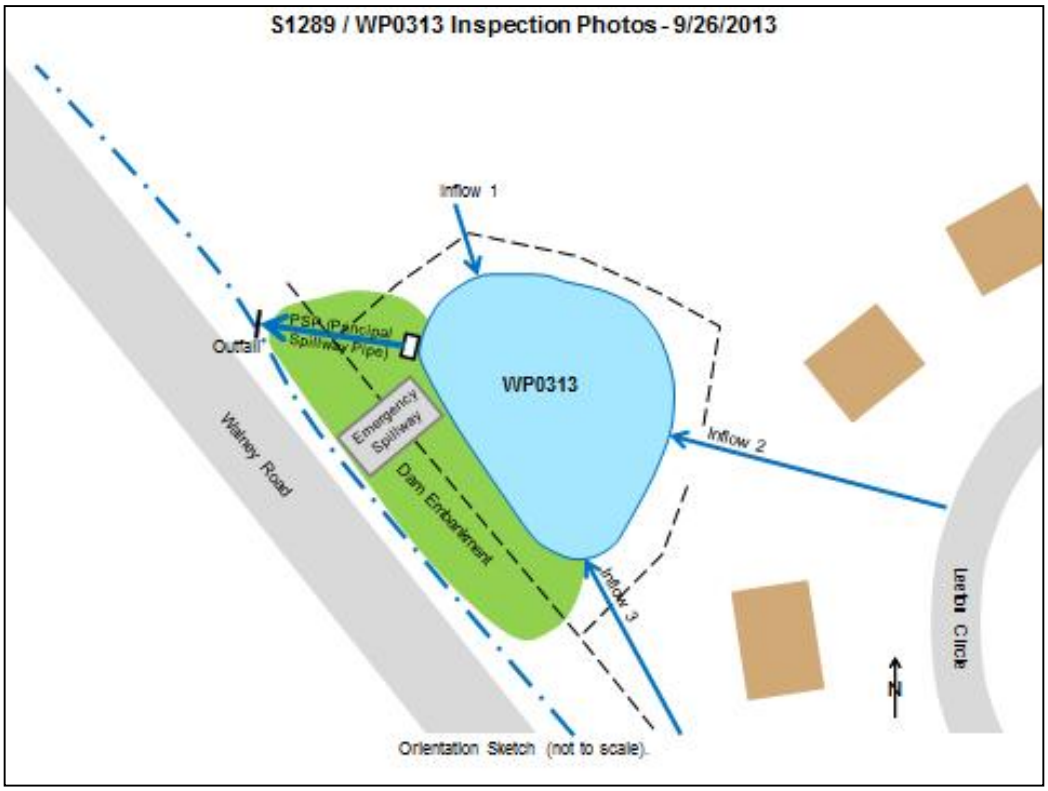


Figure 3-Orientation sketch example generated with the PowerPoint sketch tools.

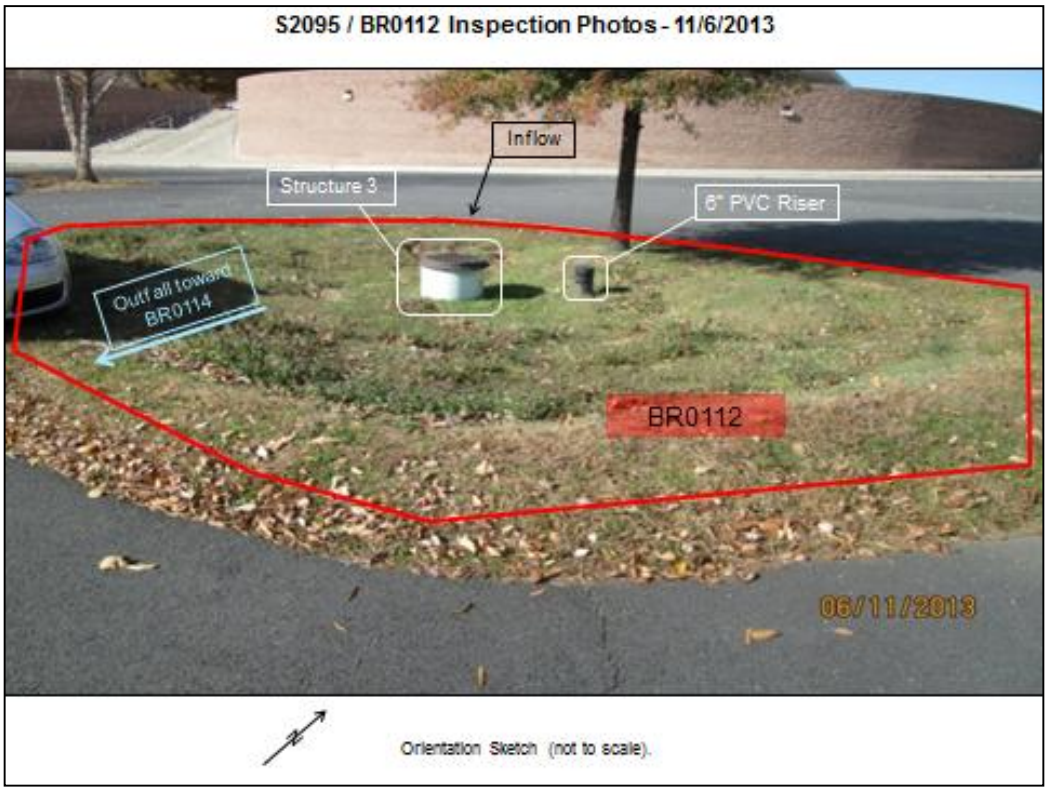


Figure 4-Orientation sketch example using an overall photo of the facility.

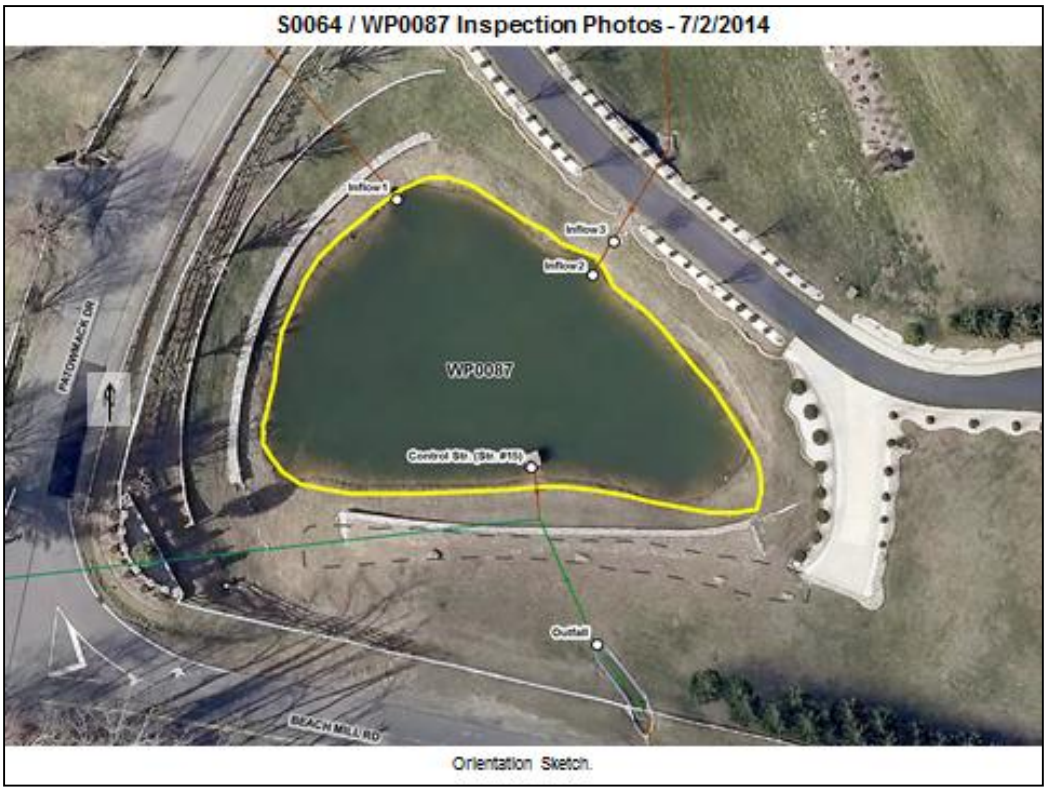


Figure 1-Orientation sketch example generated from GIS.

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

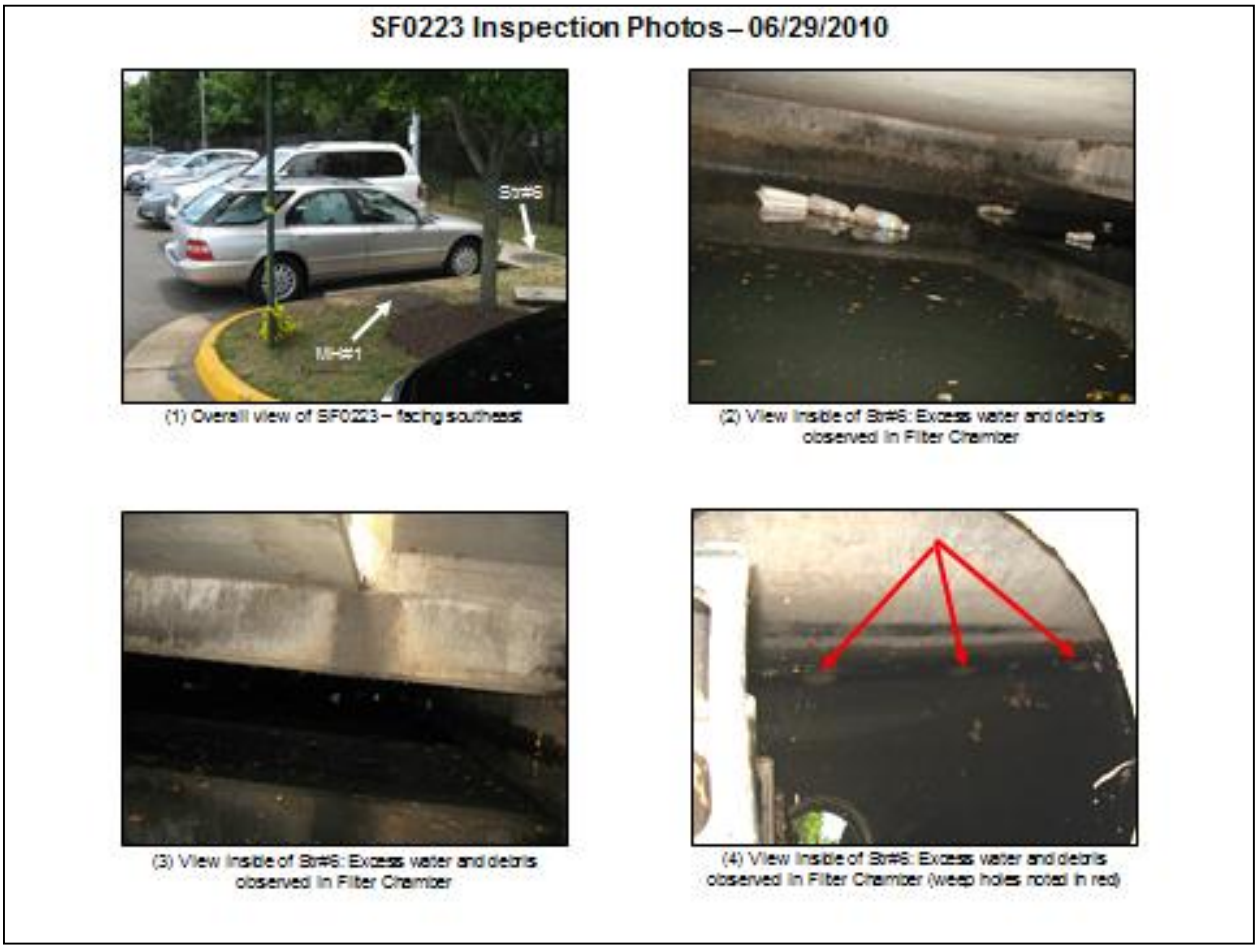


Figure 2-Example PowerPoint PHOTOS slide with captions.

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.***

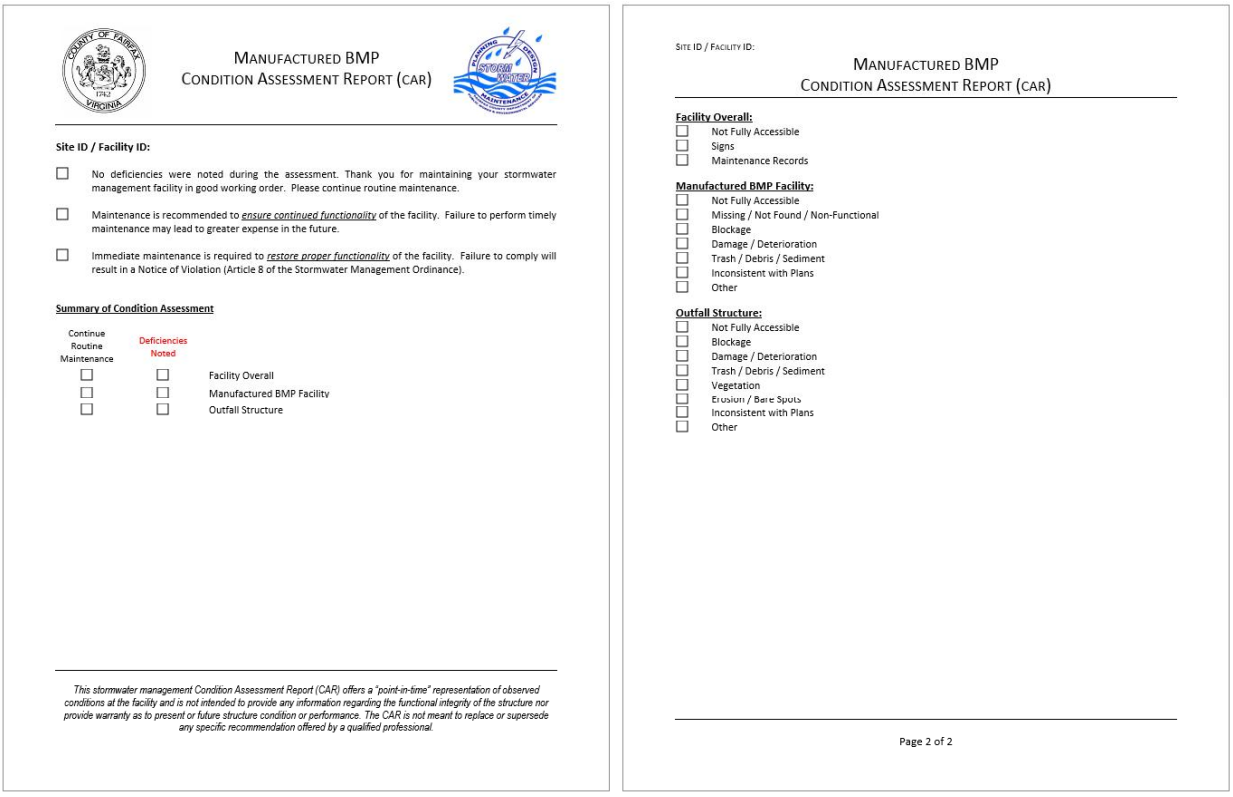
d. Bold the whole item.

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.

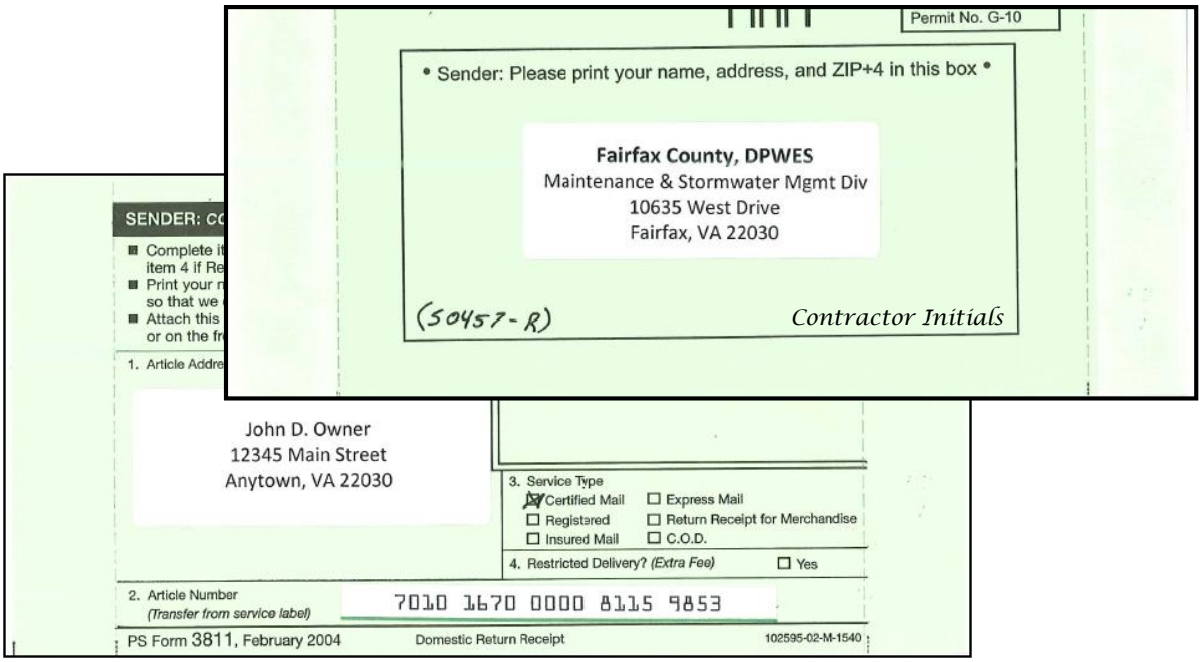


Figure 4-Filling out the green card for a certified mailing.

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.

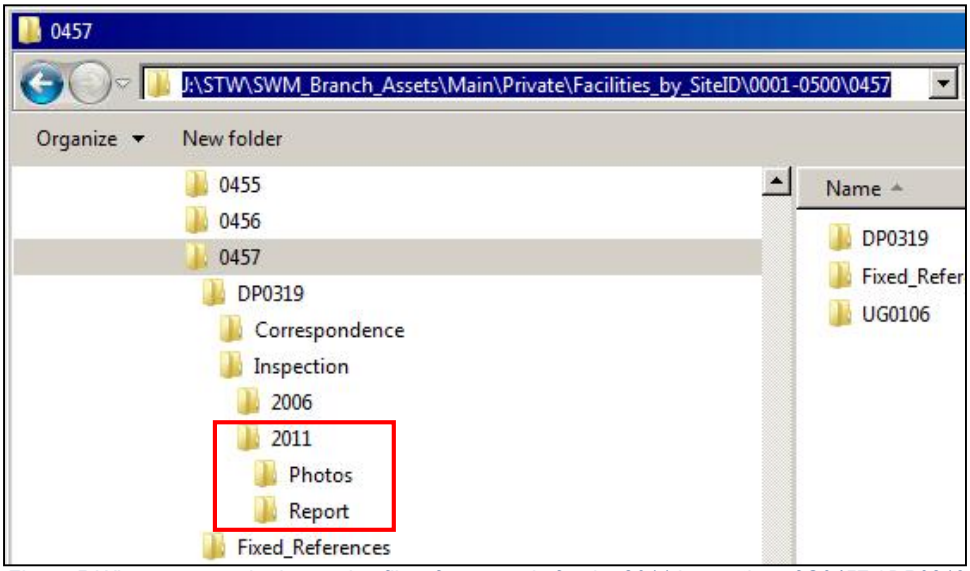


Figure 5-Where to save the inspection files, for example for the 2011 inspection of S0457 / DP0319.

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:
②⊙⊗		Facility Sign	Current weather conditions?		
③⊙⊗		Facility Labeling			

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% < ② < 40% < ③ < 60% < ④)	Observed:	Specified:
①②③⊙⊗		Shrubs Missing (10% < ② < 40% < ③ < 60% < ④)	Observed:	Specified:
①②③⊙⊗		Grass / Groundcover Missing (< ②<40%< ③<60%< ④)	Observed:	Specified:
①②③⊙⊗		Unhealthy / Damaged		
①②③⊙⊗		Overgrown / Invasive Vegetation		
①②③⊙⊗		Other: *Description*		
		Observation Well / Cleanout(s)		
①	⊙⊗	Missing / Not Found		
②	⊙⊗	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 (② < 25% < ③ < 75% < ④)						
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, Call to Re (703-877-2800: Inspection, Maint., & Enforc. Section)	

INSPECTOR COMMENTS

Field Measurements and Work Order Preparation

November 2015
Revised April 2017

Prepared by:

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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

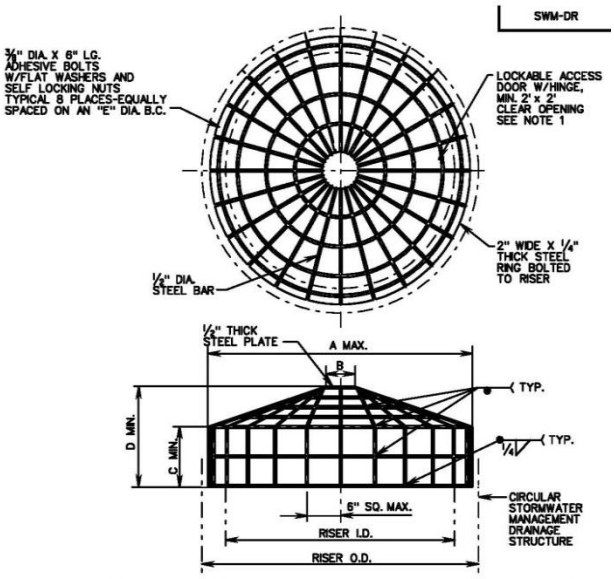
The cost to repair spalling on or inside the riser structure is estimated on a square footage basis using line item #19 on the cost estimate worksheet. The total area to be parged should be determined directly from the field measurements.

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 $C=\pi d$).

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: $A = (2" + 2") \times (\pi \times 18")$
$A = (4") \times (56.55")$
$A = 226.19$ sq. in.
$A = 1.57$ 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
SiteID / Facility ID
Date of Inspection: MM/DD/YYYY
Date of Estimate: MM/DD/YYYY
Estimate Prepared by: Company

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	COST
1	General clearing/mowing and removal of woody stock/brush/trees up to 2" in diameter		0.1 acre	$ 33.16	$ -
2	Remove trees, 2" - 5" diameter		EA	$ 374.58	$ -
3	Remove trees, 6" - 12" diameter		EA	$ 409.60	$ -
4	Remove trees, 13" - 24" diameter		EA	$ 512.00	$ -
5	Remove trees, 25" - 36" diameter		EA	$ 768.00	$ -
6	Remove trees, 37" diameter or greater		EA	$ 2,150.40	$ -
7	Grind tree stump (≤24" dia.) below grade		EA	$ 235.52	$ -
8	Grind tree stump (>24" dia.) below grade		EA	$ 307.20	$ -
9	Excavation		CY	$ 30.00	$ -
10	Haul & dispose of excavation/unsuitable material		CY	$ 16.00	$ -
11	Install control fill/select borrow material for road, dam/embankment, and/or stream construction		CY	$ 35.00	$ -
12	Flowable Fill		CY	$ 256.00	$ -
13	Remove & dispose of 4" - 12" diameter pipe		LF	$ 24.52	$ -
14	Remove & dispose of 15" - 30" diameter pipe		LF	$ 35.33	$ -
15	Remove & dispose of 36" - 54" diameter pipe		LF	$ 50.18	$ -
16	Remove & dispose of concrete trickle ditch		SY	$ 10.00	$ -
17	Remove & dispose of debris from drainage structures and pipes		CF	$ 30.00	$ -
18	Power flush storm pipe (12" - 36")		LF	$ 12.00	$ -
19	Parge existing structure		SF	$ 50.00	$ -
20	Parge existing joints or junction to structure		EA	$ 75.00	$ -
21	8" concrete collar around pipe for joint repair (12" - 33" diameter pipe)		EA	$ 450.00	$ -
22	8" concrete collar around pipe for joint repair (34" - 60" diameter pipe)		EA	$ 750.00	$ -
23	IS-1 Inlet shaping in existing structure		EA	$ 460.80	$ -
24	Install CL-III RCP, 12" diameter, up to 8' depth		LF	$ 48.00	$ -
25	Install CL-III RCP, 15" diameter, up to 8' depth		LF	$ 78.00	$ -
26	Install CL-III RCP, 18" diameter, up to 8' depth		LF	$ 94.00	$ -
27	Install CL-III RCP, 21" diameter, up to 8' depth		LF	$ 120.00	$ -
28	Install CL-III RCP, 24" diameter, up to 8' depth		LF	$ 98.00	$ -
29	Install CL-III RCP, 27" diameter, up to 8' depth		LF	$ 140.00	$ -
30	Install CL-III RCP, 30" diameter, up to 8' depth		LF	$ 160.00	$ -
31	Install CL-III RCP, 36" diameter, up to 8' depth		LF	$ 140.00	$ -
32	Install Class I Rip-Rap (dry/non-grouted)		SY	$ 90.00	$ -
33	Install Class II Rip-Rap (dry/non-grouted)		SY	$ 141.00	$ -
34	Install Class III Rip-Rap (dry/non-grouted)		SY	$ 210.00	$ -
35	Install Grouted Class I Rip-Rap		SY	$ 100.00	$ -
36	Fabricate & Install galvanized low-flow BMP plate and trash rack per PFM		LB	$ 12.00	$ -
37	Fabricate & Install galvanized top trash rack		LB	$ 10.50	$ -

Last Update: 10/3/2014

NON-ROUTINE MAINTENANCE COST ESTIMATE
SiteID / Facility ID
Date of Inspection: MM/DD/YYYY
Date of Estimate: MM/DD/YYYY
Estimate Prepared by: Company

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	COST
38	Install gabion baskets to stabilize stream banks		CY	$ 180.00	$ -
39	Repair/replace detention pond signs (existing post)		EA	$ 51.61	$ -
40	Repair/replace detention pond signs (new post)		EA	$ 89.68	$ -
41	Water quality sign per PFM Plate 81-6		EA	$ 165.00	$ -
42	Install concrete cradle, CL-A4 concrete around principal spillway		CY	$ 338.53	$ -
43	Remove & dipsose of asphalt pavement/trail (2"-4" trail)		SY	$ 6.00	$ -
44	Install 2" asphalt pavement/trail		SY	$ 12.00	$ -
45	Install 4" asphalt base, BM-25		SY	$ 23.00	$ -
46	Install VDOT HR-1 Handrail		LF	$ 85.00	$ -
47	Install HR-2 Handrail		LF	$ 90.00	$ -
48	Install access road gate		EA	$ 2,100.00	$ -
49	Install post and cable barrier		EA	$ 750.00	$ -
50	Install removable locking bollard		EA	$ 950.00	$ -
51	Temp. construction entrance (no wash rack)		EA	$ 850.00	$ -
52	Vehicle wash rack for construction entrance		EA	$ 850.00	$ -
53	Silt fence		LF	$ 4.78	$ -
54	Super silt fence		LF	$ 11.96	$ -
55	Inlet protection		EA	$ 190.00	$ -
56	Sodding		SY	$ 5.50	$ -
57	Sodding to include 2" topsoil		SY	$ 10.00	$ -
58	Seed and mulch (includes lime and fertilizer)		SY	$ 1.50	$ -
59	Seed, mulch, and 2" topsoil (includes lime and fertilizer)		SY	$ 6.00	$ -
60	Native seeding/wetland mix		SY	$ 1.25	$ -
61	2" topsoil		SY	$ 5.00	$ -
62	Install coir logs (12"-16" diameter)		LF	$ 27.90	$ -
63	Install coir logs (20" - 24" diameter)		LF	$ 41.37	$ -
64	Provide and plant tree seedling (12" length caliper/BR)		EA	$ 155.00	$ -
65	Provide and plant shrub seedling (container)		EA	$ 45.00	$ -
66	Clean debris from pond low-flow trash rack. Remove & dispose all material off-site.		EA	$ 100.00	$ -
67	Clean debris from pond top trash rack. Remove & dispose all material off-site.		EA	$ 100.00	$ -
68	Slip-Line existing CMP pipe		LF	$ 110.00	$ -
69	Pond silt removal and disposal off-site		CY	$ 42.63	$ -
70	Removal of rip-rap (all classes)		SY	$ 25.00	$ -
Non-Std.				$ -	$ -
Non-Std.				$ -	$ -

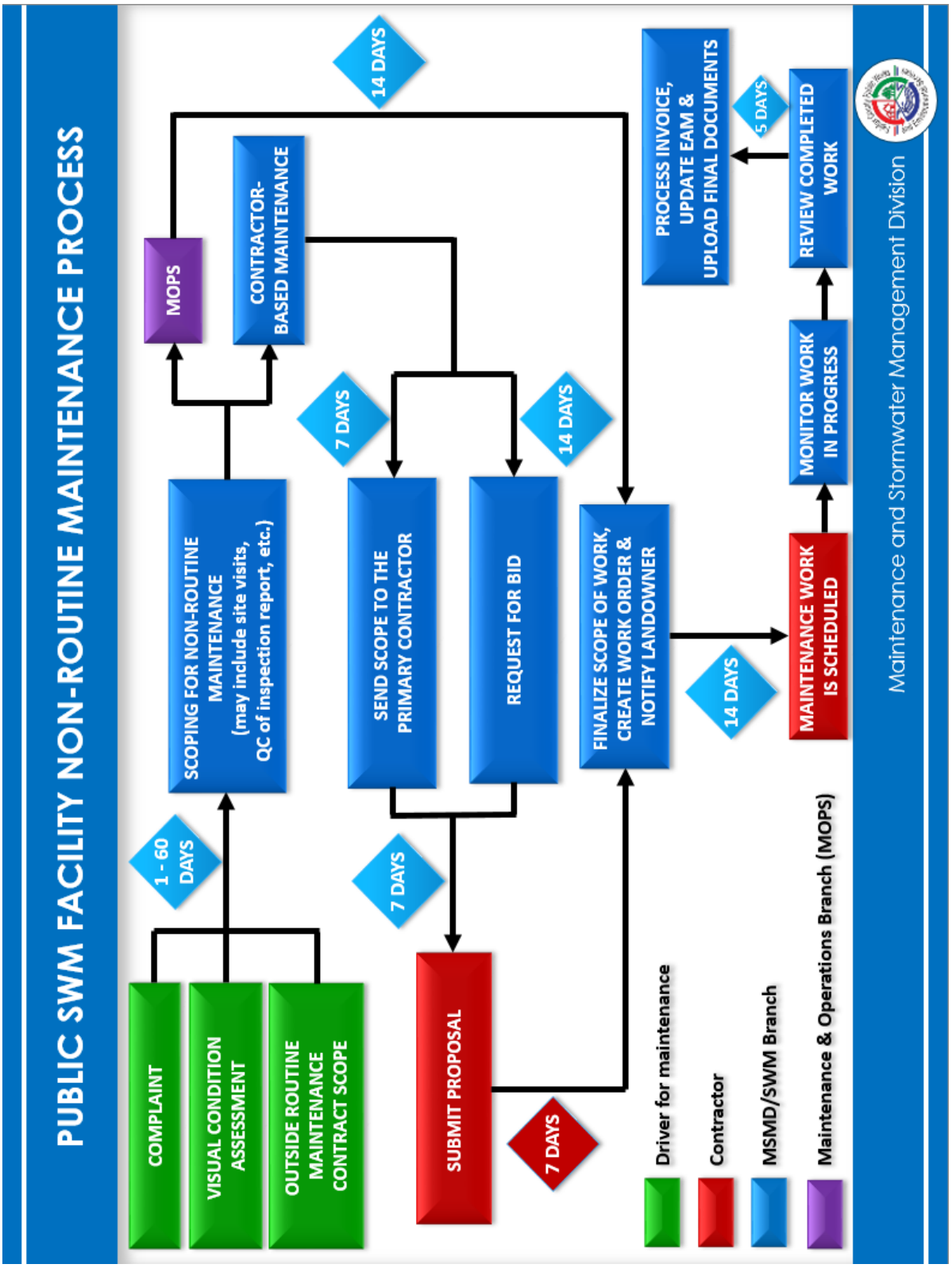
Sub-Total = $ -

Mobilization (5%) = $ -

Total Estimated Cost = $ -

Last Update: 10/3/2014

Appendix C – Public Pond Non-routine Maintenance Work Flow Process



Fairfax County 2020 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
9-30-2020

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 2020 MS4 Program Plan and Annual Report

Appendix P12

Standard Operating Procedures for the MS4 Wet Weather Screening Program

VSMP Permit Number VA0088587
9-30-2020

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: 03/29/2016 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 (renewed) 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 H.

b. Site Selection Protocol

The wet weather screening program employs a two-tiered site selection method that (1) identifies service areas with high densities of commercial and industrial facilities, and (2) identifies specific service areas that have the greatest potential for contributing polluted runoff via ranking using scoring criteria. The method uses GIS data and supplemental information to rank parcels. Table 2 lists Fairfax County's GIS coverages and data sets relevant to this effort.

Table 2: GIS layers and data to be used to select and prioritize industrial/ commercial parcels for monitoring

Description	Dataset Name
MS4 service area	StormNet_Industrial_Parcel_Info.gdb
Industrial and commercial facilities	IHRR_P3_Facilities.mdb
Orthophotography	2011_orthophoto_1ft.sid
Fairfax hydrography layer	Various
Current land use	CountywideLU_File_081511.gdb
Easements	StormNet_Industrial_Parcel_Info.gdb
Stormwater network - arcs	StormNet_Industrial_Parcel_Info.gdb
Stormwater network - point features	StormNet_Industrial_Parcel_Info.gdb

The goal of the site selection process is to establish a systematic strategy for targeting areas that have the greatest potential for discharging excessive levels of pollutants to the MS4. This process increases the likelihood of finding possible pollution sources while reducing the amount of staff time spent at unlikely sites. 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.

Level 1: Characterize Subbasins

Step 1: Identify MS4 service area subbasins that drain to outfalls located within an easement that allows for maintenance access.

Step 2: Overlay subbasins identified in Step 1 with ICF points. Conduct a spatial join of ICF points and subbasins in order to get a count of the number of ICFs within each subbasin.

Step3: Calculate the ICF density by dividing the number of ICFs by the surface area of that subbasin.

Step 4: Calculate the number of Index Value 4 parcels (those parcels that have the greatest potential to contribute pollution to the MS4) within each subbasin identified in Step 1. This is accomplished by selecting all of the land use codes (LUCs) associated with Index Value 4 parcels, creating a new GIS parcel layer that solely contains these LUCs, and conducting a spatial join of the new Index Value 4 layer with the MS4 service area layer. The LUCs that are identified as being Index Value 4 are listed in Table 3.

Step 5: Determine which ICFs have the greatest potential to contribute pollution to the MS4 (Appendix H), and calculate the number of these facilities which fall within each subbasin identified in Step 1. SIC (Standard Industrial Classification) codes associated with industries having the highest potential to produce polluted runoff (e.g., automobile repair and service shops, oil refiners, petroleum stations, golf courses) are used in selecting specific ICFs, and a GIS spatial join of the selected ICFs and the subbasins is used to get a count of the selected ICFs within each subbasin.

Table 3: Index value 4 land uses that occur 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)

Level 2: Score and Rank Parcels

Rank each MS4 service area subbasin by assigning each a pollution probability score based on the four criteria discussed above (number of ICFs, ICF density, number of Index Value 4 parcels, number of ICFs with selected SIC codes). Calculation of the scores is discussed below.

Step 6: Normalize the four criteria to their maximum values. This will result in a highest score of one (1) for an individual criterion.

Step 7: Sum the four scores for each subbasin. The sum of the four scores represents the final score that is used to rank all subbasins.

Step 8: Generate a list of the 28 highest scored MS4 service area subbasins and include two (2) additional sites of concern provided by the County which may have a history of or elevated concern for polluted runoff potential (Table 4)

Level 3: Investigate Candidate Sites

Step 9: Field staff visit the candidate MS4 service area subbasins(see Table 4) and their associated outfalls, to evaluate each for pollution potential, access to the outfall, and feasibility of monitoring. Hotspot Site Investigations (USEPA 2005) are conducted at each site to aid in the selection of the 10 most suitable subbasins for wet weather sampling.

This selection protocol has been applied for sites that will be screened for the 2015-2020 MS4 permit term. Table 4 presents the results for the first two levels of this site selection protocol and includes two additional areas of special concern.

Table 4: Fairfax County wet weather screening site selection results

Rank	Service Area ID	Score	Rank	Service Area ID	Score
1	STMN1013494095	1.794	16	STMN0543047308	0.932
2	STMN0491419552	1.733	17	STMN0171005215	0.896
3	STMN0493423969	1.507	18	STMN0292013841	0.888
4	STMN0991489095	1.494	19	STMN0781457949	0.884
5	STMN0993495728	1.378	20	STMN0343027642	0.863
6	STMN0294016861	1.278	21	STMN0924479620	0.830
7	STMN0293017600	1.188	22	STMN0902474164	0.819
8	STMN0974496911	1.130	23	STMN0901474668	0.798
9	STMN0343030307	1.124	24	STMN0792455798	0.788
10	STMN0991505083	1.114	25	STMN0723444697	0.759
11	STMN0612426502	1.082	26	STMN0163407466	0.741
12	STMN0991488356	1.058	27	STMN0891475778	0.740
13	STMN0931471031	1.045	28	STMN0991488353	0.722
14	STMN0813464266	1.015	N/A	STMN1134502798*	N/A
15	STMN1074058314	1.014	N/A	STMN0992487769*	N/A
*County site of concern					

c. Field Reconnaissance Protocol

Sites identified as candidates for screening according to the site selection protocol are visited to obtain information regarding suitability for monitoring and ease of access for use in selecting priority sites for wet weather screening. Field maps prepared for reconnaissance include streams, watersheds, outfalls, the storm sewer network, and major and minor roads. The candidate sites are photographed. The field reconnaissance protocol consists of the following steps:

1. 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). Record observations on standard data sheet (Appendix B). Site investigations encompassing a portion or the entirety of a service area will use the Service Area Site Investigation Field Data Sheet; individual businesses will use a hotspot investigation field data sheet.
2. Locate outfall(s) and verify orifice diameter to enable calculation of flow rate (discharge) using appropriate Manning's coefficients.
3. Evaluate site accessibility, landowner permission, and security of the area for the purpose of locating an automated sampler. 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. Open manholes and determine the suitability of placing a compact automated sampler within the manhole or at-grade adjacent to the manhole. Verify the diameter of the pipe and depth of the hole to determine the need for personnel trained and certified to work in confined spaces and to identify the required inserts for monitoring equipment (spring ring, scissors ring, or weir). Traffic control authorization and training may be required.

4. If the subbasin is large (i.e., greater than 20 acres) and drains several non-target land use areas (e.g., residential), then field staff should investigate smaller sections of infrastructure within the service area to determine whether a smaller portion of the network that services a smaller commercial or industrial drainage can be effectively monitored. In many instances, several points of inter-connection exist that contribute cumulative discharge to the MS4 outfall that drains the entire service area. Staff should evaluate the location of the inter-connection as in Step 3 above. Lack of easement availability at the point of inter-connection should be noted.

Field data sheets are used to document the visual screening performed in Step 1 of the Field Reconnaissance Protocol (Appendix B). Sites are ranked from highest to lowest according to a hotspot status score, which is the total number of elements tallied on the field reconnaissance data sheet divided by the acreage of the service area. Sites with the highest hotspot status scores are considered to have the highest priority for monitoring. Factors considered in Steps 2 through 4 of the Field Reconnaissance Protocol could hinder monitoring or eliminate a site from consideration (e.g., inaccessibility, relative lack of security). The ten highest-priority candidate sites that have been determined using this protocol are listed in Appendix J. The County may have to obtain permission from the landowner to access selected monitoring sites and this may affect each year's selected sites. The approved wet weather screening sites will be revisited and prepared for monitoring according to procedures outlined in Section III and Appendix C

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 and health and safety procedures are provided in Appendix C and Appendix D, respectively.

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 automated sampling allows for monitoring runoff throughout an entire storm because concentrations of pollutants may vary during a storm because they may mobilize and be delivered to the MS4 at different times depending on the rate and duration of rainfall. This approach also allows for unattended monitoring in the case of overnight storms and offers additional advantages over other sampling methods for assessing stormwater runoff (Harmel et al. 2006). Automated sampling and associated continuous flow-logging also enable researchers to calculate pollutant loads. Wet weather sampling in this case is intended as a screening tool rather than a long-term monitoring at any particular site.

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 screening at a site (i.e., four storm events). The automated sampler (ISCO model 6712 or

equivalent) will collect water samples at fixed intervals over the course of each sampled rainfall. Individual samples will be combined into a discharge volume-weighted composite sample. One composite sample will be obtained at each sampling point and transported to an approved analytical laboratory to be tested for the analytes listed in Table 5. Field technicians measure composite pH and specific conductance 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 (from a review of the literature) 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. Total petroleum hydrocarbons (TPH) are monitored to identify deposition problems in high-vehicular activity areas resulting from petroleum-based residue. Note that TPH is sampled using manual (grab) methods when practical. When TPH sampling using manual means is impractical due to site conditions or time of storm onset, the automated sampler is programmed to obtain a "first flush" grab for this parameter by using a flow rate or rainfall trigger.

Table 5: Laboratory analytes and detection limits for Fairfax County's wet weather screening and industrial/high risk runoff program

Parameter	Detection Limit	Method
TSS	1 mg/L	SM 2540 B
Zinc	20 μg/L	EPA 200.8
Cadmium	2 μg/L	EPA 200.8
Copper	2 μg/L	EPA 200.8
Lead	2 μg/L	EPA 200.8
Chromium	2 μg/L	EPA 200.8
Nickel	2 μg/L	EPA 200.8
COD	10 mg/L	EPA 410.4
Total Phosphorus	0.01 mg/L	SM 4500 P-E
Orthophosphate	0.01 mg/L	SM 4500 P-E
Total Kjeldahl Nitrogen	0.5 mg/L	SM 4500 NH3-C
Nitrate and Nitrite	0.02 mg/L	SM 4500NO3-H
Hardness	1 mg/L	SM 2340 B
TPH	5 mg/L	EPA 1664

c. Sampling Frequency

The County's permit does not specify a sampling frequency or duration for areas of interest. Wet weather sampling of MS4 service areas is intended as a water quality screening activity to support the County in identifying and addressing sources of water quality pollution; however, seasonal storm event capture will be undertaken to assess seasonal variability of service area

runoff conditions. Under this protocol, sampling will be performed once per quarter during a yearly monitoring period at each wet weather screening site.

The program is designed for monitoring two areas concurrently on a quarterly basis. At the conclusion of the MS4 reporting year (July 1 – June 30), two new areas begin quarterly wet weather screening. This scheme of quarterly sampling at two sites results in 8 storm events monitored per MS4 reporting year.

d. 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.

Storms that are forecast to deliver 0.3 in. 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.

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 gauge identified by the County.

e. 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. 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. 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.

- Confined spaces entry shall only be performed by certified staff using appropriate equipment.

Additional information on Health and Safety may be found in Appendix D, 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.

IV. Data Management/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 being used as 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 E) 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, 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 F). 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 24 bottles 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. Monthly 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 one business day of results receipt with a notification of any results that exceed the criteria in Table 6. The Wet Weather program manager forwards any laboratory results in exceedance of the criteria in Table 6 within one business day to the Industrial and High Risk Runoff program coordinator for follow-up in accordance with the "Standard Operating Procedures for Industrial High Risk Runoff Program MS4 Point of Connection and Facility Inspections". The Industrial and High Risk Runoff program coordinator ensures that any exceedances 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 "Who to Call List" outlines the appropriate individuals and agencies to be notified for various water quality incidents and concerns (Appendix I) and is utilized in this process. The "Who to Call List" is updated on a regular basis, as needed. All follow-up actions in response to the wet weather monitoring results are coordinated between the Industrial and High Risk Runoff program coordinator and the Wet Weather program manager and stored electronically with the monitoring results.

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 6: Laboratory analytes and detection limits for Fairfax County's wet weather screening and industrial/high risk runoff programs

Parameter	Detection Limit	Exceedance Criterion
TSS[(a)]	1.0 mg/L	100mg/L
Zinc[(b)]	0.02 mg/L	0.120 mg/L(c)
Cadmium[(b)]	0.002 mg/L	0.0039 mg/L(c)
Copper[(b)]	0.002 mg/L	0.013 mg/L(c)
Lead[(b)]	0.002 mg/L	0.120 mg/L(c)
Chromium[(b)]	0.002 mg/L	0.570 mg/L(c)
Nickel[(b)]	0.002 mg/L	0.180 mg/L(c)
COD[(a)]	10 mg/L	120 mg/L
Total Phoshporus[(a)]	0.01 mg/L	2 mg/L
Orthophosphate	0.01 mg/L	N.A.
Total Kjeldahl Nitrogen[(a)]	0.5 mg/L	1.5 mg/L
Nitrate and Nitrite[(a)]	0.02 mg/L	0.68 mg/L
Hardness	1 mg/L	N.A.
TPH[(a)]	5 mg/L	15 mg/L

(a) Virginia State Water Control Board 2009
(b) Virginia State Water Control Board 2011
(c) Acute water quality criterion for metals is hardness-dependent. Values above reflect hardness standardized to 100 mg/L as CaCO3. See Virginia State Water Control Board (2009) for explanation of factors used to adjust acute criterion based on hardness for specific metals.
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. An MS Excel format file is prepared that includes the following information:

- Site evaluation and reconnaissance data;
- Site setup 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:

- a list of locations upon which 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;
- 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 G)

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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Virginia State Water Control Board. 2009. General VPDES Permit for Industrial Activity Storm Water Discharges, Permit No. VAR05 Fact Sheet. Virginia Department of Environmental Quality, Richmond, VA. April.

Virginia State Water Control Board. 2011. 9VAC25-260 Virginia Water Quality Standards, With Amendments Effective January 6, 2011. Virginia Department of Environmental Quality, Richmond, VA. January.

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. Field Reconnaissance Data Sheets

C. Equipment Installation, Operation and Sampling Procedures

D. Health and Safety Guidance for Wet Weather Screening Field Work

E. Wet Weather Screening Field Data Sheet

F. Chain of Custody Form
G. Example Water Chemistry Spreadsheet Format
H. Selected SIC Codes that Occur Within Fairfax County MS4 Service Areas
I. Stormwater Planning Division “Who To Call” List
J. Prioritized List and Maps of Candidate MS4 Service Areas for screening

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

Fairfax County MS4 Service Area Site Investigation Field Data Sheet

I.D.: STMN _____ Investigator(s) Initials:_____ Date: _____

1.POLLUTION POTENTIAL Photo Numbers: _____

Hotspot Element	No.	# near inlet	Comments/Severity
Outside storage of materials (uncovered, hazardous, leaking)			
Waste management (leaking dumpsters, blowing trash)			
Parking lot stains			
Outside maintenance of vehicles (uncovered)			
Outside fueling of vehicles			
Outside industrial processes			
Other			

General housekeeping comments:

2. LAND USE CHARACTERIZATION

Percent breakdown of: Residential _____ Commercial _____ Industrial _____ Institutional _____

Example names of businesses:

3. STORMWATER INFRASTRUCTURE

Stormwater controls: None _____ Few _____ Pervasive _____

Describe: _____

4. MS4 OUTFALL CONFIGURATION

Concrete Ditch_____ Pipe Conduit _____ Natural Channel _____

Pond Outfall? _____ Pipe Diameter: _____ Pipe Shape: _____ Submerged? _____

Available sampler placement location? _____ Rain gauge? _____ Access constraints: Fenced in? _____

Describe configuration and accessibility of feeder outfalls to natural channel or concrete ditch:

Hotspot Site Investigation **HSI**

WATERSHED:	SUBWATERSHED:	UNIQUE SITE ID:	
DATE: ___/___/_____	ASSESSED BY:	CAMERA ID:	PIC#:
MAP GRID:	LAT ___°_____'_____" LONG ___°_____'___"		LMK #

A. SITE DATA AND BASIC CLASSIFICATION

Name and Address: _____

_____

_____

SIC code (if available): _____

NPDES Status: ☐ Regulated ☐ Unregulated ☐ Unknown

Category: ☐ Commercial ☐ Industrial ☐ Institutional ☐ Municipal ☐ Transport-Related

Miscellaneous ☐ Golf Course ☐ Marina ☐ Animal Facility

Basic Description of Operation: _____

	INDEX*
B. VEHICLE OPERATIONS ☐ **N/A** *(Skip to part C)*	**Observed Pollution Source?** ▒
B1. Types of vehicles: ☐ Fleet vehicles ☐ School buses ☐ Other: _____	
B2. Approximate number of vehicles: _____	
B3. Vehicle activities *(circle all that apply)*: Maintained Repaired Recycled Fueled Washed Stored	○
B4. Are vehicles stored and/or repaired outside? ☐ Y ☐ N ☐ Can't Tell Are these vehicles lacking runoff diversion methods? ☐ Y ☐ N ☐ Can't Tell	○
B5. Is there evidence of spills/leakage from vehicles? ☐ Y ☐ N ☐ Can't Tell	○
B6. Are uncovered outdoor fueling areas present? ☐ Y ☐ N ☐ Can't Tell	○
B7. Are fueling areas directly connected to storm drains? ☐ Y ☐ N ☐ Can't Tell	○
B8. Are vehicles washed outdoors? ☐ Y ☐ N ☐ Can't Tell Does the area where vehicles are washed discharge to the storm drain? ☐ Y ☐ N ☐ Can't Tell	○
C. OUTDOOR MATERIALS ☐ **N/A** *(Skip to part D)*	**Observed Pollution Source?** ▒
C1. Are loading/unloading operations present? ☐ Y ☐ N ☐ Can't Tell If yes, are they uncovered *and* draining towards a storm drain inlet? ☐ Y ☐ N ☐ Can't Tell	○
C2. Are materials stored outside? ☐ Y ☐ N ☐ Can't Tell If yes, are they ☐ Liquid ☐ Solid Description: _____ Where are they stored? ☐ grass/dirt area ☐ concrete/asphalt ☐ bermed area	○
C3. Is the storage area directly or indirectly connected to storm drain (circle one)? ☐ Y ☐ N ☐ Can't Tell	○
C4. Is staining or discoloration around the area visible? ☐ Y ☐ N ☐ Can't Tell	○
C5. Does outdoor storage area lack a cover? ☐ Y ☐ N ☐ Can't Tell	○
C6. Are liquid materials stored *without* secondary containment? ☐ Y ☐ N ☐ Can't Tell	○
C7. Are storage containers missing labels or in poor condition (rusting)? ☐ Y ☐ N ☐ Can't Tell	○
D. WASTE MANAGEMENT ☐ **N/A** *(Skip to part E)*	**Observed Pollution Source?** ▒
D1. Type of waste *(check all that apply)*: ☐ Garbage ☐ Construction materials ☐ Hazardous materials	○
D2. Dumpster condition *(check all that apply)*: ☐ No cover/Lid is open ☐ Damaged/poor condition ☐ Leaking or evidence of leakage (stains on ground) ☐ Overflowing	○
D3. Is the dumpster located near a storm drain inlet? ☐ Y ☐ N ☐ Can't Tell If yes, are runoff diversion methods (berms, curbs) lacking? ☐ Y ☐ N ☐ Can't Tell	○
E. PHYSICAL PLANT ☐ **N/A** *(Skip to part F)*	**Observed Pollution Source?** ▒
E1. Building: Approximate age: _____ yrs. Condition of surfaces: ☐ Clean ☐ Stained ☐ Dirty ☐ Damaged	○
Evidence that maintenance results in discharge to storm drains (staining/discoloration)? ☐ Y ☐ N ☐ Don't know	○

*Index: ○ denotes potential pollution source; ▒ denotes confirmed polluter (evidence was seen)

Hotspot Site Investigation **HSI**

E2. Parking Lot: Approximate age _____ yrs. Condition: ☐ Clean ☐ Stained ☐ Dirty ☐ Breaking up
Surface material ☐ Paved/Concrete ☐ Gravel ☐ Permeable ☐ Don't know

E3. Do downspouts discharge to impervious surface? ☐ Y ☐ N ☐ Don't know ☐ None visible
Are downspouts directly connected to storm drains? ☐ Y ☐ N ☐ Don't know

E4. Evidence of poor cleaning practices for construction activities (stains leading to storm drain)? ☐ Y ☐ N ☐ Can't Tell

F. TURF/LANDSCAPING AREAS ☐ **N/A** *(skip to part G)* **Observed Pollution Source?**

F1. % of site with: Forest canopy ____% Turf grass _____ % Landscaping ____% Bare Soil ____%

F2. Rate the turf management status: ☐ High ☐ Medium ☐ Low

F3. Evidence of permanent irrigation or "non-target" irrigation ☐ Y ☐ N ☐ Can't Tell

F4. Do landscaped areas drain to the storm drain system? ☐ Y ☐ N ☐ Can't Tell

F5. Do landscape plants accumulate organic matter (leaves, grass clippings) on adjacent impervious surface? ☐ Y ☐ N ☐ Can't Tell

G. STORM WATER INFRASTRUCTURE ☐ **N/A** *(skip to part H)* **Observed Pollution Source?**

G1. Are storm water treatment practices present? ☐ Y ☐ N ☐ Unknown If yes, please describe: _____

G2. Are private storm drains located at the facility? ☐ Y ☐ N ☐ Unknown
Is trash present in gutters leading to storm drains? If so, complete the index below.

Index Rating for Accumulation in Gutters

	Clean				Filthy
Sediment	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
Organic material	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
Litter	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

G3. Catch basin inspection – Record SSD Unique Site ID here: _____ Condition: ☐ Dirty ☐ Clean

H. INITIAL HOTSPOT STATUS - INDEX RESULTS

☐ Not a hotspot (fewer than 5 circles and no boxes checked) ☐ Potential hotspot (5 to 10 circles but no boxes checked)
☐ Confirmed hotspot (10 to 15 circles and/or 1 box checked) ☐ Severe hotspot (>15 circles and/or 2 or more boxes checked)

Follow-up Action:
☐ Refer for immediate enforcement
☐ Suggest follow-up on-site inspection
☐ Test for illicit discharge
☐ Include in future education effort
☐ Check to see if hotspot is an NPDES non-filer
☐ Onsite non-residential retrofit
☐ Pervious area restoration; complete PAA sheet and record Unique Site ID here: _____
☐ Schedule a review of storm water pollution prevention plan

Notes:

Appendix C: 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 Ni-Cd rechargeable 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

Attached to all automated samplers will be an ISCO Model 730 bubbler flow module that will log the water flow rate in the pipes of interest. 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

Confined-spaces entry-certified personnel (see Appendix C) 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 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

- Ni-Cd battery, fully charged

Meteorology

Obtain storm forecast from staff meteorologist. 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)

<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 D: Health and Safety Guidance for Wet Weather Screening 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. 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.
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, 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)

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 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 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 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 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 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 E: 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 _____

F X S T G W Q

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			

INSERT TYPE:_____

MANHOLE ID:_____

LATITUDE:_____

LONGITUDE:_____

SAMPLER SERIAL:_____

MODULE SERIAL:_____

pH:_____

Sp. Cond.:_____

REVIEWED BY _____ DATE: _____ TSJ 03/14

Appendix F: Chain of Custody Form

MARTEL *CHAIN OF CUSTODY / SAMPLE INFORMATION FORM*

Martel Laboratories JDS Inc. • 1025 Cromwell Bridge Road • Baltimore, MD 21286 • (410) 825-7790 • FAX (410) 821-1054

MARTEL Log # _____ Client Code _____

Client Name/Phone/FAX _____

Client Address _____

Invoice Address _____

Sampler _____

Project Name/# _____

Contract/P.O Number _____

Sample Turnaround Time _____

Station No./ Sample ID	Station Location	Matrix	Container Description/ Preservation Status	Potentially Hazardous?	# of Containers	Date	Time	Analyses Required/Comments

Transferred by:	Received by:	Date	Time
Transferred by:	Received by:	Date	Time
Transferred by:	Received by:	Date	Time

Cooler Receipt Information **(LAB USE ONLY)**

Sufficient ice? - Yes/No If No, temp.= _____

Sample containers pres'd? - Yes/No If No, explain

Custody Seal present/intact? - Yes/No

Initials: Date:

Appendix G: Example Water Chemistry Spreadsheet Format

Target Service Area ID	Dominant Land Use	Event #	Date of Storm	Site Set-up	Time of Sampling Start	Average Rainfall Amount (inch)	Average Rain Event Length (hrs)	Sampler Program Length (hrs)	Analytical Results (event mean concentration)																		Summary WQ Analysis
									Alkalinity (mg/L)	Cd (µg/L)	COD (mg/L)	Cr (µg/L)	Cu (µg/L)	Hardness (mg/L)	TKN (mg/L)	Pb (µg/L)	Ni (µg/L)	NO^3+NO^2 (mg/L)	Ortho-P (mg/L)	P (mg/L)	TPH (mg/L)	TSS (mg/L)	Zn (µg/L)	pH (pH units)	Sp. Cond. (mS/cm^2)	Pass[1]/Fail
VA Surface Water Criterion										3.9		570	13			120	180	10[2]					120			VA Surface Water Criterion
NSQD Industrial Median[3]						0.49				2	60	14	22		1.4	25	16	0.73		0.26		78	210	7.5		NSQD Industrial Median[3]
NSQD Commercial Median[3]						0.39				0.89	60	6	17		1.6	18	7	0.6		0.22		42	150	7.3		NSQD Commercial Median[3]
NURP Runoff WQ EMC[4]													34		1.5	144		0.68		0.33		100	160			NURP Runoff WQ EMC[4]

NA Not analyzed, sampling bottle broken in transit to laboratory.
NC Not calculated.
(1) Levels of Analytes were acceptable and site did not require further testing or track down for any possible source of pollution.
(2) Denotes drinking water criterion for nitrate, rather than surface water criterion.
(3) National Stormwater Quality Database values from Maestre and Pitt 2005.
(4) National Urban Runoff Program values from USEPA 1983.

Appendix H: 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 I: Stormwater Planning Division "Who to Call" List

Who To Call

Illicit Discharges to MS4 and Streams

DPWES-SWPD, March 2015

Local (Police and Fire): **Emergency,** 911; **Non-Emergency**, 703-691-2131 **TTY** 711
State: VA Dept. of Emergency Management, 800-468-8892

Concern	Responsible Parties		
	Primary	2nd	3rd
Animal waste (dog poop, other pet waste)	SWPD		
Automotive products (e.g., gasoline, motor oil, antifreeze)	FMO	DEQ	SWPD, IWS
Chemicals, unspecified	FMO	DEQ	SWPD, IWS
Construction site runoff and debris	SDID	DEQ	SWPD
Cooling tower discharge	SWPD	IWS	
Discolored water and algae overgrowth	SWPD		
Drinking water line/main breaks	FW	SWPD	
Dumped garbage, trash, and dumpster issues	HD	SWMP	SWPD
Dumped yard debris (e.g., leaves) in storm inlets or stormwater management facilities	MSMD	SWPD	DEQ
Fish kill	DEQ	FMO	SWPD, IWS
Hazardous or industrial waste	FMO	HD, IWS	SWPD
Junk (incl. autos, tires) on residential/commercial property	DCC		
Laundry wash water and dry cleaner discharges	SWPD	IWS	
Paint (latex or oil based)	FMO	SWPD	DEQ
Pesticides, herbicides and fertilizers (PHF)	VDACS		
Restaurant wash water and fats, oils and grease (FOG)	HD	SWPD, IWS	
Sediment from stone fabricators	SWPD, IWS	FMO	
Sanitary sewage backups, overflows, discharges	WCD	HD, IWS	SWPD
Swimming pool water: private residential	SWPD	FMO	
Swimming pool water: public	SWPD	HD	IWS
Vehicle/equipment wash water: business, not individual residents	SWPD	IWS, DEQ	
Other contacts:			
County Office of Emergency Management	703-324-2362		
County Emergency Information Line	703-817-7771		
Fairfax County Public Schools (all FCPS properties)	571-423-2010 (08:00-16:30) 571-423-2000 (24/7, After Hours)		
Virginia Department of Transportation (VDOT)	IDDEReports@vdot.virginia.gov		

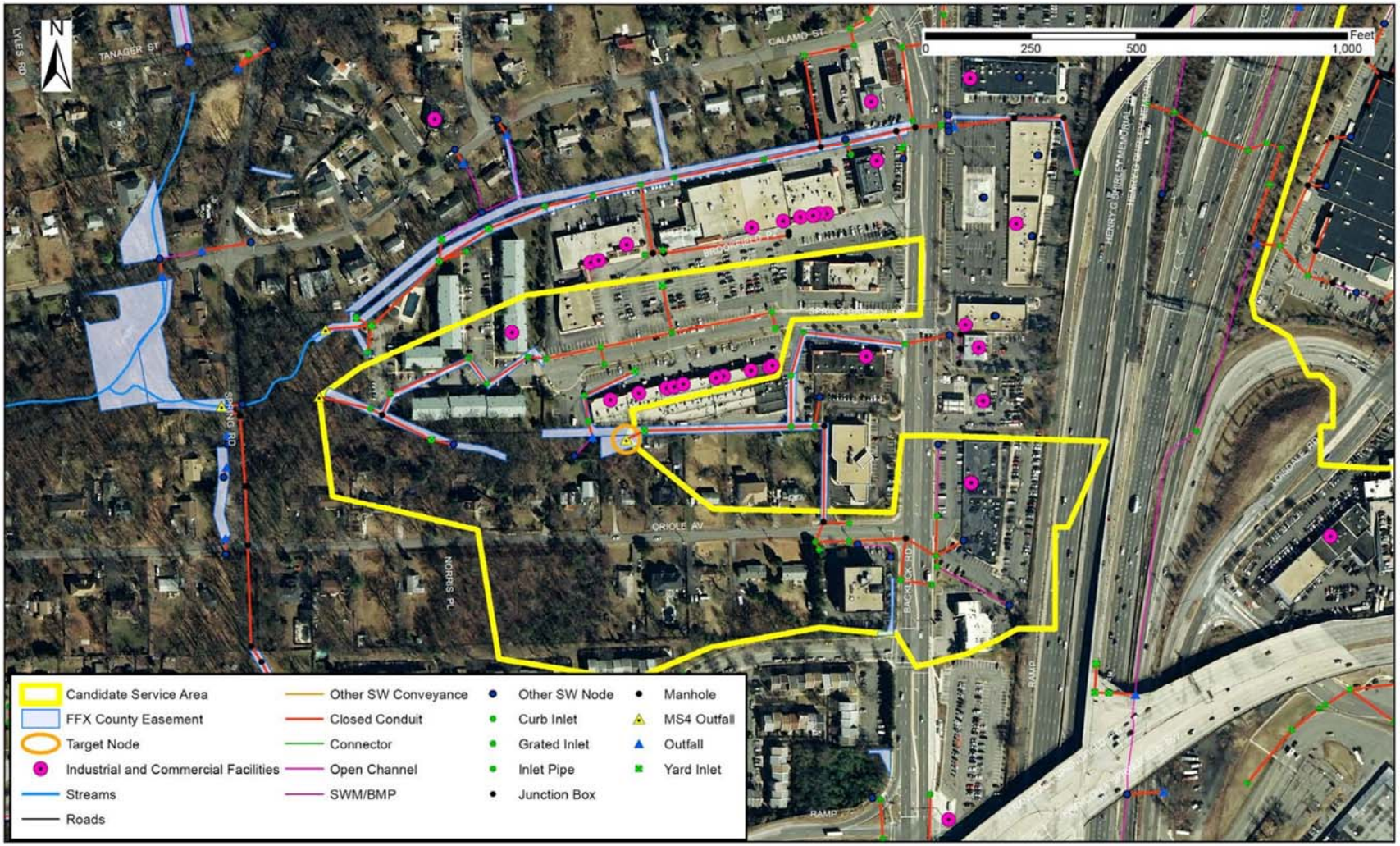
Acronyms		Phone Number	Contacts
DCC	Dept. of Code Compliance	703-324-1300	Karen McClellan, Elizabeth Perry
FMO	Office of the Fire Marshal	703-246-4386 703-246-4753	Trice Burgess, Terrance Fayson, George Robbins, Barry Hall, Allen Richardson, Rocco Alvaro
FW	Fairfax Water	703-289-6329	Andrew King
HD	Health Department	703-246-2444; 703-246-2201	Ron Campbell, John Yetman; Martin Thompson (sewage, pools)
IWS	Industrial Waste Section	703-550-9740	John Botts (x429), or general (x252)
MSMD	Maintenance & Stormwater Management Division	703-877-2800	Complaint Center
SDID	Site Development & Inspection Division	703-324-1720	Admin
SWMP	Solid Waste Management Program	571-242-8066	Russell Filtz (cell)
SWPD	Stormwater Planning Division	703-324-5500	Takisha Cannon, Cathy Roth
WCD	Wastewater Collection Division	703-323-1211	24-hour Trouble Response Center
DEQ	Virginia Dept. of Environmental Quality	703-583-3800	Mark Miller, Susan Mackert
VDACS	Virginia Dept. of Agriculture & Consumer Services	504-209-9135	Tom Higgs

APPENDIX J: Prioritized List and Maps of Candidate MS4 Service Areas for screening

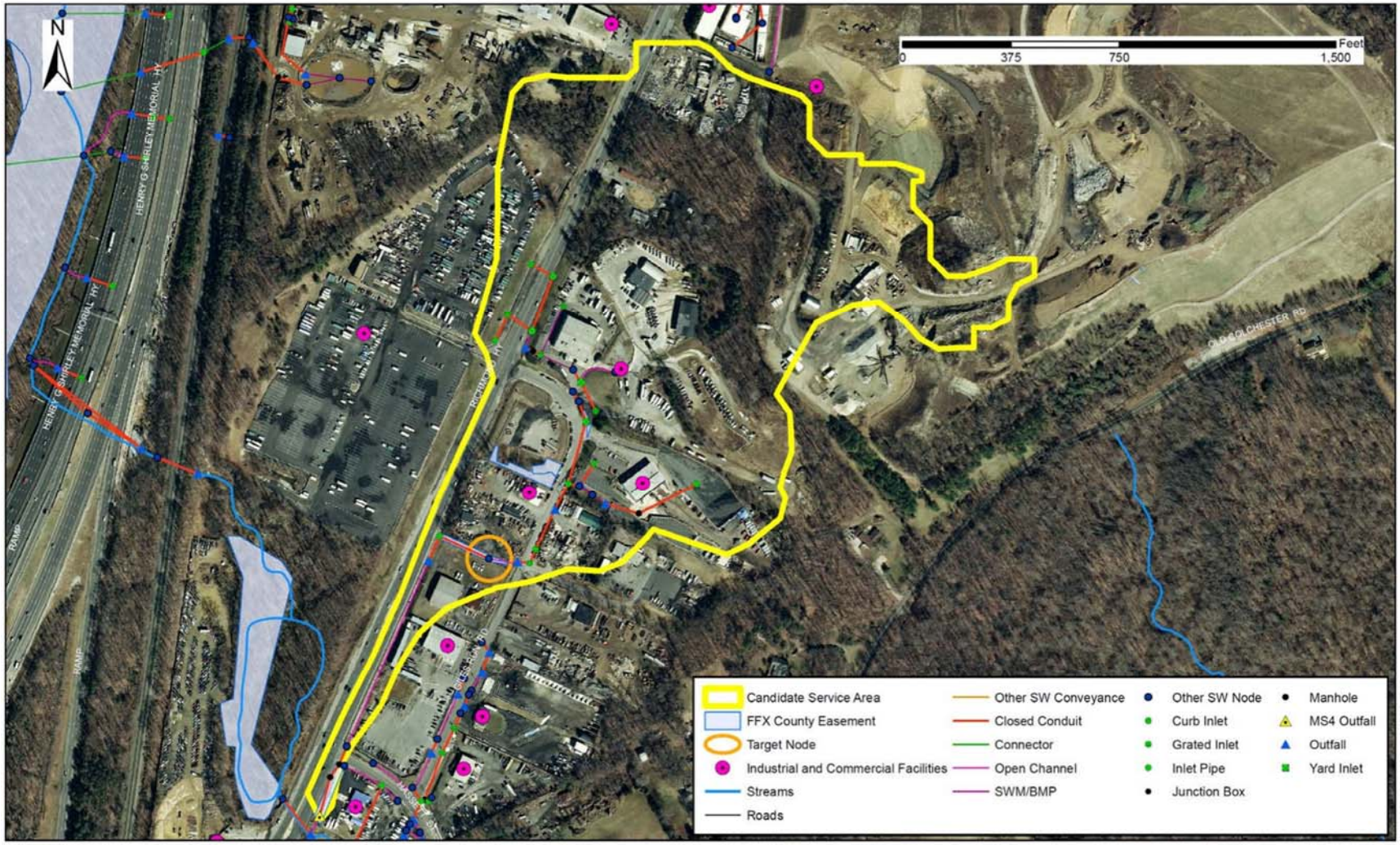
Prioritized list of candidate MS4 service areas to be screened.**	
Priority	**Service Area ID**
1	STMN0901474668
2	STMN1134502798
3	STMN0991488356
4	STMN0493423969
5	STMN0891475778
6	STMN0723444697
7	STMN0792455798
8	STMN0612426502
9	STMN0813464266
10	STMN0993495728
11*	STMN0491419552
12*	STMN0543047308
13*	STMN0991488353
14*	STMN0931471031
15*	STMN0343030307
* Alternate site	

**NOTE: This list of initial priority areas is based on the Wet Weather program site selection protocol outlined in this document. Refinements to the actual order (permit years) in which these sites are screened will be based upon other factors such as access, permissions, changes in site conditions, additional information, etc.

STMN0901474668



STMN1134502798



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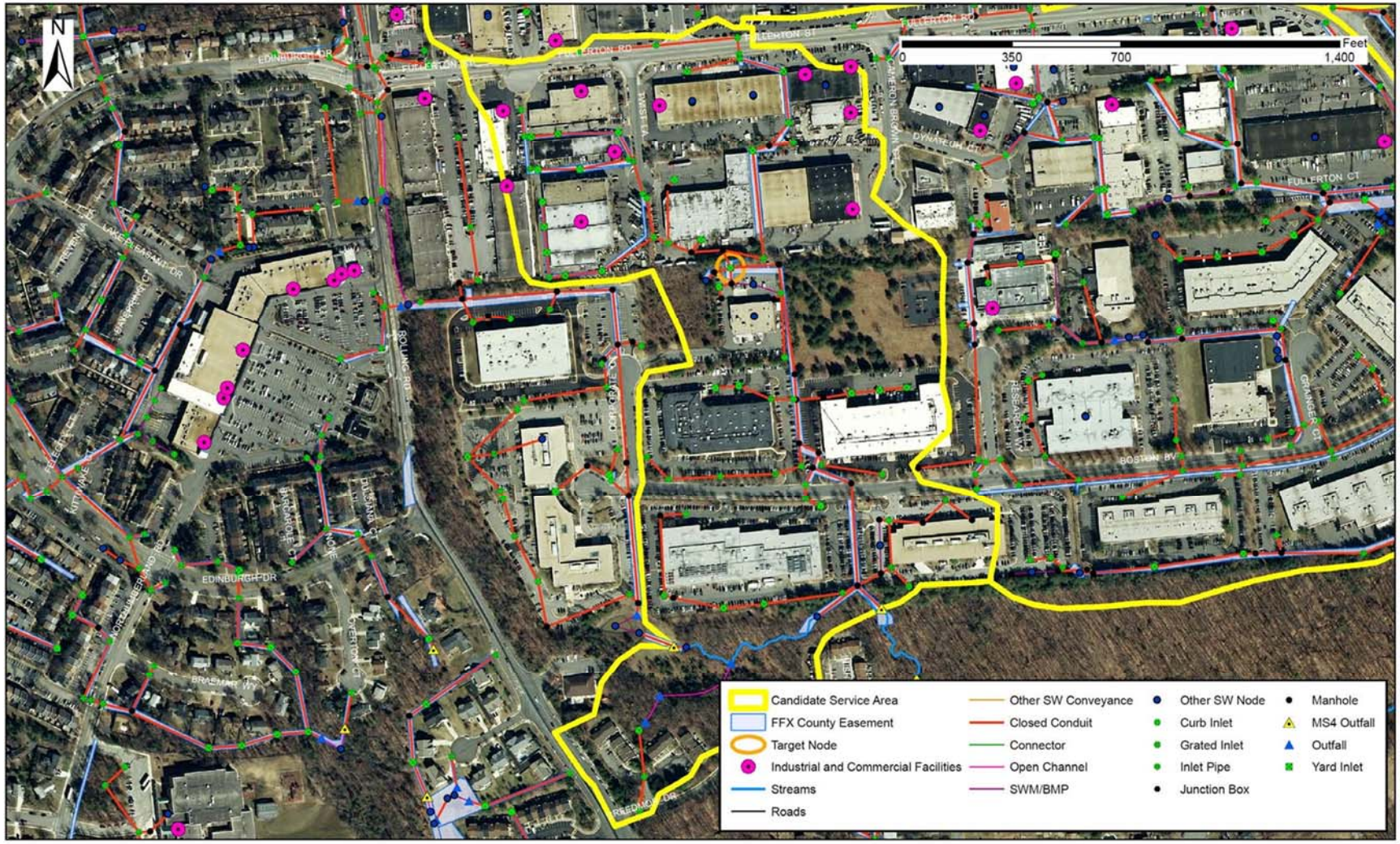

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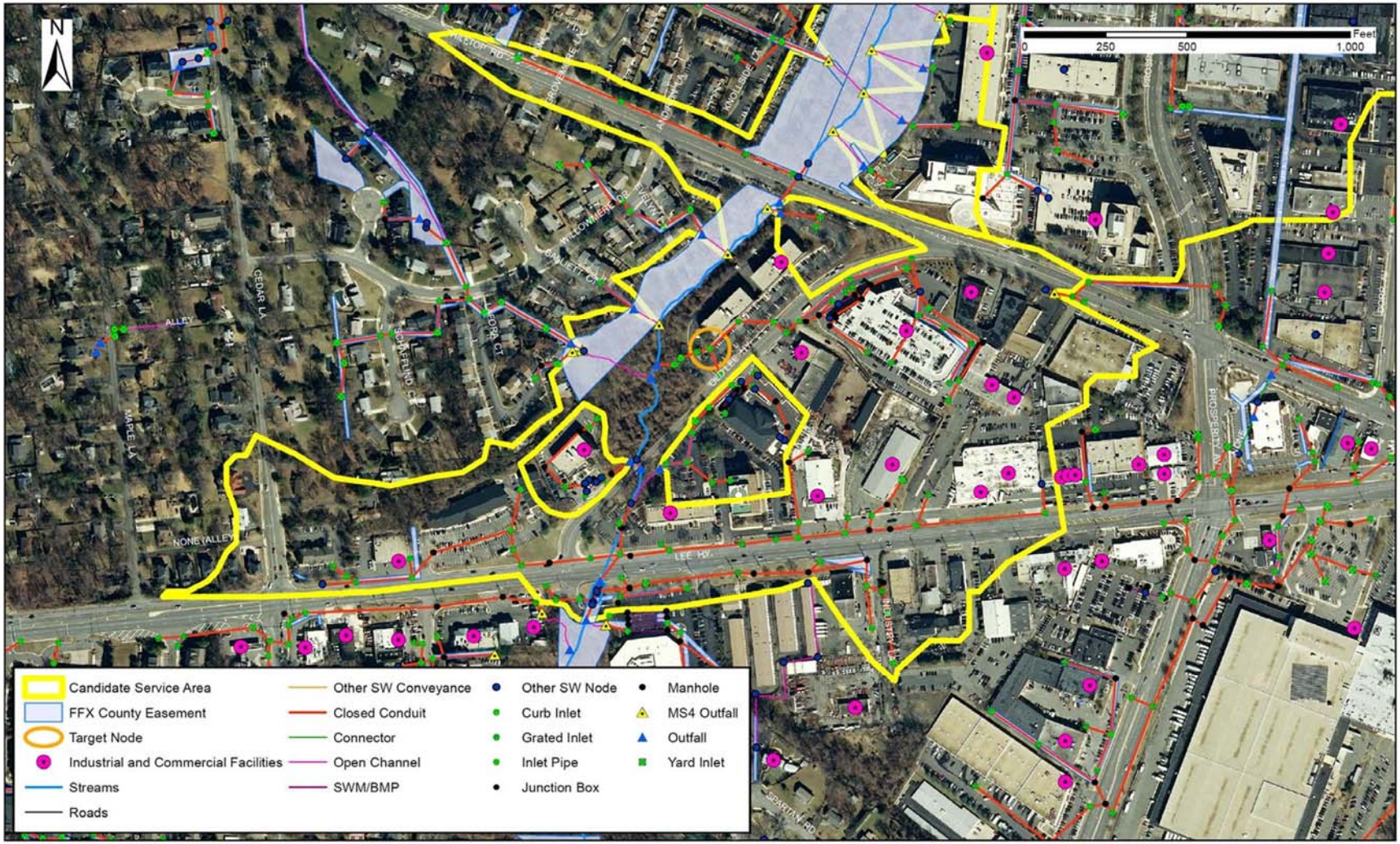

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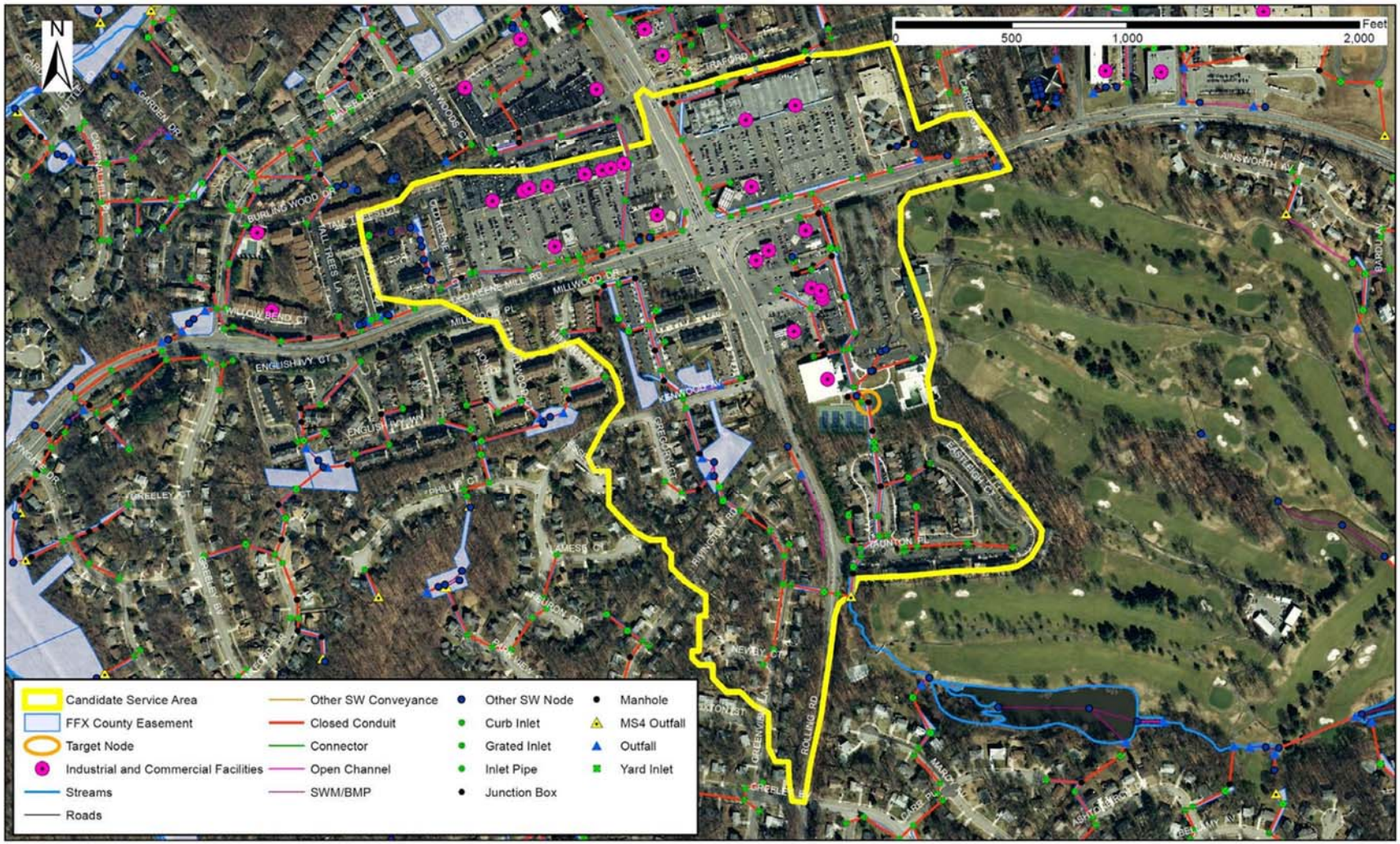
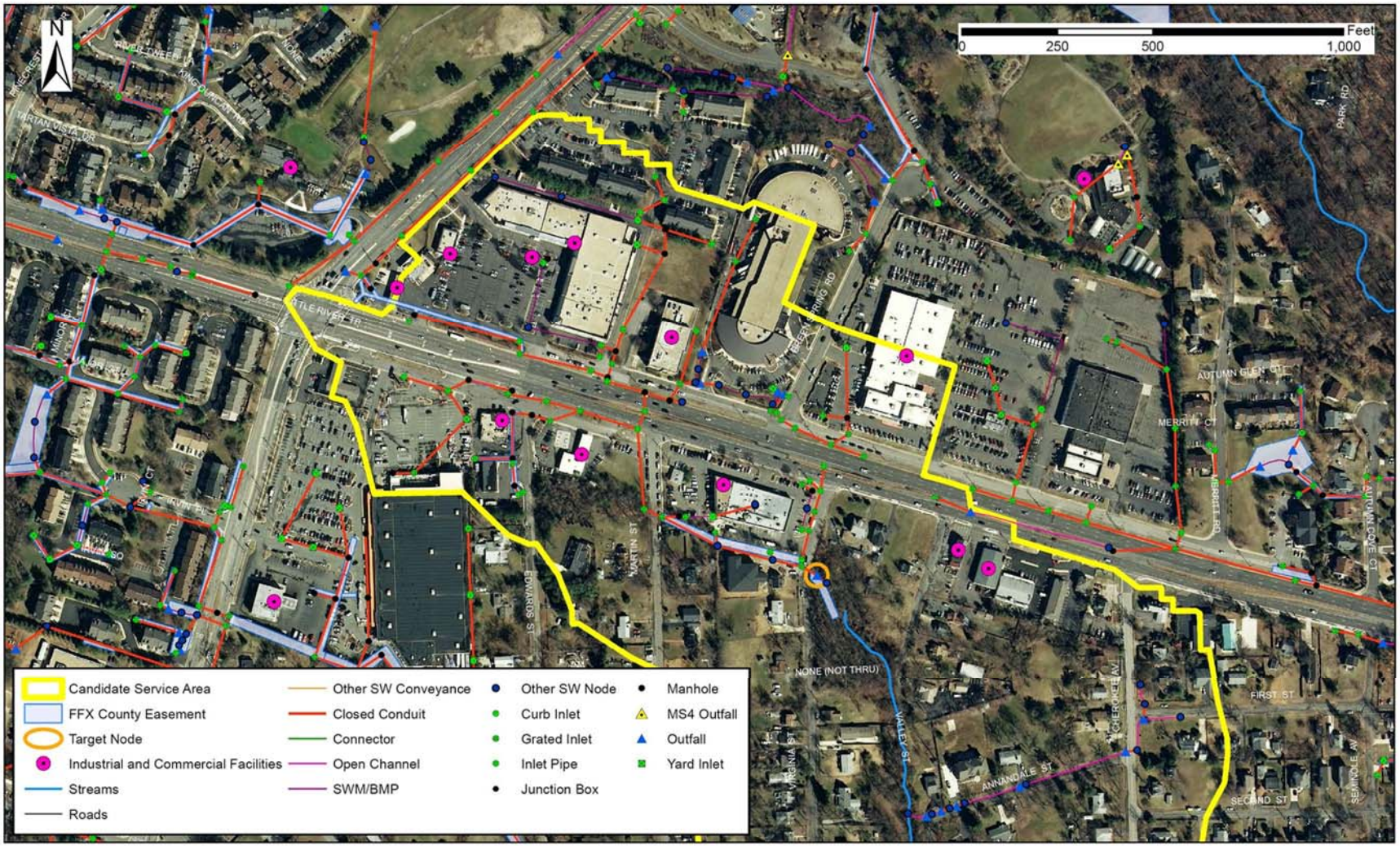
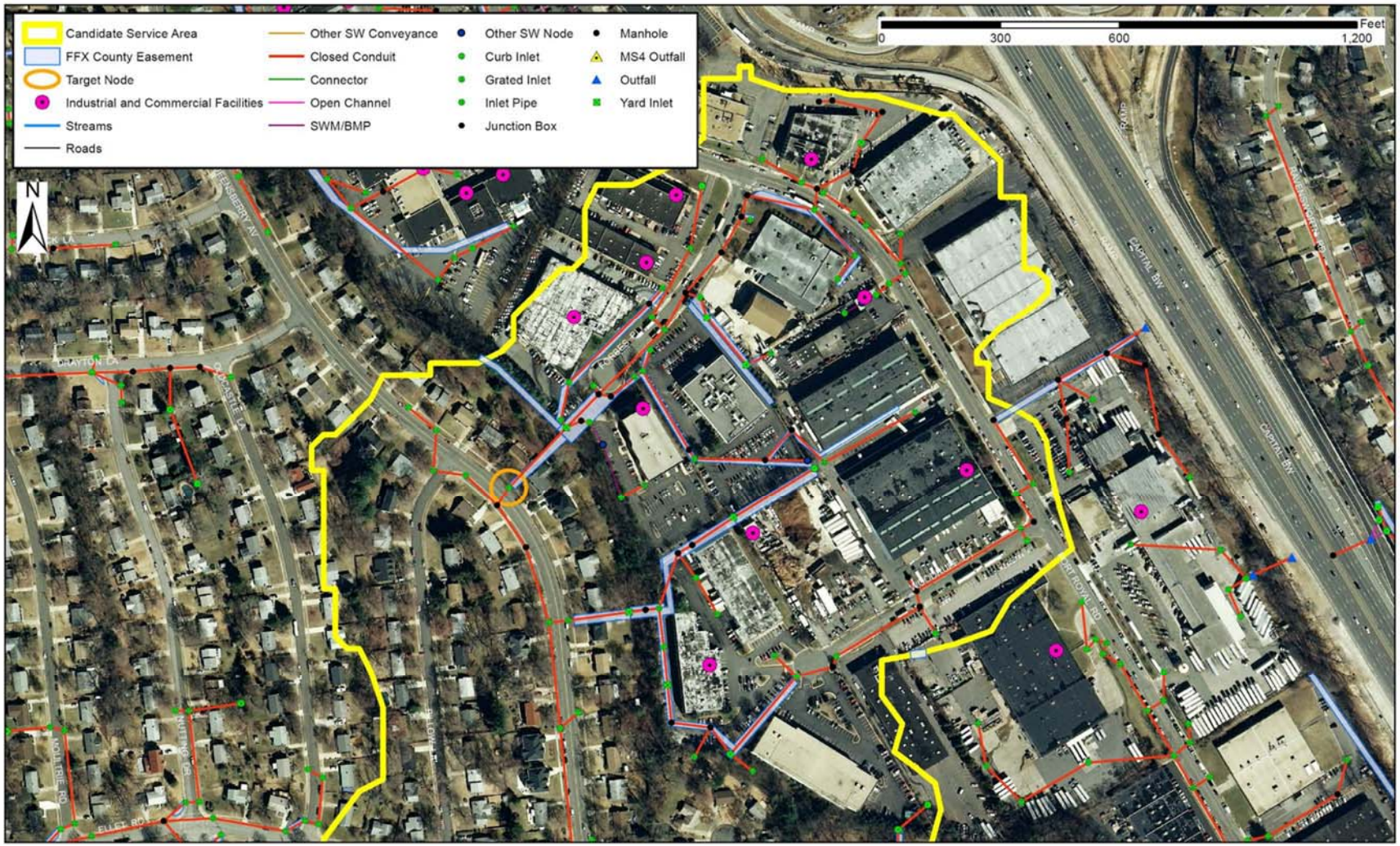


STMN0723444697



STMN0792455798



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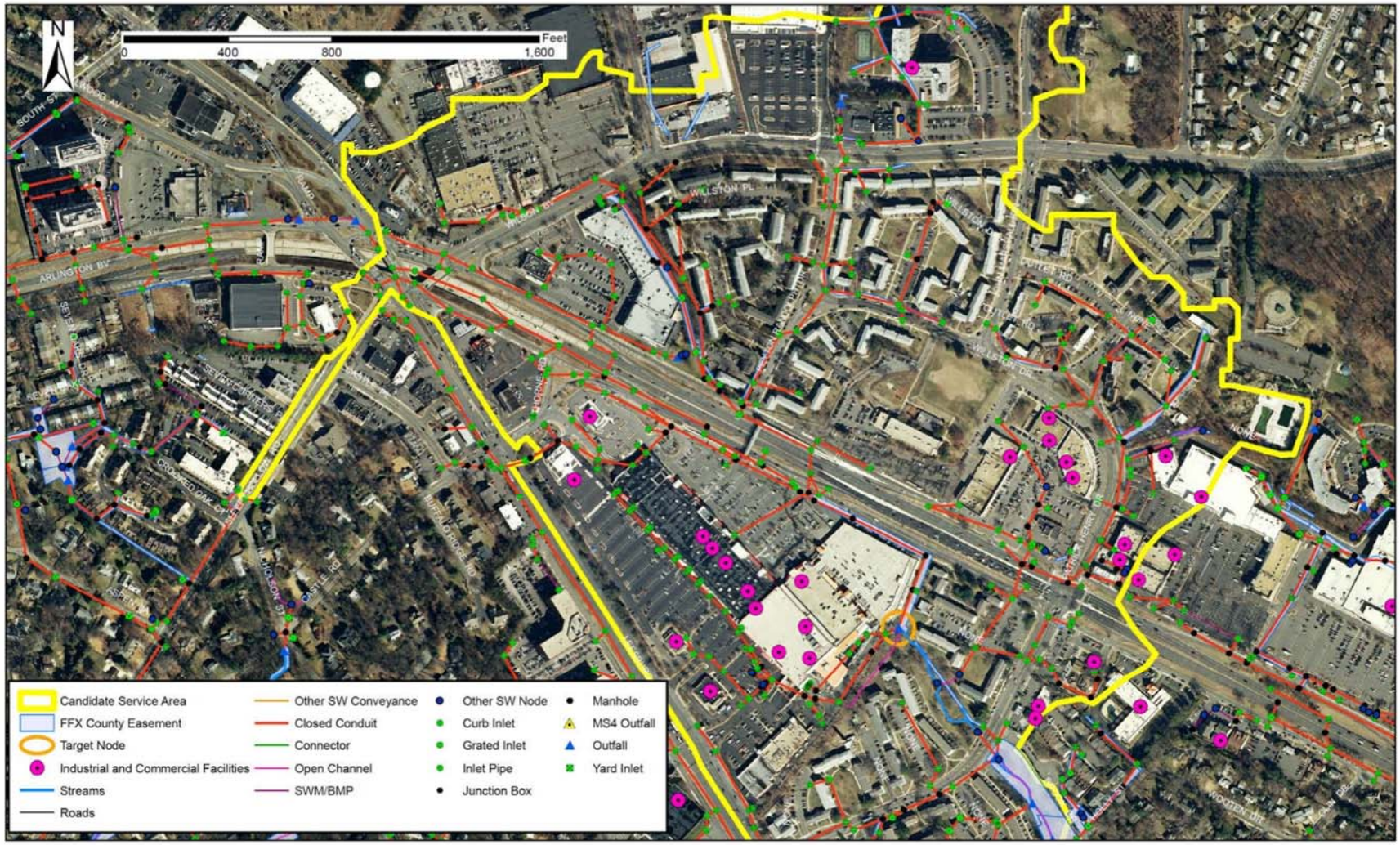

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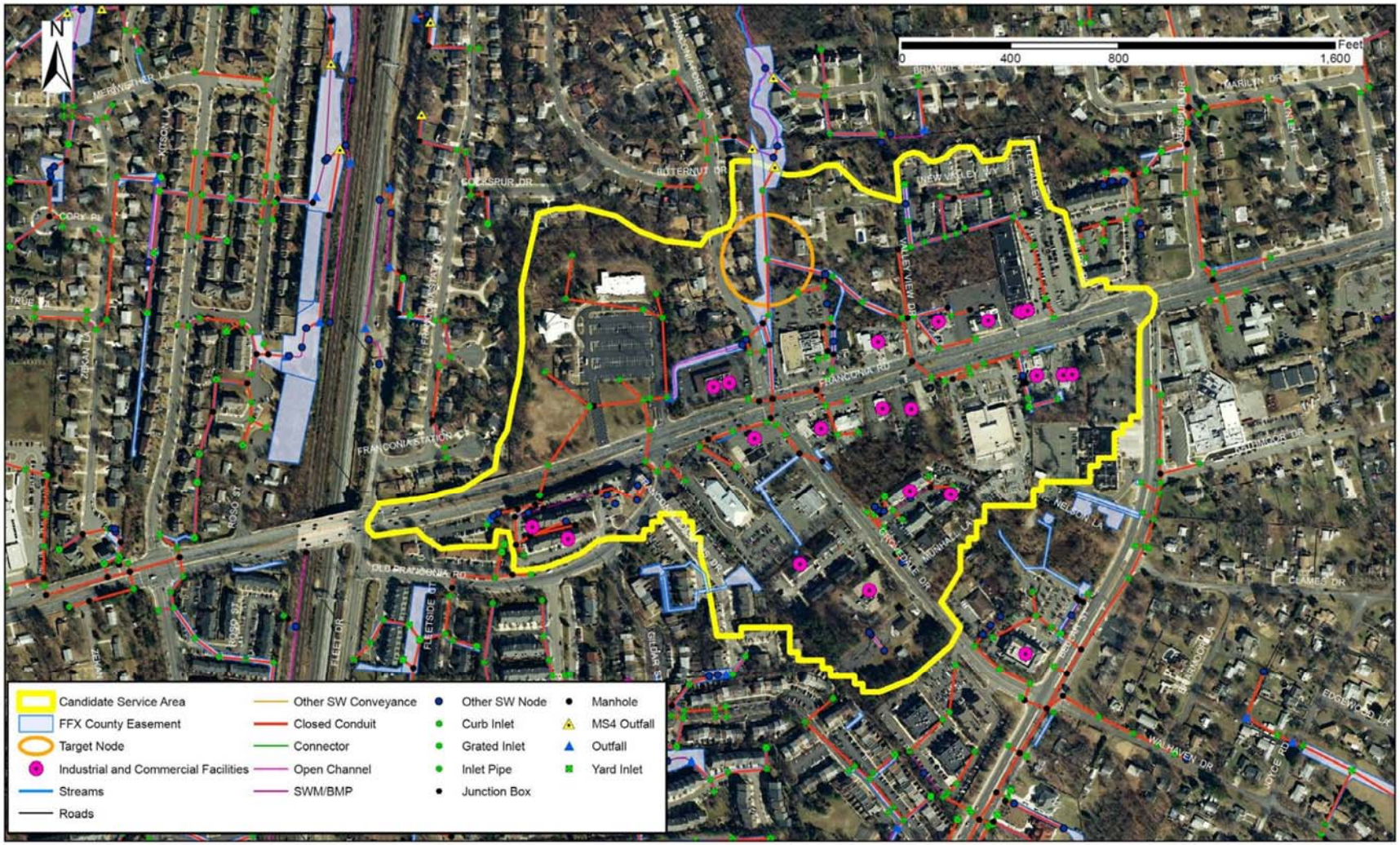

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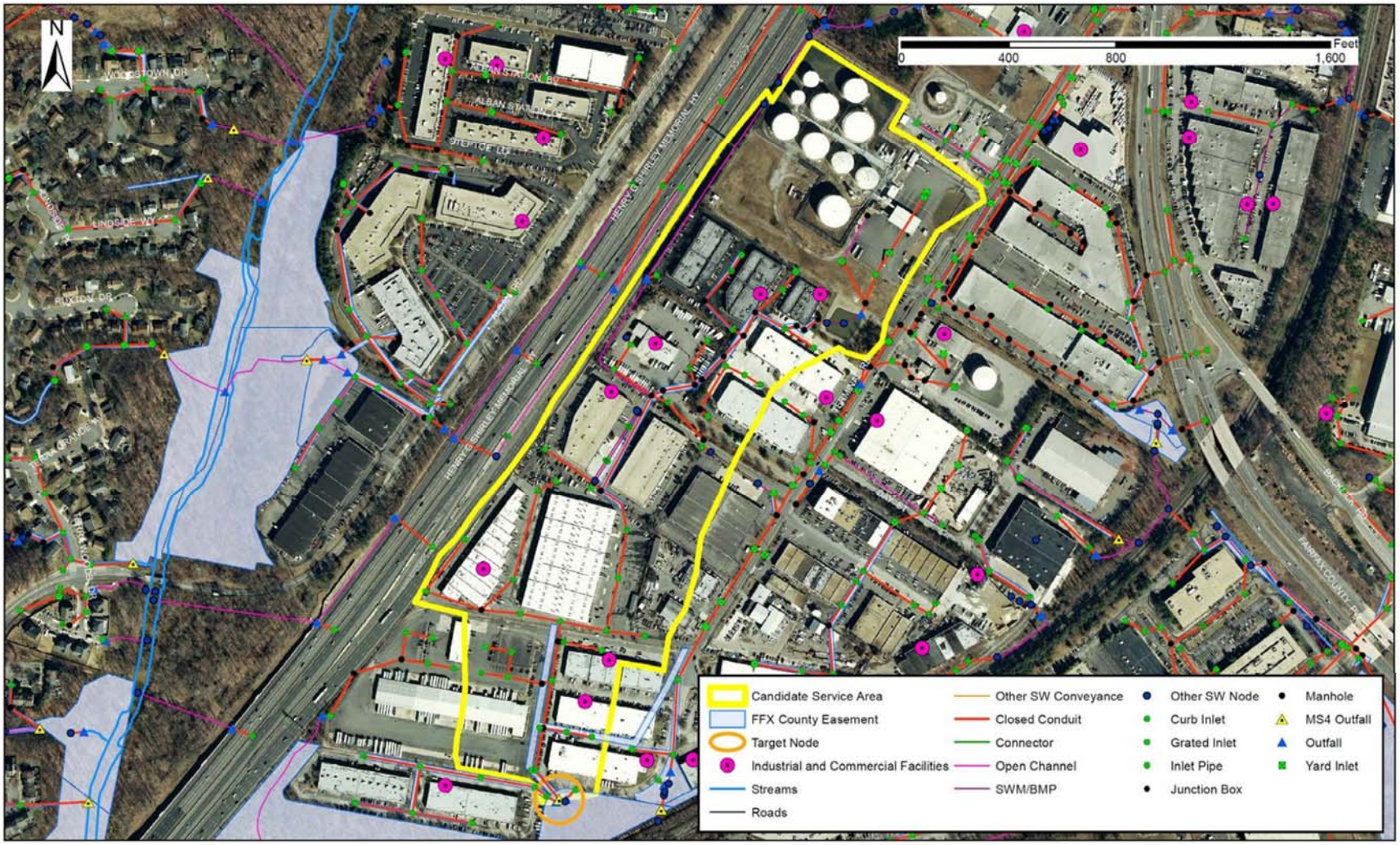
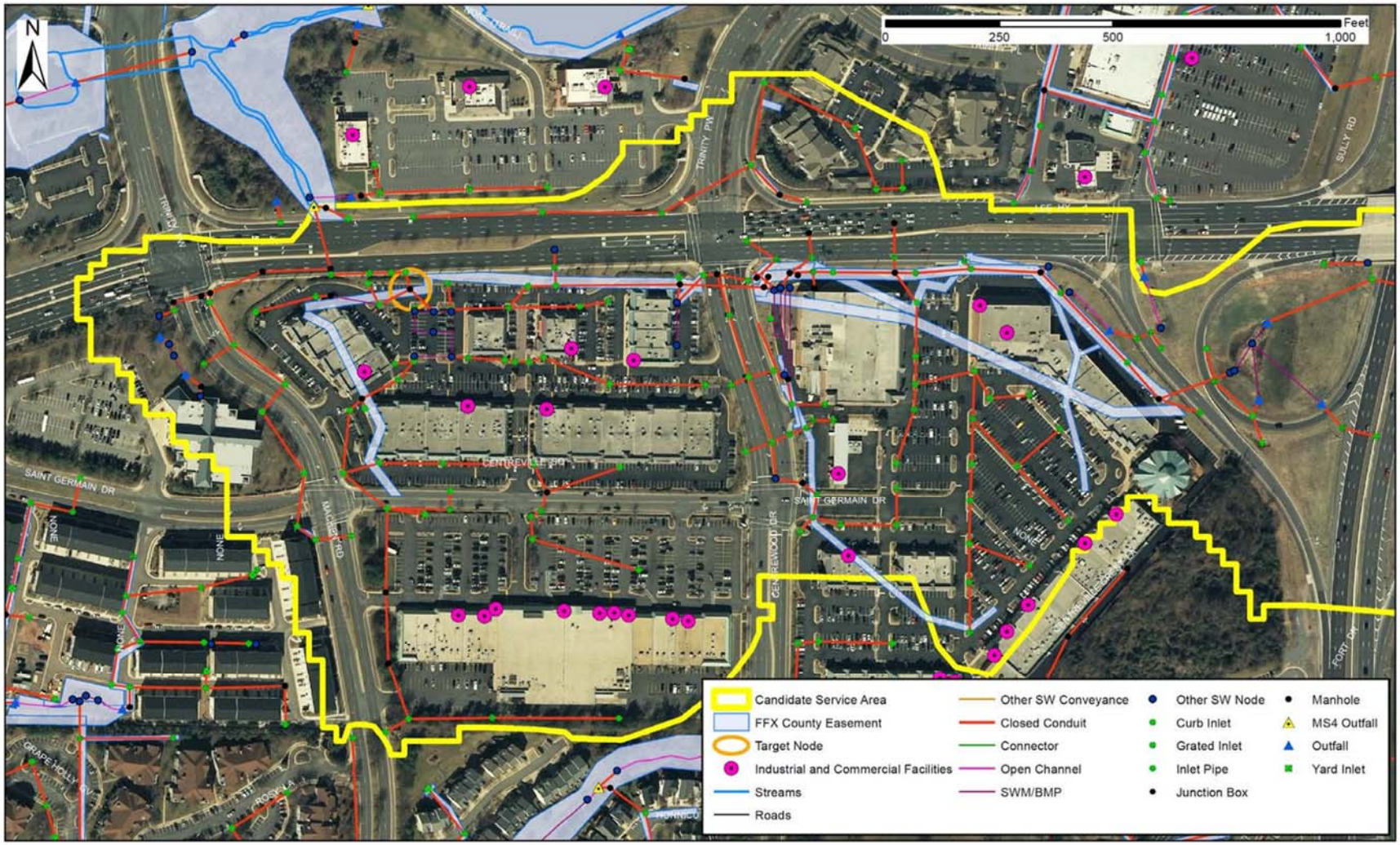
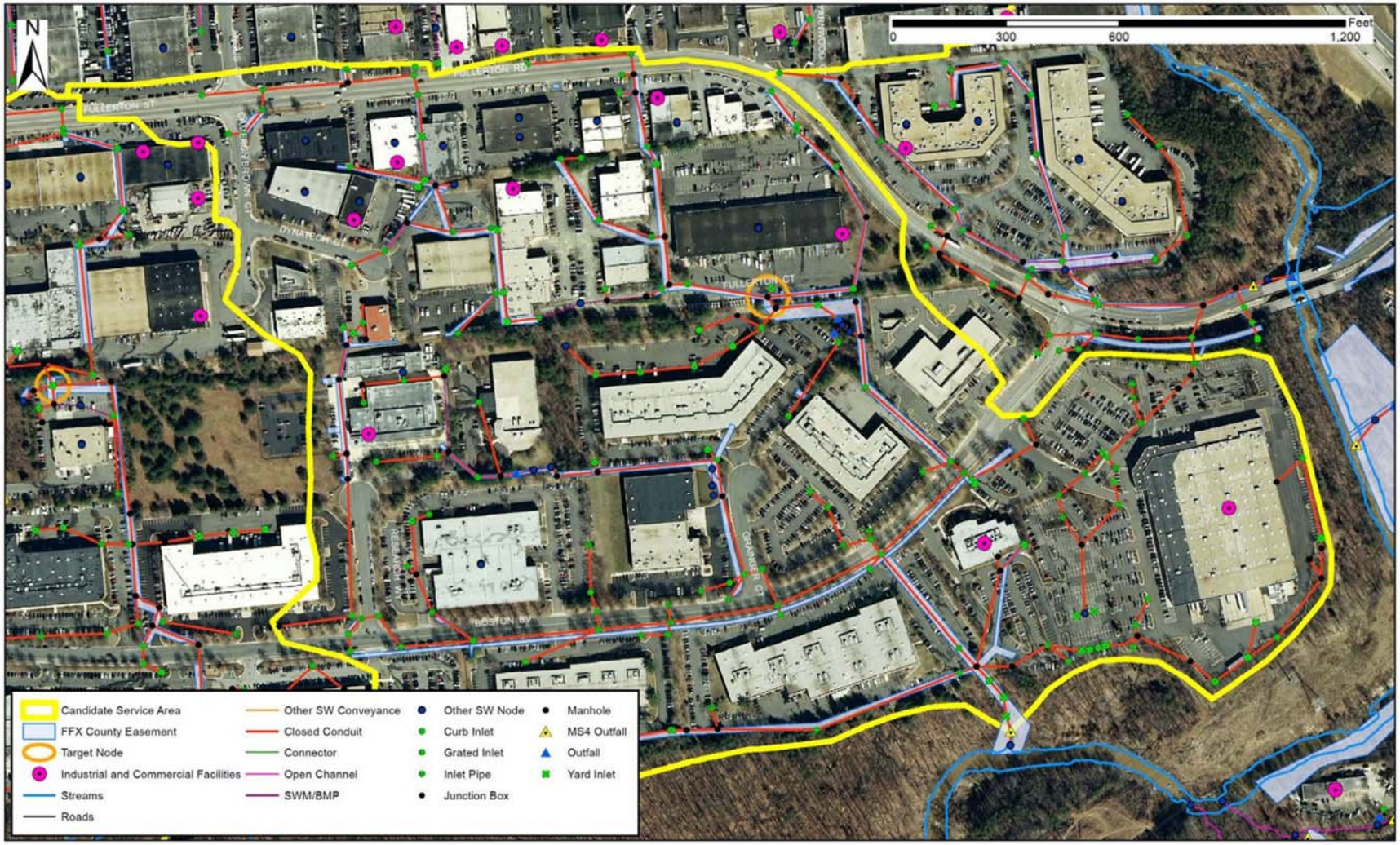


STMN0491419552

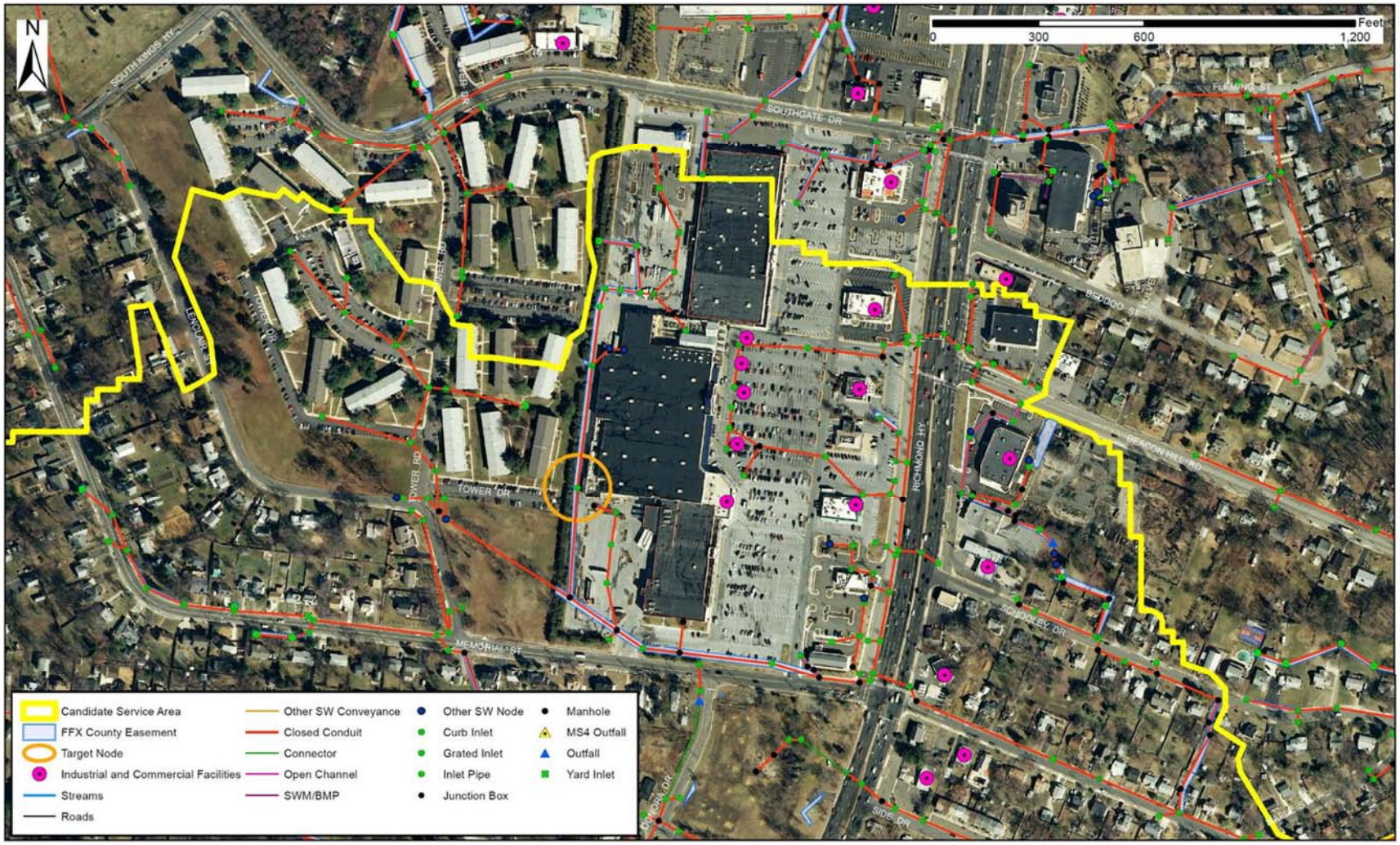
STMN0543047308



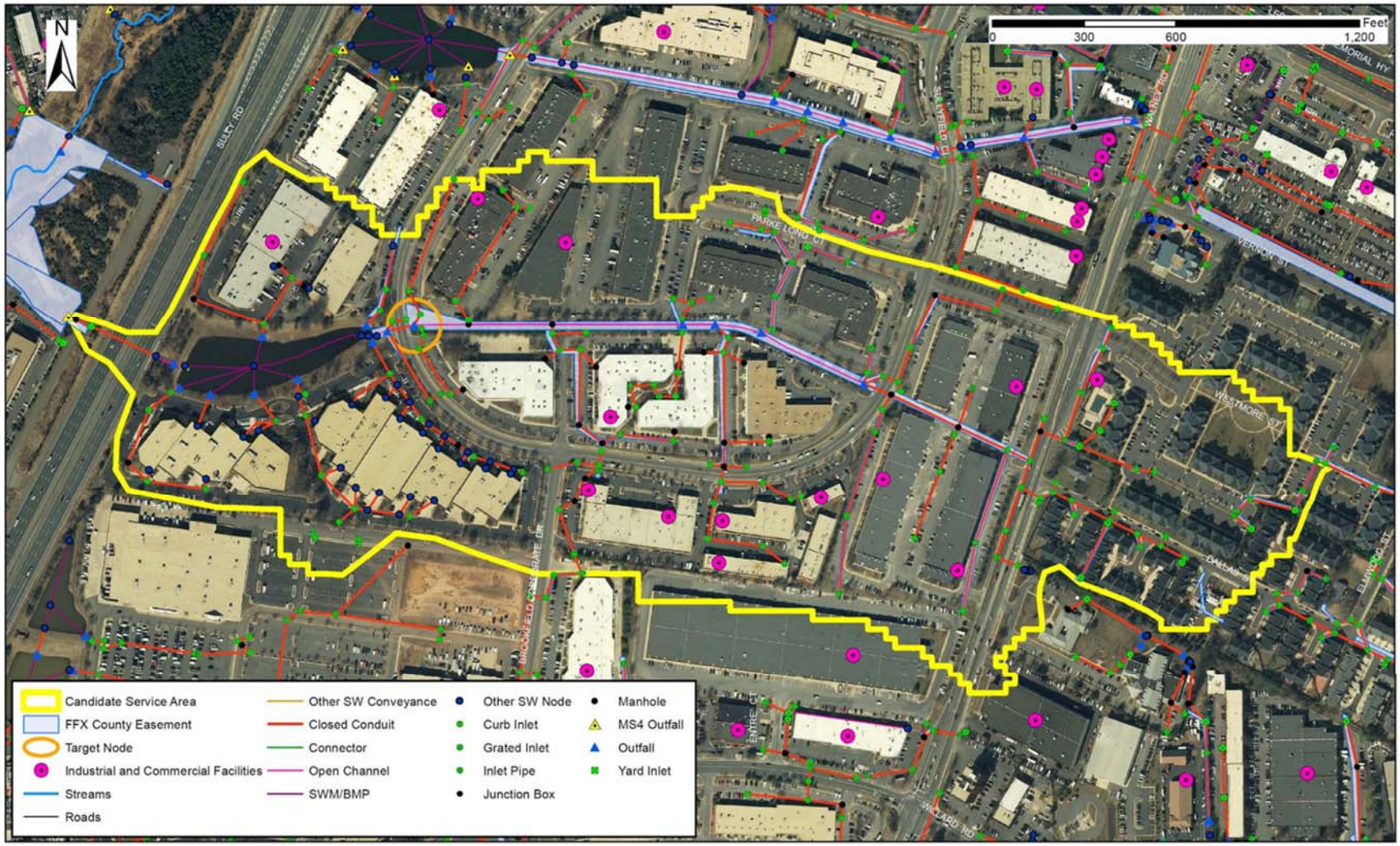
STMN0991488353



STMN0931471031



STMN0343030307



Fairfax County 2020 MS4 Program Plan and Annual Report

Appendix P13

Standard Operating Procedures for the MS4 Biological Stream Monitoring Program

VSMP Permit Number VA0088587
9-30-2020

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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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.

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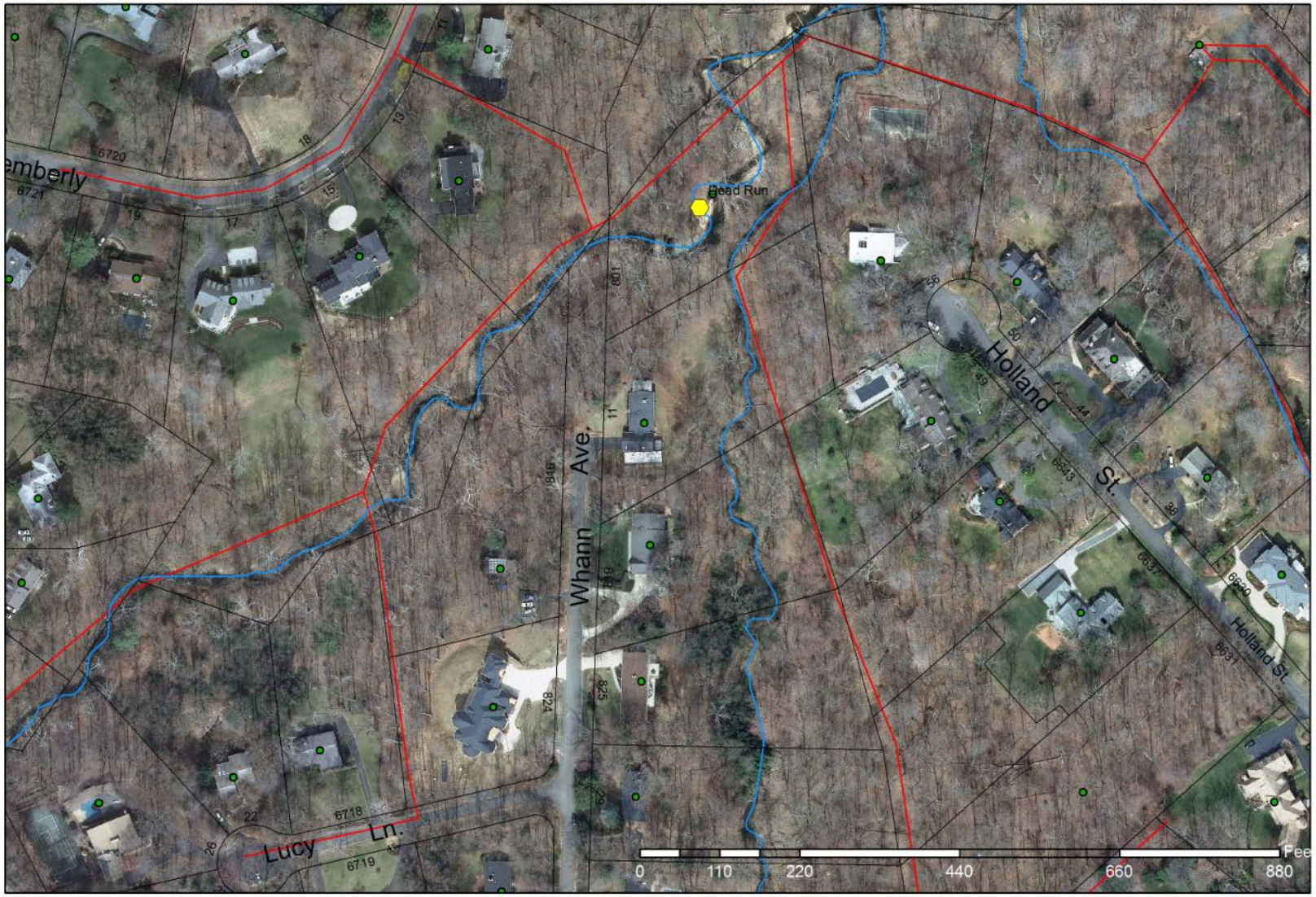
Wiggins, G. B. 1996. Larvae of the North American Caddisfly Genera (Trichoptera). Second Edition. University of Toronto Press Incorporated. Toronto, Ontario.

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

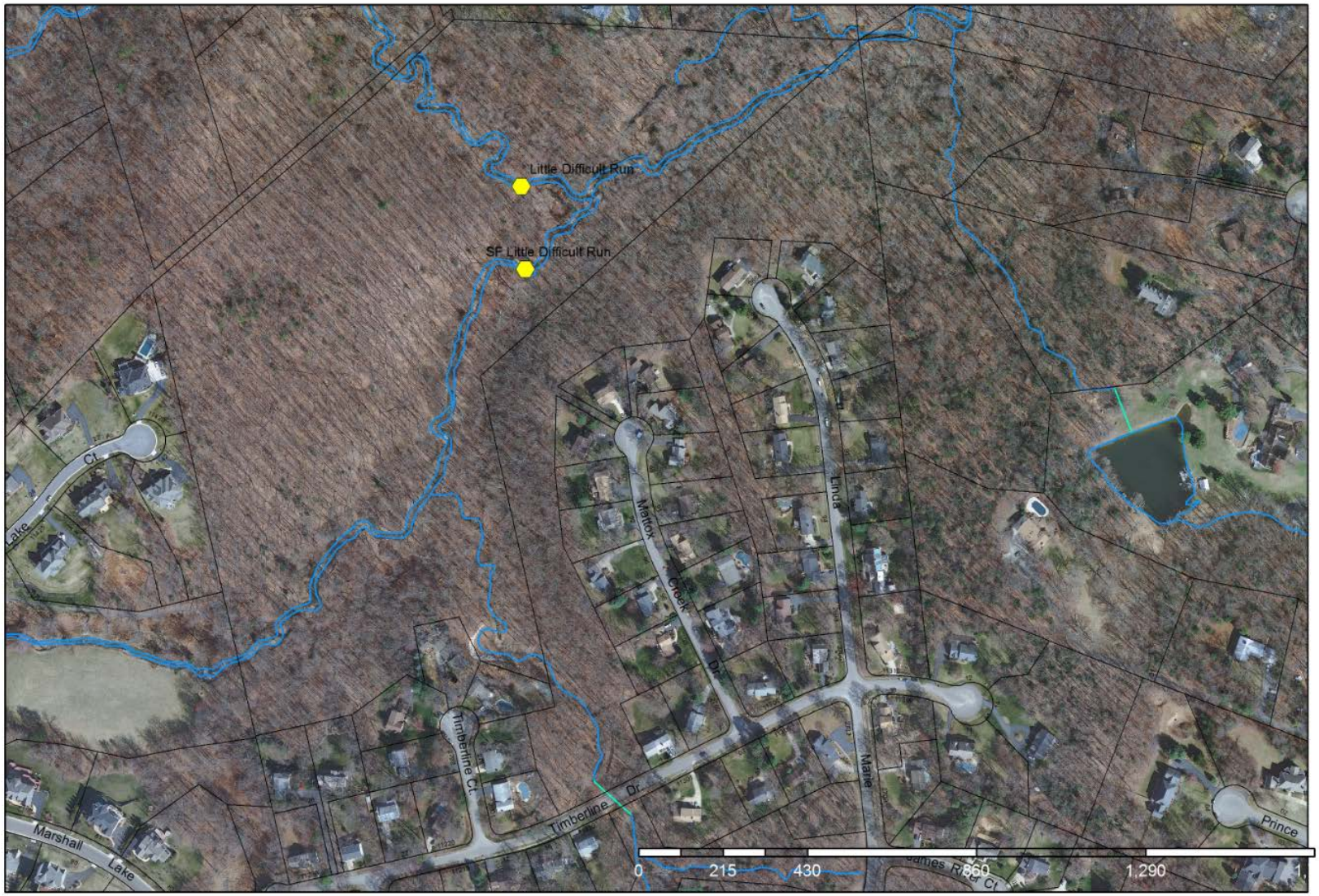


Difficult Run USGS Sites
Tax Map 47-1

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

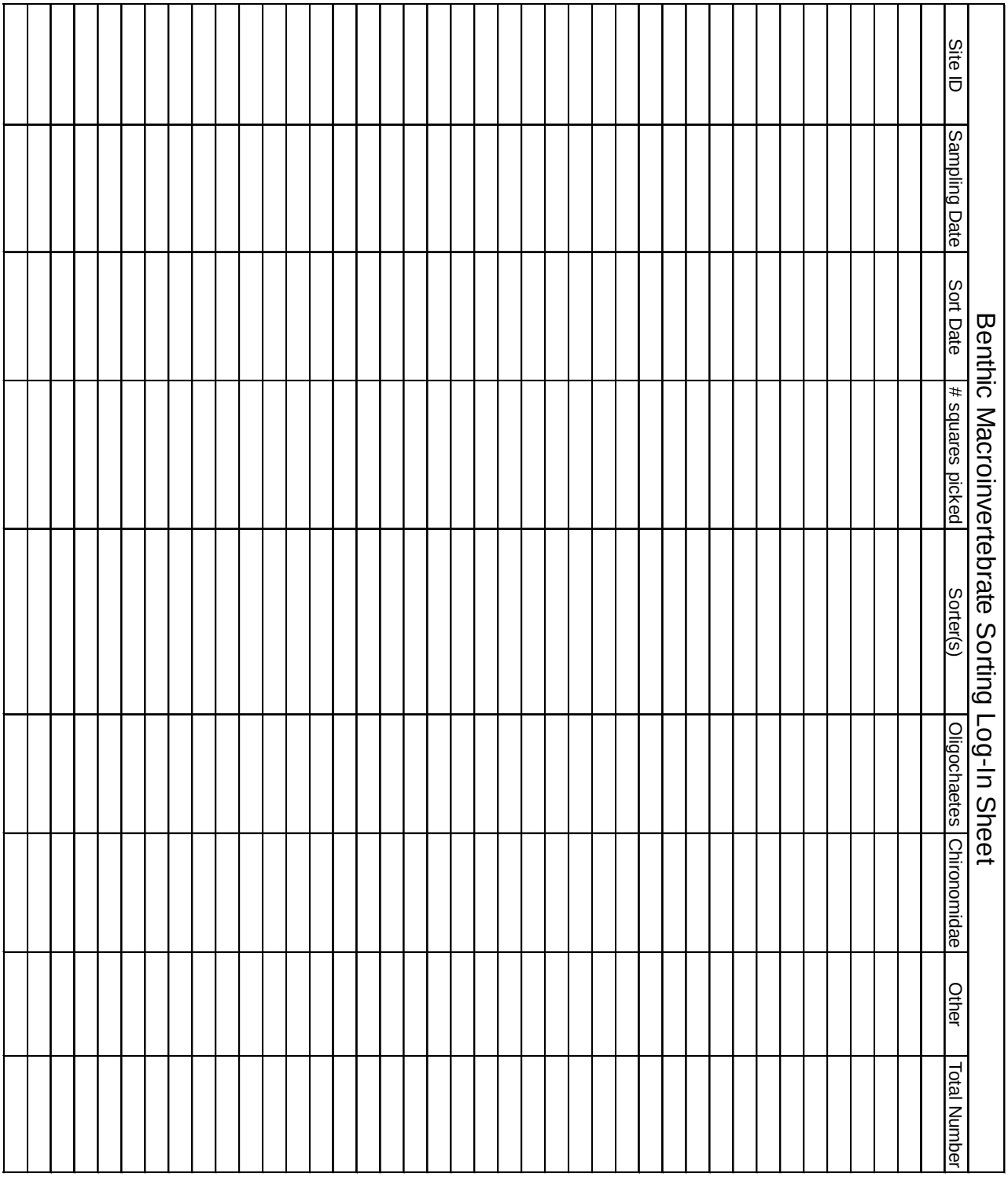
BENTHIC MS4 SAMPLE CHAIN OF CUSTODY FORM

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 2020 MS4 Program Plan and Annual Report

Appendix P14

Standard Operating Procedures for the MS4 In-Stream Monitoring Program

VSMP Permit Number VA0088587
9-30-2020

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

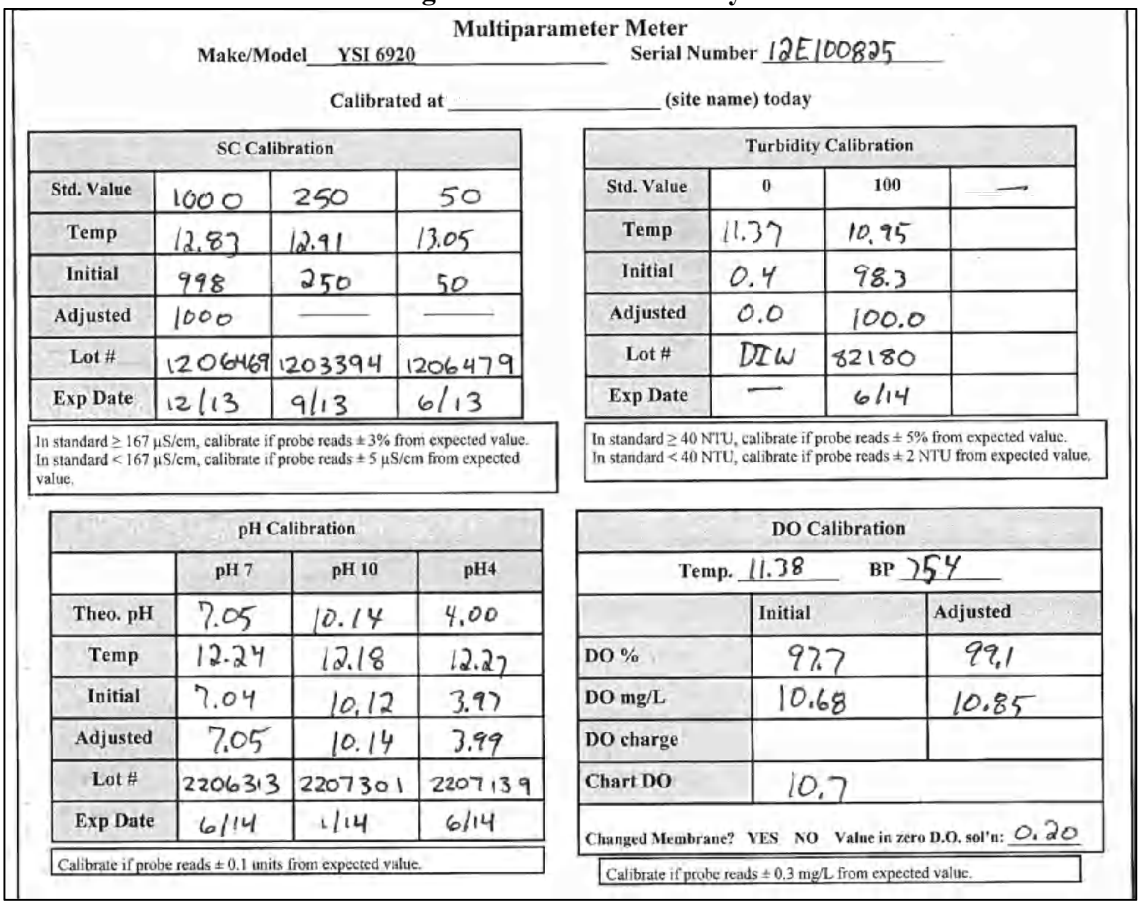
2. Water Quality Sonde Calibration

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

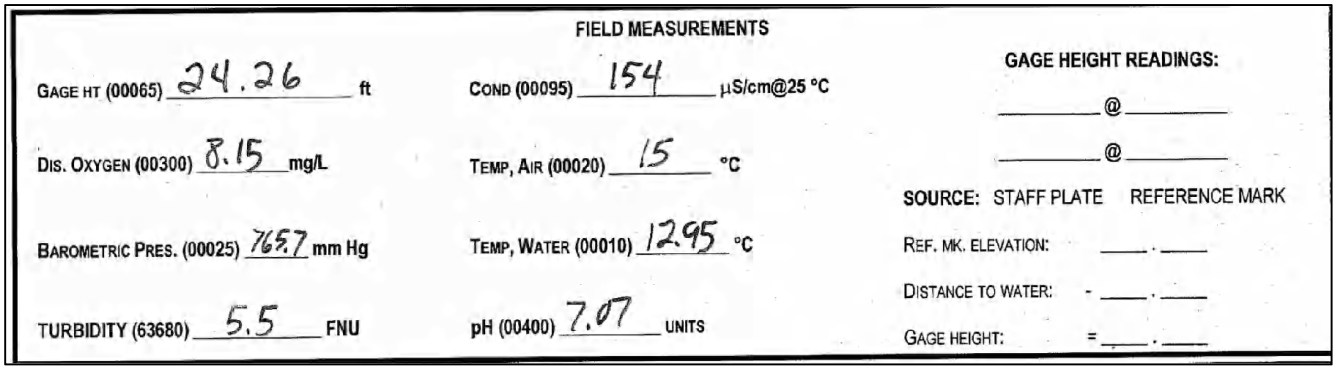
Some basic tips for using the water quality sonde in field monitoring:

- 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.

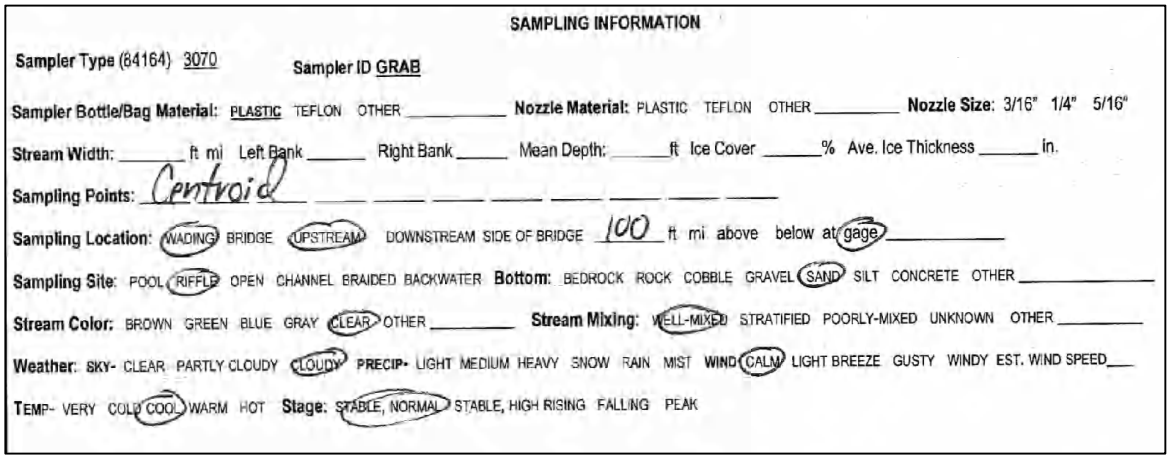
Figure 2: Field Measurements



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

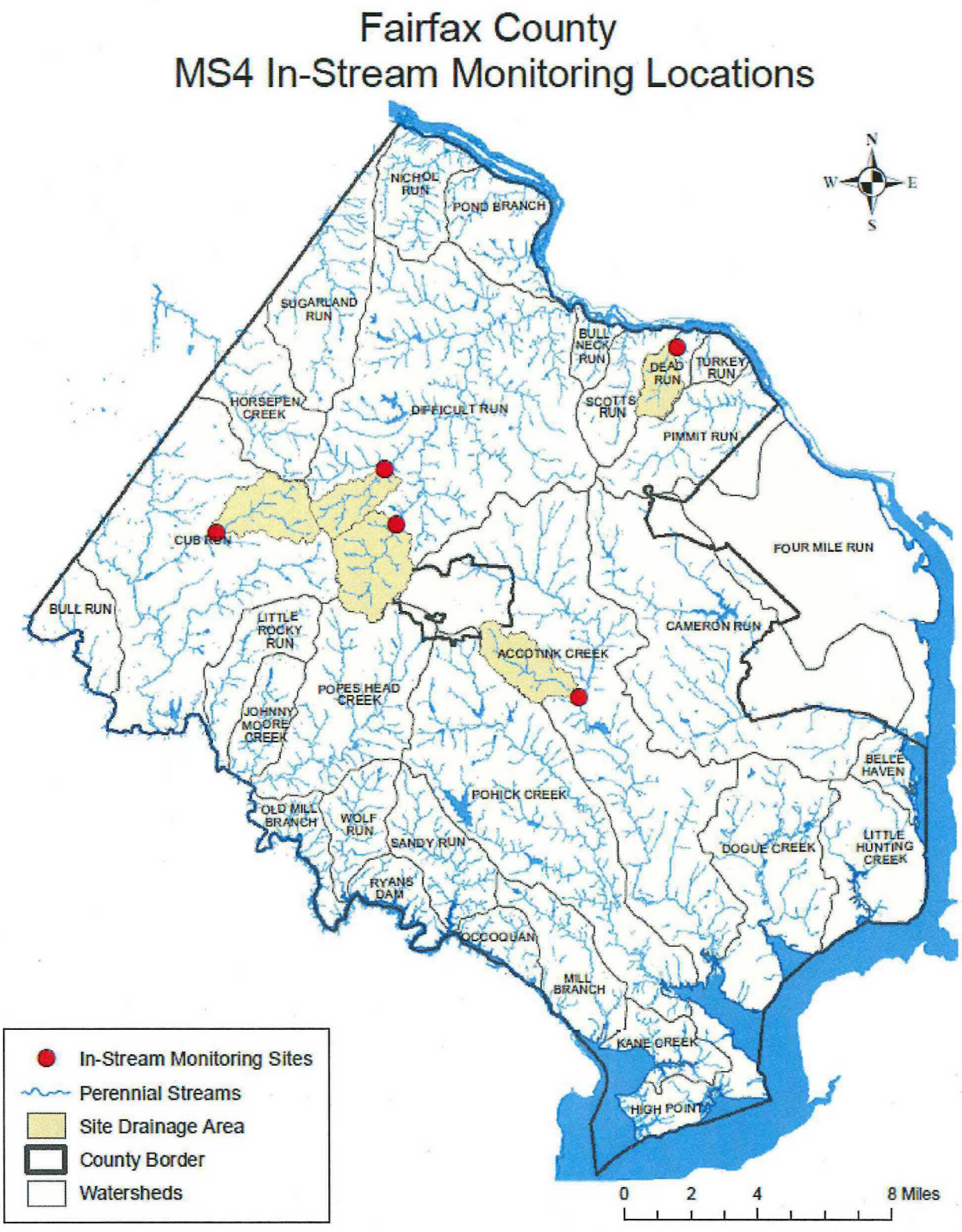
A. Fairfax County MS4 In-Stream Monitoring Locations

B. Health and Safety Guidance for In-Stream Monitoring Field Work

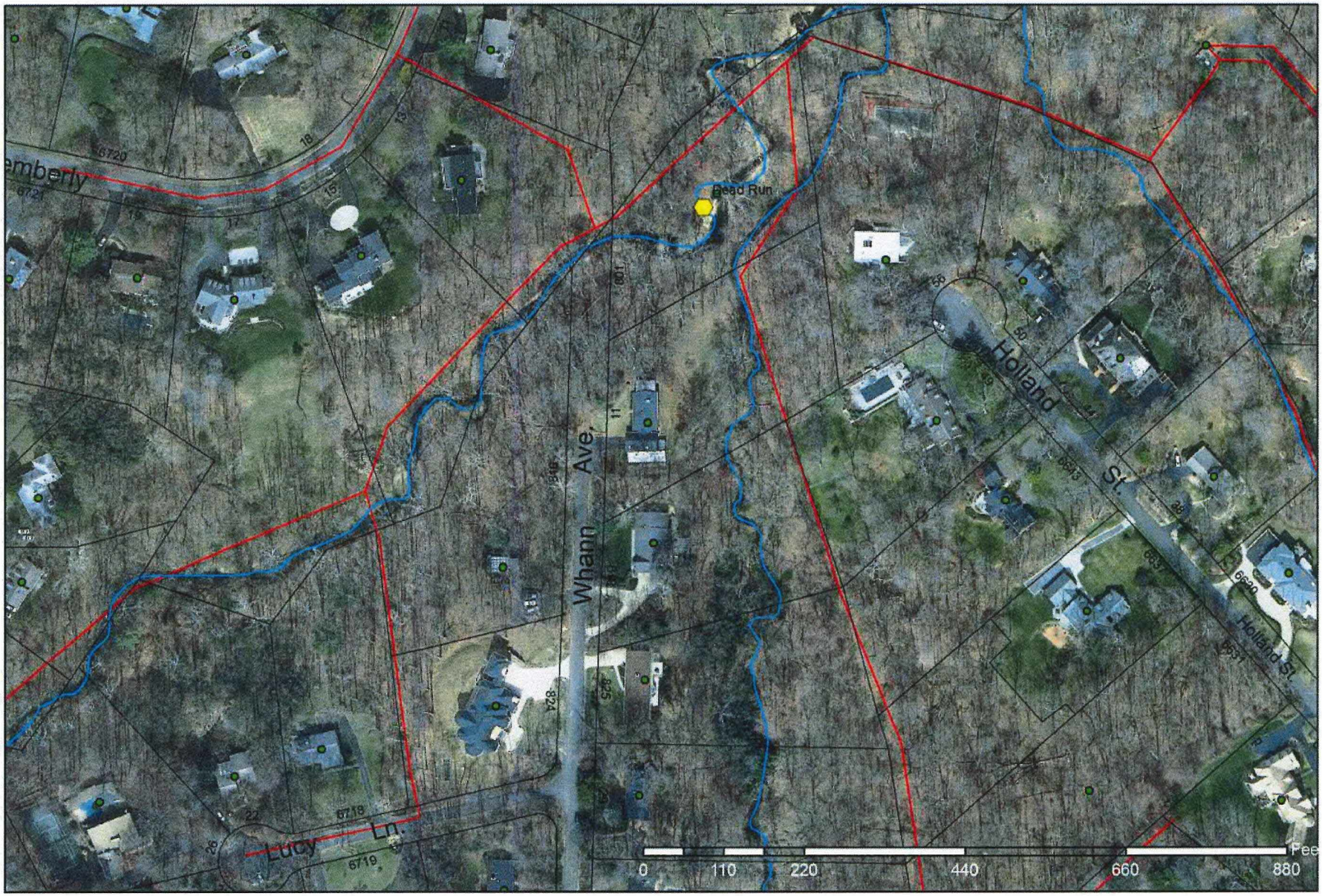
C. Calibration Procedures for Water Quality Field Instruments

D. In-Stream Monitoring Field Form

Appendix A: Fairfax County MS4 In-Stream Monitoring Locations



Dead Run USGS Sites
Tax Map 21-2

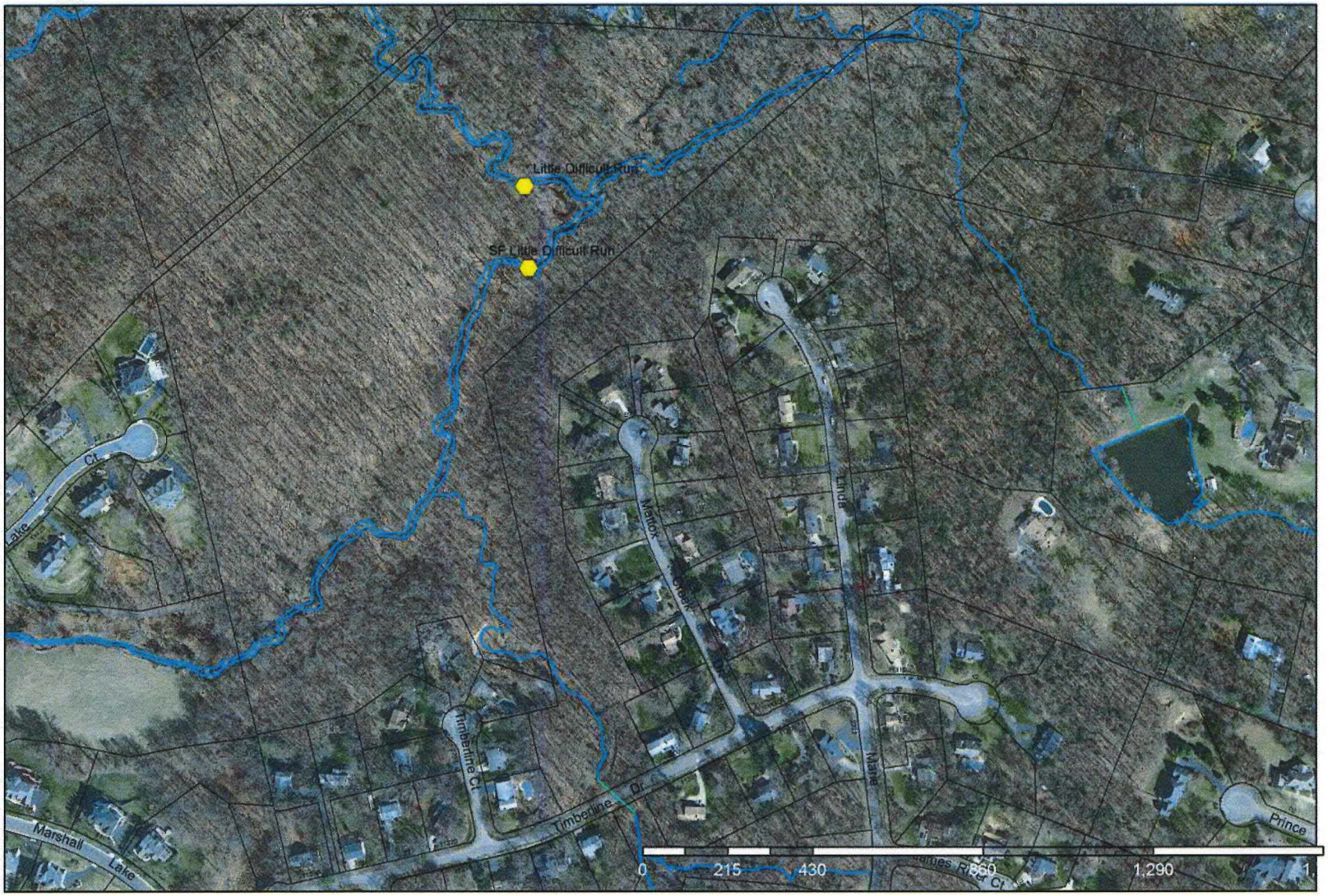


Difficult Run USGS Sites
Tax Map 47-1

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 2020 MS4 Program Plan and Annual Report

Appendix P15

Floatables Monitoring Standard Operating Procedures

VSMP Permit Number VA0088587
9-30-2020

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: Approval: 3.30.17

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 at the five (5) sites selected to be representative of land use in 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

1. MS4 Service Area

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.

2. Categorization of MS4 Contributing Drainage Area

One key factor in selecting candidate areas for monitoring is land use, as represented by the County's land use codes for parcels. 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 used to select sites for the floatables monitoring program are HDR, MDR, LDR, institutional, and commercial.

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 Protocol

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 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 (greater than 60%) for each service area.

Step 3: Exclude service areas with very small contributing drainage areas (< 5 acres).

Step 4: Select stream segments with at least 100 feet below the outfall that are free of other outfalls or tributaries that are potential floatable sources.

Step 5: 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 6: Identify any nearby community groups that may help conduct stream cleanups, if needed.

Step 7: 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 9: 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.

c. 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.
- Perform field work in teams of at least two.
- 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 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 summarize 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 five areas on a quarterly basis. Cleanup events are conducted twice per year (spring and fall) at each monitoring location. These events are planned to engage local communities, provide education and outreach to target audiences, and to remove previously enumerated trash items for the next monitoring event. 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 store 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	Kate Bennett	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.	Wendy Cohen	703-951-3497

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

LUC	Detailed Land Use Description	Generalized Value	Sub Category
071	Rooming and boarding houses	HIGH DENSITY RESIDENTIAL	Government/Institution
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

LUC	Detailed Land Use Description	Generalized Value	Sub Category
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
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

LUC	Detailed Land Use Description	Generalized Value	Sub Category
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
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

LUC	Detailed Land Use Description	Generalized Value	Sub Category
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
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

LUC	Detailed Land Use Description	Generalized Value	Sub Category
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 2020 MS4 Program Plan and Annual Report

Appendix R1

FY 2021 Fairfax County Adopted Budget Plan
(Vol.2), Stormwater Services Budget

VSMP Permit Number VA0088587
9-30-2020

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. In FY 2014, a five-year spending plan was approved to gradually increase both funding and staffing for the Stormwater Program. The five-year plan was developed to support anticipated regulatory increases through a phased approach and was supported by increasing the service district rate by $0.0025 per year, a little over $1 per month for the median single-family house. Since FY 2010, staff has made significant progress in the implementation of watershed master plans, public outreach efforts, stormwater monitoring activities and operational maintenance programs related to existing storm drainage infrastructure including stormwater conveyance, quality improvements, and regulatory requirements.

An ultimate rate of $0.0400 per $100 of assessed value had been estimated to be required to fully support the stormwater program in the future; however, staff is currently evaluating the long-term requirements for an expanded program. Some of the additional requirements under evaluation include debt service to support the Board's approval of the dredging of Lake Accotink, the anticipation of additional flooding 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. Staff will return to the Board of Supervisors at a future Budget Committee meeting to define the needs and opportunities for FY 2022 and beyond.

While staff continues to further evaluate the long-term requirements for the Stormwater Program, the FY 2021 rate will remain the same as the FY 2020 Adopted Budget Plan level of $0.0325 per $100 of assessed value. Actual revenue collected in recent years has been higher than projected as a result of increases in property values throughout the County. Based on capital project costs and projected revenues, no rate increase was recommended for FY 2021. 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, additional requirements in the new 2020 Municipal Separate Storm Sewer System (MS4) permit and several

of the enhancements noted above. On an annual basis, staff will continue to evaluate the program, analyze future requirements, and develop Stormwater operational and capital resource needs.

The Stormwater spending plan supports a number of goals. First, it will provide for constructing and operating stormwater management facilities, including stream restoration, new and retrofitted ponds, and installation of Low Impact Development (LID) techniques, required to comply with the federally mandated Chesapeake Bay Program. The Chesapeake Bay program requires the County to reduce phosphorus, nitrogen, and sediment loads to the Potomac River and Chesapeake Bay. MS4 Permit holders must achieve five percent of the required reductions within the current five-year permit cycle, 35 percent of the required reductions in the second five-year permit cycle, and 60 percent of the required reductions in the third five-year permit cycle. The Capital Improvement Program includes a gradual increase that will help meet these requirements. Second, the funding will aid in the planning, construction, and operation of stormwater management facilities required to comply with state established local stream standards by reducing bacteria, sediments, and Polychlorinated Biphenyl (PCB) entering local streams. It is estimated that between 70 and 80 percent of the streams in the County will likely be considered impaired by the Virginia Department of Environmental Quality (VDEQ). Third, the increase will support the federally mandated inspection, mapping, monitoring, maintaining, and retrofitting of existing stormwater facilities. The County currently owns and maintains over 2,350 stormwater management facilities that are valued at over $500 million and inspects approximately 4,900 private facilities. Fourth, the funding will aid in collecting stormwater data and reporting the findings; providing community outreach and education, supporting new training programs for employees; and developing new Total Maximum Daily Loads (TMDL) Action Plans for impaired streams related to the MS4 Permit requirements. Fifth, the increase will improve dam safety by supporting annual inspections of 20 state-regulated dams in the County 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. Finally, the increase will facilitate maintaining, rehabilitating, and reinvesting in the County's conveyance system. The County's conveyance system includes 65,000 structures and 1,500 miles of pipes and improved channels, valued at more than $1 billion.

The FY 2021 levy of $0.0325 will generate $85,089,976, supporting $24,766,085 for staff and operational costs; $59,198,891 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

Fund 40100, Stormwater Services, provides 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

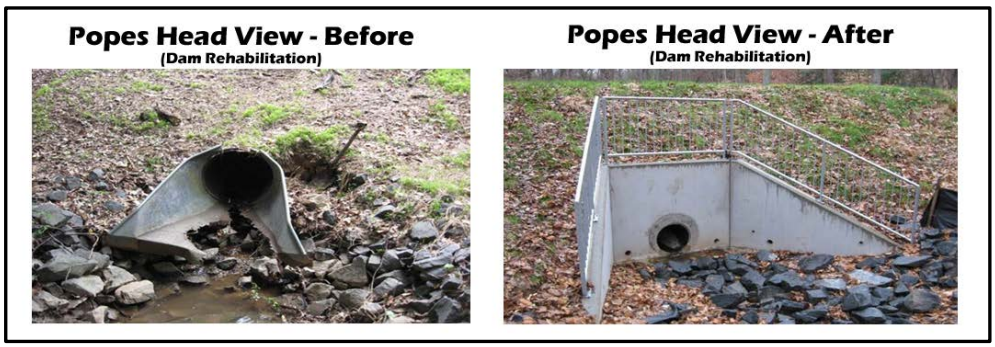
level of environmental, ecological, and socio-economic services provided by the County's tree canopy. The UFMD is aligned with the mission of Stormwater Services as it strives to "improve water quality and stormwater management through tree conservation." Tree canopy and forest soils function to mitigate significant levels of water pollution and stormwater runoff.

Stormwater 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 2021.

Dam Safety and Facility Rehabilitation

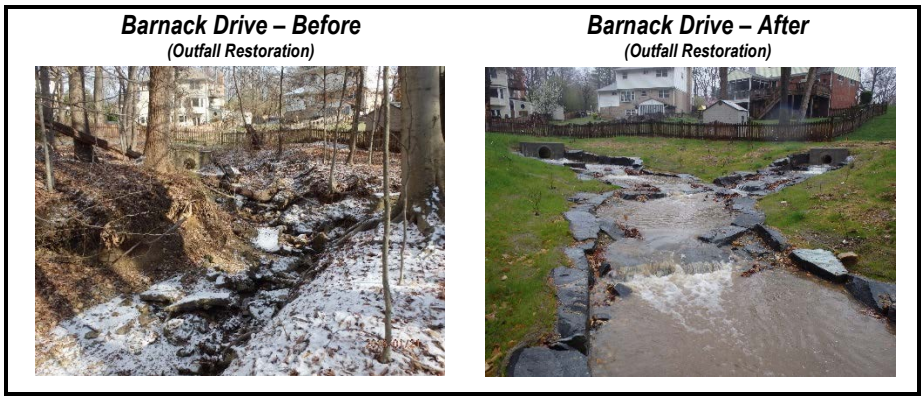
There are currently more than 7,250 stormwater management facilities in service that range in size from small rain gardens to large state regulated flood control dams. The County is responsible for inspecting both County owned and privately-owned facilities and for maintaining County owned facilities. This inventory increases annually and is projected to continually increase as new development and redevelopment sites are required to install stormwater management controls. This program maintains the control structures and dams that control and treat the water flowing through



County owned facilities. 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 2021, 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 were in complete failure, and an additional 15 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 improved 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 2021, 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. In addition, TMDL requirements for local streams and the Chesapeake Bay are the regulatory process 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. Compliance with the Chesapeake Bay TMDL requires that the County should undertake construction of new stormwater facilities, retrofit existing facilities and properties, and increase maintenance. 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 $28.7 million is included for Stream and Water Quality Improvements in FY 2021.

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 2021.

Flood Prevention in the Huntington Area

This program will address the health and public safety concerns associated with the recurring flooding in the Huntington area by designing and constructing a levee and community drainage improvements that will ensure the safe operation and long-term sustainability of this critical piece of infrastructure. Initial funding of $30.0 million was approved as part of the 2012 Stormwater Bond Referendum. The bond amount approved by the voters was based on a preliminary design by the US Army Corps of Engineers (USACE). The current, updated total project estimate is $44.1 million. To accommodate funding beyond that currently approved, a strategy was developed using a portion of revenue from the Stormwater Service District allocated to the Stream and Water Quality Improvements Program. The strategy reallocated a total of $10.0 million over a four-year period. Use of the Stormwater Service District for this project is consistent with the goals of the program to address structural flooding and other critical community stormwater needs. No funding is needed for Flood Prevention in the Huntington area in FY 2021.

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 $0.8 million is included for the Stormwater Allocations to Towns project in FY 2021.

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.

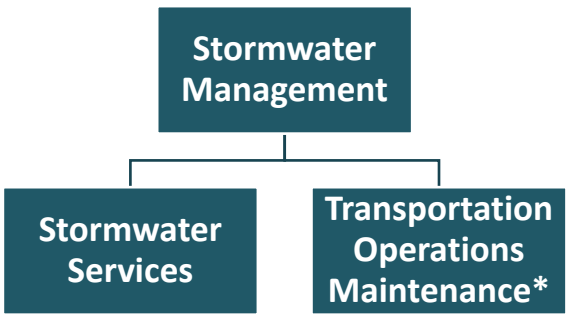
Accordingly, the work of NVSWCD supports many of the environmental efforts set forth in the Board of Supervisors' Environmental Excellence 20-year Vision Plan. The goal of the NVSWCD is to continue to improve the quality of the environment and general welfare of the citizens of Fairfax County by providing 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 2021 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 2021 funding of $0.2 million is included in Fund 40100 for the County contribution to the OWMP.

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 is ongoing to address the potential 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. The FY 2021 Stormwater Service District rate remains the same as in FY 2020, which aligned with the County Executive's recommended budget. It is not envisioned that significant fiscal adjustments to this program will be necessary because 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 2019 Actual	FY 2020 Adopted	FY 2020 Revised	FY 2021 Advertised	FY 2021 Adopted
FUNDING					
Expenditures:					
Personnel Services	$18,676,454	$21,497,378	$21,497,378	$24,231,595	$22,359,404
Operating Expenses	4,097,184	3,994,384	4,106,392	3,197,136	3,182,636
Capital Equipment	765,382	1,085,000	1,833,966	1,402,000	1,354,000
Capital Projects	46,212,524	56,382,403	142,404,696	57,264,200	59,198,891
Subtotal	$69,751,544	$82,959,165	$169,842,432	$86,094,931	$86,094,931
Less:					
Recovered Costs	($2,757,035)	($2,129,955)	($2,129,955)	($2,129,955)	($2,129,955)
Total Expenditures	$66,994,509	$80,829,210	$167,712,477	$83,964,976	$83,964,976
AUTHORIZED POSITIONS/FULL-TIME EQUIVALENT (FTE)					
Regular	187 / 187	190 / 190	202 / 202	209 / 209	202 / 202

FY 2021 Funding Adjustments

The following funding adjustments from the FY 2020 Adopted Budget Plan are necessary to support the FY 2021 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 12, 2020.

Other Post-Employment Benefits ($113,722)

A decrease of $113,722 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 2021 Adopted Budget Plan.

Personnel Services Adjustment $64,000

An increase of $64,000 will support department-wide information technology, human resources, communications and business support functions and additional operating expenses within Agency 25, Business Planning and Support. These functions were consolidated in order to better support the Department of Public Works and Environmental Services' (DPWES) four core business areas and ensure that services are provided in an integrated, "one department" approach and that all resources are utilized in an efficient manner. In addition, an amount of $911,748 is reallocated from Operating Expenses to Personnel Services in order to support this initiative.

Operating Expenses $100,000

An increase of $100,000 in Operating Expenses is included for a new partnership between the Urban Forestry Division and Virginia Tech's Departments of Biological Systems Engineering and Crop and Soil Environmental Sciences to create an integrated and collaborative research program to assess the practicalities of having trees in stormwater management Best Management Practices (BMPs).

Capital Equipment $269,000

Funding of $1,354,000 in Capital Equipment, an increase of $269,000 over the FY 2020 Adopted Budget Plan, is included for requirements associated with replacement equipment that has outlived its useful life and is critical to stormwater services activities. The replacement equipment includes: $620,000 to replace four dump trucks that support 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; $250,000 to replace a construction excavator, $200,000 to replace a wheel loader, $75,000 to replace a skid steer track loader, $60,000 to replace a utility work machine, and $40,000 to replace a backhoe loader to excavate work sites, load trucks with bulk material and move heavy objects to support emergency response projects; $50,000 to replace a vibratory roller to support the

repair of roadways and asphalt trails; $32,000 to replace a data graph cut plot machine with a latex printer and a sovereign roll laminator to make County street name signs; and $27,000 to replace laboratory equipment including two stereomicroscopes and an electro fisher to support the collection and analysis of stream samples.

Capital Projects $2,816,488
Funding of $59,198,891 in Capital Projects, an increase of $2,816,488 over the FY 2020 Adopted Budget Plan, has been included in FY 2021 for priority stormwater capital projects.

Changes to FY 2020 Adopted Budget Plan

The following funding adjustments reflect all approved changes in the FY 2020 Revised Budget Plan since passage of the FY 2020 Adopted Budget Plan. Included are all adjustments made as part of the FY 2019 Carryover Review, FY 2020 Third Quarter Review, and all other approved changes through April 30, 2020.

Carryover Adjustments $83,984,382
As part of the *FY 2019 Carryover Review*, the Board of Supervisors approved funding of $83,984,382 based on the carryover of unexpended project balances in the amount of $80,118,949 and a net adjustment of $3,865,433. This adjustment includes the carryover of $860,974 in operating and capital equipment encumbrances and an increase to capital projects of $3,004,459. The adjustment to capital projects is based on the appropriation of the remaining operational savings of $1,169,115, miscellaneous revenues received in FY 2019 in the amount of $14,550, higher than anticipated revenues of $1,663,436, proffer revenues of $151,358 received in FY 2019 through the land development process that will support Stormwater projects and revenues of $6,000 collected through the land development process that will support tree preservation and planting projects in FY 2020.

Reclassification of Non-Merit Benefits Eligible Positions to Merit $0
As part of an ongoing Board-directed review of the County's use of limited-term staffing, 12/12.0 FTE new merit positions are included due to the reclassification of non-merit benefits-eligible positions to merit status. These are part of a total of 235 positions that were identified in the *FY 2019 Carryover Review* across all County agencies as candidates for possible conversion based on the tasks performed by each position and the hours worked by incumbents. No additional funding has been included as the work hours of these positions are expected to remain largely unchanged.

Third Quarter Adjustments $3,951,193
As part of the *FY 2020 Third Quarter Review*, the Board of Supervisors approved funding of $3,951,193 to appropriate anticipated grant revenue approved by the Board of Supervisors on September 24, 2019. The first grant agreement is between the Virginia Department of Environmental Quality (VDEQ) and Fairfax County to accept funds of $2,154,392 from the Stormwater Local Assistance Fund (SLAF) to support the design and construction of the Difficult Run Tributary at Brittenford stream restoration project. The second grant agreement is between the Virginia Department of Environmental Quality (VDEQ) and Fairfax County to accept funds of $1,796,801 from the Stormwater Local Assistance Fund (SLAF) to support the design and construction of the Turkey Run at Truro stream restoration project.

Position Detail

The FY 2021 Adopted Budget Plan includes the following positions:

STORMWATER SERVICES – 202 Positions			
Maintenance and Stormwater Management (MSMD) Administration			
1	Director, Maintenance and SW	1	Information Technology Tech. III
1	HR Generalist II	1	Safety Analyst II
1	HR Generalist I	1	Safety Analyst I
1	Network/Telecom. Analyst II	1	Administrative Assistant IV
1	Network/Telecom. Analyst I	2	Administrative Assistants III
Finance – Wastewater and Stormwater			
1	Financial Specialist IV	1	Financial Specialist I
1	Financial Specialist II	2	Administrative Assistants III
Contracting Services/Material Support			
1	Material Mgmt. Specialist III	1	Financial Specialist II
2	Contract Analysts I	1	Engineering Technician III
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	Engineering Technician I
2	Engineers III	1	Project Manager II
1	Ecologist III	3	Project Managers I
1	Ecologist II	1	Assistant Project Manager
Field Operations			
2	Env. Services Supervisors	10	Heavy Equipment Operators
1	Public Works-Env. Serv. Manager	11	Motor Equipment Operators
1	Senior Environmental Specialist	3	Masons
2	Environmental Services Specialists	1	Vehicle Maintenance Coordinator
4	Senior Maintenance Supervisors	4	Engineering Technicians III
8	Maintenance Supervisors	1	Carpenter II
3	Maintenance Crew Chiefs	2	Equipment Repairers
12	Senior Maintenance Workers	1	Welder II
1	Maintenance Worker	1	Welder I
1	Administrative Assistant II	1	Trades Supervisor
Stormwater Infrastructure Branch			
1	Public Works-Env. Serv. Manager	2	Engineering Technicians II
3	Engineers IV	1	Engineering Technician I
4	Engineers III	1	Project Manager I
1	Senior Engineering Inspector		
Transportation Infrastructure Branch			
1	Engineer V	3	Project Managers I
1	Engineer IV	2	Engineering Technicians II
1	Project Manager II		
Stormwater Planning Division			
1	Director, Stormwater Planning	1	Public Works-Env. Serv. Manager
1	Engineer V	1	Emergency Mgmt. Specialist III
4	Engineers IV	1	Planner IV
1	Senior Engineer III	2	Landscape Architects III
8	Engineers III	2	Engineering Technicians III
5	Project Managers II	1	Management Analyst II
1	Project Manager I	2	Code Specialists II
4	Ecologists IV	1	Financial Specialist II
5	Ecologists III	1	Financial Specialist I
3	Ecologists II	1	Contract Specialist II
2	Ecologists I	1	Assistant Contract Specialist
3	Project Coordinators	3	Administrative Assistants III

Urban Forestry			
1	Director, Urban Forestry Division	5	Urban Foresters II
1	Urban Forester IV	3	Urban Foresters I
4	Urban Foresters III	1	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 2017, FY 2018 and FY 2019. It is expected that this objective will also be met in FY 2020 and FY 2021. It should be noted that a new five-year MS4 Permit will be obtained in FY 2020. 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 2020 and FY 2021. 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 2020 and FY 2021.

Indicator	FY 2017 Actual	FY 2018 Actual	FY 2019 Estimate/Actual	FY 2020 Estimate	FY 2021 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-2021-adopted-performance-measures-pm

FUND STATEMENT

Category	FY 2019 Actual	FY 2020 Adopted Budget Plan	FY 2020 Revised Budget Plan	FY 2021 Advertised Budget Plan	FY 2021 Adopted Budget Plan
Beginning Balance	$59,454,823	$0	$80,801,794	$0	$0
Revenue:					
Stormwater Service District Levy	$79,549,686	$81,954,210	$81,954,210	$85,089,976	$85,089,976
Sale of Bonds[1]	7,050,000	0	0	0	0
Stormwater Local Assistance Fund (SLAF) Grant[2]	2,694,886	0	6,081,473	0	0
Stormwater Proffers[3]	151,358	0	0	0	0
Tree Preservation/Planting Fund[4]	6,000	0	0	0	0
Miscellaneous	14,550	0	0	0	0
Total Revenue	$89,466,480	$81,954,210	$88,035,683	$85,089,976	$85,089,976
Total Available	$148,921,303	$81,954,210	$168,837,477	$85,089,976	$85,089,976
Expenditures:					
Personnel Services	$18,676,454	$21,497,378	$21,497,378	$24,231,595	$22,359,404
Operating Expenses	4,097,184	3,994,384	4,106,392	3,197,136	3,182,636
Recovered Costs	(2,757,035)	(2,129,955)	(2,129,955)	(2,129,955)	(2,129,955)
Capital Equipment	765,382	1,085,000	1,833,966	1,402,000	1,354,000
Capital Projects[5]	46,212,524	56,382,403	142,404,696	57,264,200	59,198,891
Total Expenditures	$66,994,509	$80,829,210	$167,712,477	$83,964,976	$83,964,976
Transfers Out:					
General Fund (10001)[6]	$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	$68,119,509	$81,954,210	$168,837,477	$85,089,976	$85,089,976
Ending Balance[7]	$80,801,794	$0	$0	$0	$0
Tax Rate Per $100 of Assessed Value	$0.0325	$0.0325	$0.0325	$0.0325	$0.0325

[1] On November 6, 2012, the voters approved a bond referendum in the amount of $30 million to make storm drainage improvements to prevent flooding and soil erosion, including acquiring any necessary land. This bond money is being used to prevent flooding in the Huntington community. An amount of $7.05 million was sold in January 2019. There is no funding remaining in authorized but unissued bonds for this fund.

[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 $2,694,886 was received in FY 2019 and an amount of $6,081,473 is anticipated in FY 2020 and beyond.

[3] Reflects proffer revenues collected through the land development process that will support Stormwater projects.

[4] Reflects revenues collected through the land development process that supported tree preservation and planting projects in FY 2020.

[5] In order to account for expenditures in the proper fiscal year, an audit adjustment in the amount of $1,052,308.58 has been reflected as an increase to the FY 2019 Capital Projects. This impacts the amount carried forward and results in a decrease of $1,052,308.58 to the *FY 2020 Revised Budget Plan*. The projects affected by this adjustment are SD-000031, Stream & Water Quality Improvements, SD-000033, Dam Safety and Facility Rehabilitation, and SD-000037, Flood Prevention-Huntington Area-2012. The audit adjustment has been included in the FY 2019 Comprehensive Annual Financial Report (CAFR). Details of the audit adjustment were included in the FY 2020 Third Quarter package.

[6] 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.

[7] 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.

SUMMARY OF CAPITAL PROJECTS

Project	Total Project Estimate	FY 2019 Actual Expenditures	FY 2020 Revised Budget	FY 2021 Advertised Budget Plan	FY 2021 Adopted Budget Plan
Conveyance System Inspection/Development (2G25-028-000)	$9,725,000	$440,042.57	$4,273,786.48	$2,000,000	$2,000,000
Conveyance System Rehabilitation (SD-000034)	51,034,135	4,339,165.31	13,319,905.39	7,000,000	7,000,000
Dam & Facility Maintenance (2G25-031-000)	19,400,000	3,763,457.85	7,582,949.41	5,000,000	5,000,000
Dam Safety and Facility Rehabilitation (SD-000033)	47,326,104	1,994,781.94	9,879,328.74	6,000,000	6,000,000
Emergency and Flood Response Projects (SD-000032)	24,686,091	327,224.50	13,878,307.84	5,000,000	5,000,000
Flood Prevention-Huntington Area-2012 (SD-000037)	41,050,000	7,077,772.88	3,091,034.05	0	0
Lake Accotink Dredging (SD-000041)	5,000,000	0.00	5,000,000.00	0	0
Laurel Hill Adaptive Reuse Infrastructure (SD-000038)	1,925,000	229,541.28	595,458.72	0	0
NVSWCD Contributory (2G25-007-000)	5,365,885	527,730.00	527,730.00	554,811	554,811
Occoquan Monitoring Contributory (2G25-008-000)	1,389,405	128,383.00	166,797.00	172,138	172,138
Stormwater Allocation to Towns (2G25-027-000)	5,744,829	748,924.93	1,190,325.90	800,000	800,000
Stormwater Facility (SD-000039)	8,515,000	1,409,095.75	4,051,704.25	0	0
Stormwater Proffers (2G25-032-000)	207,858	0.00	207,858.00	0	0
Stormwater Regulatory Program (2G25-006-000)	56,314,584	3,143,511.60	4,729,962.89	4,000,000	4,000,000
Stream & Water Quality Improvements (SD-000031)	204,206,930	21,266,465.86	71,726,160.81	26,737,251	28,671,942
Towns Grant Contribution (2G25-029-000)	4,637,970	800,000.00	2,103,131.18	0	0
Tree Preservation and Plantings (2G25-030-000)	104,516	16,426.56	80,255.07	0	0
Total	$486,633,307	$46,212,524.03	$142,404,695.73	$57,264,200	$59,198,891

Fairfax County 2020 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
9-30-2020

NMP Annual Report - Appendix R2

# of Facilities/Fields:	181	
Total Acreage:	1,054.74	acres
Acreage Covered:	1,054.74	acres
Percent Covered:	100.00%	

Facility	NMP ID	Field Name	Acres	Longitude	Latitude	NMP Completed
Alabama Drive Park	NMP-014-329	Field #1	1.48	-77.399797	38.969464	Y
Alabama Drive Park	NMP-014-520	Field #3	1.41	-77.3999	38.967944	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-023-292	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-023-333	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-023-335	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
Baron Cameron Park	NMP-023-523	Field #4	1.28	-77.336151	38.977402	Y
Beulah Park	NMP-027-413	Field #2	1.64	-77.155399	38.761003	Y
Beulah Park	NMP-027-414	Field #1	1.33	-77.1558	38.761564	Y
Blake Lane Park	NMP-028-273	Field #2	1.83	-77.293695	38.875841	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
Braddock Park	NMP-031-488	Field #1	1.62	-77.410607	38.829057	Y
Braddock Park	NMP-031-489	Field #2	1.58	-77.410917	38.828027	Y
Braddock Park	NMP-031-548	Field #5	1.63	-77.407253	38.827395	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>	64.54	-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-065-422	Fields #2 & #4	2.55	-77.053392	38.735284	Y
Collingwood Park	NMP-065-423	Fields #1 & #3	1.79	-77.05207	38.735141	Y
Colvin Run ES	NMP-067-375	Field #1	1.13	-77.265526	38.947274	Y
Colvin Run ES	NMP-067-386	Field #2	1.10	-77.266035	38.947623	Y
Crossfield ES	NMP-070-430	<Null>	1.50	-77.361018	38.915095	Y

Facility	NMP ID	Field Name	Acres	Longitude	Latitude	NMP Completed
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-081-290	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
E.C. Lawrence Park	NMP-081-496	Field #6	1.42	-77.438654	38.861004	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
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-100-313	Field #3	1.67	-77.162362	38.787998	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
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-115-535	Field #5	2.15	-77.325422	38.990531	Y
Great Falls Nike	NMP-115-537	Field #7	1.59	-77.328709	38.990495	Y
Great Falls Nike	NMP-115-296	Field #8	1.42	-77.32859	38.991753	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>	84.59	-77.121413	38.773088	Y
Grist Mill Park	NMP-120-281	Field #6	1.55	-77.113689	38.709874	Y
Grist Mill Park	NMP-120-431	Field #4	2.61	-77.116528	38.709522	Y
Grist Mill Park	NMP-120-432	Field #3	2.09	-77.11509	38.710881	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-135-283	Field #3	1.77	-77.193554	38.762205	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-135-461	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	1.85	-77.212985	38.890581	Y
Idylwood Park	NMP-144-357	Field #3	1.09	-77.214058	38.890048	Y
Jefferson GC	NMP-147-351	<Null>	42.20	-77.215176	38.879561	Y

Facility	NMP ID	Field Name	Acres	Longitude	Latitude	NMP Completed
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-154-043	Field #1	1.67	-77.223932	38.905639	Y
Kilmer MS	NMP-154-044	Field #2	1.01	-77.224872	38.905942	Y
Lake Braddock Park	NMP-160-285	Field #1	1.83	-77.270869	38.806496	Y
Lake Braddock Park	NMP-160-286	Field #2	1.43	-77.270692	38.807549	Y
Lake Braddock SS	NMP-161-184	Field #1	2.53	-77.262891	38.803775	Y
Lake Fairfax Park	NMP-162-297	Field #2	1.67	-77.318791	38.956266	Y
Lake Fairfax Park	NMP-162-337	Fields #8 & #9	14.26	-77.312071	38.960952	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-162-538	Field #5	1.40	-77.319338	38.959211	Y
Lake Fairfax Park	NMP-162-541	Field #3	1.44	-77.318961	38.957455	Y
Lakeside Park	NMP-165-463	Fields #1 & #2	1.94	-77.285558	38.806022	Y
Langley Fork Park	NMP-167-274	Field #4	1.78	-77.152326	38.94662	Y
Langley Fork Park	NMP-167-305	Field #3	1.59	-77.155231	38.94831	Y
Langley Fork Park	NMP-167-359	Field #1	1.44	-77.154451	38.946526	Y
Langley Fork Park	NMP-167-360	Field #2	1.22	-77.154455	38.947321	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>	108.18	-77.246896	38.714386	Y
Laurel Hill Park	NMP-173-465	Field #3	4.14	-77.233801	38.711195	Y
Lee District RecCenter	NMP-175-436	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 District RecCenter	NMP-175-439	Field #3	1.02	-77.104792	38.776269	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-181-275	Field #1	1.77	-77.189085	38.92801	Y
Lewinsville Park	NMP-181-307	Field #4	1.80	-77.191947	38.929268	Y
Lincoln Lewis-Vannoy Park**	NMP-183-506	Field #3	1.72	-77.376655	38.831471	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

Facility	NMP ID	Field Name	Acres	Longitude	Latitude	NMP Completed
Mt Vernon HS	NMP-210-214	Field #1	2.46	-77.092659	38.724756	Y
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-217-277	Field #4	1.43	-77.276048	38.88449	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>	52.07	-77.314251	38.878431	Y
Oakton HS	NMP-222-191	Field #1	2.22	-77.281933	38.881068	Y
Oakton HS	NMP-222-247	Field #2	1.26	-77.280897	38.88101	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>	28.94	-77.16394	38.828089	Y
Pleasant Valley GC	NMP-233-601	<Null>	107.69	-77.475907	38.887639	Y
Pohick Estates Park	NMP-236-450	Field #1	1.08	-77.20007	38.71933	Y
Popes Head Park	NMP-237-468	Field #3	1.71	-77.34892	38.813233	Y
Popes Head Park	NMP-237-469	Field #2	1.67	-77.34959	38.813811	Y
Popes Head Park	NMP-237-470	Field #1	1.61	-77.350195	38.814511	Y
Poplar Tree Park	NMP-239-507	Field #5	2.05	-77.410618	38.860952	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
Reston North Park	NMP-243-544	Field #2	2.04	-77.35326	38.970305	Y
Robinson SS	NMP-245-195	Field #1	2.70	-77.306542	38.817933	Y
Robinson SS	NMP-245-251	Field #2	2.46	-77.307867	38.817751	Y
Robinson SS	NMP-245-216	Field #2	2.21	-77.305061	38.818296	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-261-322	Field #3	1.58	-77.273967	38.751117	Y
South Run Rec Center	NMP-261-478	Field #2	1.39	-77.27164	38.749469	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-270-327	Field #2	1.60	-77.401377	38.846597	Y
Stringfellow Park	NMP-270-328	Field #3	1.46	-77.401164	38.847706	Y
Sully Highlands Park	NMP-272-517	Field #5	2.18	-77.426323	38.92007	Y
Twin Lakes GC	NMP-281-301	<Null>	256.83	-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, &	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
West Potomac HS	NMP-291-608	Field #1	1.99	77.074601	38.774367	Y

Facility	NMP ID	Field Name	Acres	Longitude	Latitude	NMP Completed
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
Willow Springs ES	NMP-302-163	<Null>	1.30	-77.37866	38.832159	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

* At time of submission Greendale and Pinecrest GC had begun the renewal process.

** Park receives limited nutrient application, and is being converted to turf.

Fairfax County 2020 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
9-30-2020

From July 1, 2019 to June 30, 2020, SWPD identified 84 illicit discharges to the County's MS4. Two confirmed illicit discharge cases were referred by the County's Dry Weather Screening (DWS) Program. (A third issue was referred but turned out to be potable water, an allowed discharge, and therefore it is not included among the confirmed illicit discharges listed below.) The follow-up activities for these cases are referenced in Appendix R9. SWPD also completed seven of seven 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	Eliminated (Y/N)
IDID-1759391*	Sediment	Shopping Center	A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1763875*	Swimming pool discharge	Recreational Center	A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1774822*	FOG/Salt/Litter	Shopping Center	A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1796746*	Sanitary sewage	Apartments	DEQ was Notified. Department of Code Compliance was notified. Wastewater Collection Division was notified. A Corrective Action Notice was issued. A Notice of Violation was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1796763*	Salt	Public Works Yard	Maintenance & Stormwater Management Division was notified. Fairfax County Public Schools was notified. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1807162	Dry wall slurry	Unconfirmed	SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes

IDID Number	Type	Source	Follow-Up Activities	Eliminated (Y/N)
IDID-1812080	Paint	Single Family Home	DEQ was Notified. A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1812259	Paint	Single Family Home	A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1812502	Unconfirmed	Unconfirmed	Fire & Rescue Department was notified. Maintenance & Stormwater Management Division was notified. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1813277	High Temp Water for Dry Cleaning	Dry Cleaners	A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1813414	Sanitary sewage	Unconfirmed	Department of Code Compliance was notified. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1813692*	Sediment	Landscapers	A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1813827*	Cooling tower discharge	Hospital	DEQ was Notified. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1815046	Swimming pool discharge	Single Family Home	SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1815049	Dumped trash / dumpster	Grocery Store Parking Lot	A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1816046	Litter and floatables	Gas Station	A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes

IDID Number	Type	Source	Follow-Up Activities	Eliminated (Y/N)
IDID-1819569	Fats, oils and grease (FOG)	Shopping Center	A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1819618	Dumpster Juice	Warehouse Grocery Store	SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1819619	Fats, oils and grease (FOG)	Shopping Center	A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1820853	Fats, oils and grease (FOG)	Shopping Center	Fire & Rescue Department was notified. A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1820859	Paint	Apartment Building	SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1820860	Paint	Townhomes	A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1821223	Industrial waste	Granite Washwater	A Notice of Violation was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1822330	Sanitary sewage	Public Works	DEQ was Notified. Wastewater Collection Division was notified. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1822333	Fats, oils and grease (FOG)	Restaurant	A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1822618	Swimming pool discharge	Swimming Pool	SWPD re-inspected to confirm cleanup and the case was closed.	Yes

IDID Number	Type	Source	Follow-Up Activities	Eliminated (Y/N)
IDID-1823077	Empty 55 gallon drums (Floatables)	Unconfirmed	SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1823783	Salt	Shopping Center	SWPD re-inspected to confirm cleanup and the case was closed.	Yes
IDID-1824140	Swimming pool discharge	Swimming Pool	DEQ was Notified. A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1825002	Wash water with detergent	Garage Floor Cleaner	DEQ was Notified. A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1825075	Litter and floatables	Shopping Center	Solid Waste Management Program was notified. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1825204	Vehicle wash with detergent	Industrial Park	SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1827381	Industrial waste	Concrete Paving	A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1828780	Swimming pool discharge	Swimming Pool	A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1829578	Dumped trash / dumpster	Shopping Center	A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1830048	Sanitary sewage	Industrial Park	Referral from DWS program. DEQ was Notified. 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	Eliminated (Y/N)
IDID-1830514	Dumped trash / dumpster	Restaurant	A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1830937	Concrete slurry	Ready Mix Concrete Plant	Referral from DWS program. DEQ was Notified. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1830944	Dumped plant material	Single Family Home	SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1830948	Construction site runoff	Industrial Park	A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1831982	Wash water with detergent	Appliance Store	Department of Code Compliance was notified. A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1831986	Grease from Grease Bin	Restaurant	A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1832766	Motor Oil Waste	Gas Station	Fire & Rescue Department was notified. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1832772	Swimming pool discharge	Salt Pool	A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1833186	Vehicle Fluid	Unconfirmed	SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1834819	Sand for Golf Course Bunkers	Golf Course	A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes

IDID Number	Type	Source	Follow-Up Activities	Eliminated (Y/N)
IDID-1835234	Fats, oils and grease (FOG)	Restaurants	A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1835235	Fats, oils and grease (FOG)	Restaurant	A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1836698	Sanitary sewage	Shopping Center	DEQ was Notified. Health Department was notified. Fire & Rescue Department was notified. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1836945	Fats, oils and grease (FOG)	Restaurant	A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1837791	Litter and floatables	Apartments	A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1839570	Cooling tower discharge	Apartments	SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1840342	Sanitary sewage	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-1840554	Vehicle wash with detergent	Car Wash	SWPD re-inspected to confirm cleanup and the case was closed.	Yes
IDID-1840811	Potable Water	Drinking Water Service Authority	Fairfax Water was notified. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes

IDID Number	Type	Source	Follow-Up Activities	Eliminated (Y/N)
IDID-1841611	Sediment	Private Farm Pond	FCPA was notified. A Corrective Action Notice was issued. Phase I Construction is completed. SWPD re-inspected to confirm cleanup and illicit discharge eliminated, but the case is still open for Phase II of the construction.	Yes
IDID-1841639	Sanitary sewage	Hotel	Wastewater Treatment Division was notified. A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1842003	Swimming pool discharge	Recreational Center	SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1842106	Paint	Unconfirmed	DEQ was Notified. SWPD inspected to confirm no further illicit discharges.	Yes
IDID-1842380	Construction site runoff	Streets and Highways	VDOT was notified.. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1843672	Fats, oils and grease (FOG)	Restaurants	A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1845459	Wash water with detergent	Restaurant	A Corrective Action Notice was issued. SWPD inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1846522	Sediment	Onsite Drilling	A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1846556	Salt	Industrial Park	A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes

IDID Number	Type	Source	Follow-Up Activities	Eliminated (Y/N)
IDID-1846630	Salt	Salt Pile	A Corrective Action Notice was issued. Responsible party sent photos confirming cleanup and illicit discharge eliminated.	Yes
IDID-1847168	Salt	Salt Pile Storage	SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1847227	Salt	Townhomes	A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1847987	Concrete from Ready-Mix Truck	Ready Mix Concrete	A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1848566	Fats, oils and grease (FOG)	Restaurants	A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1850980	Wash water with detergent	Unconfirmed	SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1851547	Sanitary sewage	Municipal Sanitary Sewage System	Wastewater Collection Division was notified. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1851845	Vehicle wash with detergent	Autobody Shop	A Corrective Action Notice was issued. This investigation is still ongoing.	No
IDID-1852136	Sanitary sewage	Restaurant	DEQ 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-1852211	Fats, oils and grease (FOG)	Single Family Home	A Corrective Action Notice was issued. SWPD inspected to confirm cleanup and illicit discharge eliminated.	Yes

IDID Number	Type	Source	Follow-Up Activities	Eliminated (Y/N)
IDID-1852719	Construction site runoff	Municipal Stormwater Maintenance	Maintenance & Stormwater Management Division was notified. A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1852950	Motor oil from leaking vehicle	Single Family Home	A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1853843	Pool Plastering Waste	Pool Plaster	A Corrective Action Notice was issued.	Yes
IDID-1855239	Litter and floatables	Apartments	SWPD received notice from responsible party confirming cleanup and illicit discharge eliminated.	Yes
IDID-1855300	Sediment	Single Family Home	Maintenance & Stormwater Management Division was notified. A Corrective Action Notice was issued. SWPD received Photos from responsible party confirming cleanup and illicit discharge eliminated.	Yes
IDID-1855725	Potable Water	Single Family Home	Fairfax Water was notified. SWPD received notice from Fairfax Water confirming cleanup and illicit discharge eliminated.	Yes
IDID-1856607	Dumped plant material	Single Family Home	Maintenance & Stormwater Management Division was notified. SWPD inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1857645	Fats, oils and grease (FOG)	Unconfirmed	Wastewater Collection Division was notified. SWPD re-inspected to confirm cleanup and the case was closed.	Yes

IDID Number	Type	Source	Follow-Up Activities	Eliminated (Y/N)
IDID-1864943	Fats, oils and grease (FOG)	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-1865257	Drilling Mud	Power Company	A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1866555	Dumped Dry Wall Material	Townhome	A Corrective Action Notice was issued. SWPD inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1867361	Pool Plaster	Pool Plaster Company	A Corrective Action Notice was issued. SWPD inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1868504	Sediment	Fairfax Water	Fairfax Water was notified. SWPD inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1869813	Litter and floatables	Townhomes	DEQ was Notified. A Corrective Action Notice was issued. This investigation is still ongoing.	No
IDID-1871682	Paint	Single Family Home	A Corrective Action Notice was issued. SWPD inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1872506	Sanitary sewage	Single Family Home	DEQ was notified. Department of Code Compliance was notified. A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1872751	Dye from black mulch	Plant Nursery	SWPD 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
9-30-2020

From July 1, 2019 to June 30, 2020, spill response personnel responded to 13 spills that had the potential to discharge into the MS4. The investigations are summarized below.

Date	Spill	Source	Follow-up Activities Taken
7/18/2019	Diesel Fuel, less than 55 gallons	Ruptured fuel tank	Clean-up was completed by the responsible party. IDID staff and DEQ were notified.
9/15/2019	Firefighting foam	Response to vehicle fire	Fire service completed clean-up. IDID staff and DEQ were notified.
10/1/2019	Cooking Oil, less than 5 gallons	Accidental release	Clean-up was completed by the responsible party. FCPS Office of Safety and Security staff responded, took steps to prevent recurrence of the incident, and ensure availability of spill clean-up kit.
10/23/2019	Diesel Fuel, less than 5 gallons	Ruptured fuel tank	Spill was contained and IDID staff and DEQ were notified.
10/25/2019	Diesel Fuel, greater than 55 gallons	Fuel tank rupture	Booms were deployed to contain the spill and clean-up was completed by the responsible party.
11/8/2019	Diesel Fuel, less than 55 gallons	Accidental release	Fire service completed clean-up. IDID staff and DEQ were notified.
12/9/2019	Non-PCB Mineral Oil (300 Gallons)	Accidental release	Clean-up was completed by the responsible party. FMO, IDID and DEQ staff were notified.
1/7/2020	Diesel fuel, greater than 55 gallons	Fuel tank rupture	Fire service completed clean up.
1/12/2020	Fuel oil, approximately 25 gallons	Fuel oil tank leak	Clean-up was completed by the responsible party.
2/7/2020	Non-PCB Mineral Oil (32 Gallons)	Downed Electrical Transformer	Clean-up was completed by the responsible party. FMO, IDID and DEQ staff were notified.
2/13/2020	Gasoline (unconfirmed amount)	Accidental release	Fire service completed clean-up. IDID staff and DEQ were notified.
2/13/2020	Acrylic paint, approximately 1 gallon	Unknown source	Spill was remediated. IDID and DEQ were notified.
6/11/2020	Diesel Fuel, greater than 55 gallons	Ruptured fuel tank	Booms were deployed to contain the spill 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
9-30-2020

Fairfax County has established 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 (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 those areas with the most 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, 2019 to June 30, 2020, the County evaluated 27 facilities on its list of potential IHRR facilities. These 27 inspections completed the inspection requirements for IHRR facilities in this permit cycle. The evaluations are listed below. Also listed below are 23 facilities, shown in italics, that were inspected in previous fiscal years; however, they were not reported in previous annual reports. Of the 50 reported inspections, the County inspected the points of connection to the MS4 from 20 facilities in the regulated MS4 service area; these facilities are distinguished below with bold facility ID numbers. The remaining 30 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
IHR080206994	Concrete GP	295103	Paving Materials-Manufacturers	5/28/2015
IHR024206047	N.A.	366902	Security Control Equip & Systems-Mfrs	1/6/2016
IHR024206225	N.A.	362101	Electric Supplies-Manufacturers	1/6/2016
IHR024206264	N.A.	451301	Air Courier Services	1/6/2016
IHR024206614	N.A.	733101	Mailing & Shipping Services	1/6/2016
IHR024206714	N.A.	272102	Publishers-Periodical (Mfrs)	1/6/2016
IHR024206787	N.A.	366902	Security Control Equip & Systems-Mfrs	1/6/2016
IHR024206930	N.A.	753206	Truck-Painting & Lettering	1/6/2016
IHR024406386	N.A.	421503	Shipping Masters	1/6/2016
IHR033206147	N.A.	421309	Trucking-Motor Freight	6/21/2016
IHR034106002	N.A.	325301	Tile-Ceramic-Manufacturers	6/21/2016
IHR098205452	N.A.	328101	Granite Product -Manuf.	6/14/2016
IHR099106339	N.A.	503204	Granite (Whls)	6/21/2016
IHR050306285	N.A.	554101	Service Stations-Gasoline & Oil	7/10/2017
IHR050306505	N.A.	554101	Service Stations-Gasoline & Oil	7/10/2017
IHR050406861	N.A.	355904	Automobile Body Shop Equipment-Mfrs	7/10/2017
IHR026106483	N.A.	554101	Service Stations-Gasoline & Oil	4/13/2018
IHR017306273	N.A.	733603	Graphic Designers	5/11/2018
IHR017405979	N.A.	519917	Advertising-Specialties (Whls)	5/11/2018
IHR044205877	N.A.	349903	Metal Goods-Manufacturers	6/6/2018
IHR034205999	N.A.	422503	Storage-Household & Commercial	6/27/2018
IHR034306152	N.A.	731201	Advertising-Outdoor	6/27/2018
IHR034306395	N.A.	243102	Millwork (Mfrs)	6/27/2018
IHR034310456	N.A.	753914	Brake Service	1/29/2020

Facility ID	VPDES Permit Type (if applicable)	Primary SIC Code	Primary SIC Description	Inspection Date
IHR049406157	N.A.	517215	Oils-Petroleum (Whls)	5/1/2020
IHR016306365	N.A.	308923	Manufacturing-Layered Processes (Mfrs)	5/1/2020
IHR049306877	N.A.	504403	Copying & Duplicating Machines & Supls	5/1/2020
IHR016405906	N.A.	551102	Automobile Dealers-New Cars	5/1/2020
IHR016306163	N.A.	738999	Business Services Nec	5/1/2020
IHR049401447	N.A.	291101	Oil Refiners (Mfrs)	5/1/2020
IHR049306588	N.A.	274112	Indexing Svc-Book/Periodical/Etc (Mfrs)	5/1/2020
IHR056206792	N.A.	422503	Storage-Household & Commercial	5/4/2020
IHR055207241	N.A.	753801	Automobile Repairing & Service	5/4/2020
IHR059407866	N.A.	653118	Real Estate	5/4/2020
IHR079305805	N.A.	554101	Service Stations-Gasoline & Oil	5/7/2020
IHR079306971	N.A.	554101	Service Stations-Gasoline & Oil	5/7/2020
IHR079306218	N.A.	554101	Service Stations-Gasoline & Oil	5/7/2020
IHR077106263	N.A.	754903	Automobile Lubrication Service	5/7/2020
IHR077106907	N.A.	753801	Automobile Repairing & Service	5/7/2020
IHR079306030	N.A.	554101	Service Stations-Gasoline & Oil	5/7/2020
IHR099107482	N.A.	243102	Millwork (Mfrs)	5/13/2020
IHR080206444	N.A.	271101	Newspapers (Publishers/Mfrs)	5/13/2020
IHR033406829	N.A.	507205	Fasteners-Industrial (Whls)	5/15/2020
IHR044206997	N.A.	328101	Granite Products-Manufacturers	5/15/2020
IHR049307659	N.A.	422503	Storage-Household & Commercial	5/19/2020
IHR029407401	N.A.	422503	Storage-Household & Commercial	5/19/2020
IHR054307009	N.A.	422503	Storage-Household & Commercial	5/20/2020
IHR025307678	N.A.	422503	Storage-Household & Commercial	5/21/2020
IHR034307848	N.A.	551103	Automobile Dealers-Used Cars	5/21/2020
IHR054307657	N.A.	422503	Storage-Household & Commercial	5/21/2020

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Appendix R6

Revised List of High Priority Municipal Facilities with a High Potential of Discharging Pollutants

VSMP Permit Number VA0088587
9-30-2020

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 Material Facility	4450 Upper Cub Run Drive Chantilly, VA 20151
Lake Accotink Park	7500 Accotink Park Rd, Annandale, VA 22003
Frying Pan Farm Park	2739 West Ox Rd, Herndon, VA 20171
Laurel Hill Park	8701 Laurel Crest Dr., Lorton, VA 22079
Woodson High School	9525 Main St, Fairfax, VA 22031

Fairfax County 2020 MS4 Program Plan and Annual Report

Appendix R7

Public Education and Participation Program Effectiveness Overview

VSMP Permit Number VA0088587
9-30-2020

During the 2020 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 2020, a survey was conducted of 500 northern Virginia residents to measure the effectiveness of the campaign. Twenty-two percent of the respondents recalled seeing the advertisements on TV. Of those respondents who recalled the ads, forty-eight percent state they now pick up their pet waste more often, thirty-five percent state they plan to fertilize fewer times per year, and fifteen percent are more careful with motor oil.

Summary of Northern Virginia Clean Water Partners Regional Stormwater Education Campaign	
Television Ads	
Number of times aired	18,262
Number of views reached	2,242,313
Online Banner Ads	
Number of Impressions	544,812
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	22%
Those who saw the ads made the following behavior changes:	
Pick up pet waste more often	48%
Fertilize fewer times per year	32%
More careful with motor oil	15%
Have heard of opportunities to participate in water quality activities	25%
Felt confident that they would know where to report potential water pollution	19%
Leave their grass clippings on the lawn	35%
Sweep or blow grass clippings back into the lawn from the street.	52%
Wash their vehicle at home	37%

*Estimated viewership numbers for TV ads; can include viewers who viewed the ad more than once.

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Appendix R8

List of County's Public Outreach and Education Activities and the Estimated Number of Individuals Reached through the Activities

VSMP Permit Number VA0088587
9-30-2020

Fairfax County has eight partners to assist fulfilling this permit requirement. These partnerships assist the county in reaching 3,848,680 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 1771 storm drains labeled	267 project leaders and volunteers, 7254 households educated	X	X		X	X	X	X	X	
Multiple Sessions	Enviroscape© watershed model (27 presentations)	676, primarily students and scouts		X		X	X	X	X	X	
Multiple Sessions	Volunteer Stream Monitoring Program	23 site leaders, 147 volunteers; 465 participants in special events		X		X	X	X	X	X	
Multiple Sessions	Watershed Calendar Email List	21955 recipients		X				X			
Multiple Sessions	Conservation Currents Newsletter	4534 recipients (print/email)		X		X	X	X	X	X	
Multiple Sessions	Technical Assistance Site Visits	116 site visits		X			X			X	
Multiple Sessions	Conservation Assistance Program	77 applicants (projects + site visits)		X							
Multiple Sessions	Solving Drainage and Erosion Problems Online Guide for Homeowners	88600 visits, 98315 views		X							
Multiple Sessions	NVSWCD website	122848 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 14 parcels reached		X			X			X	
Multiple Sessions	Earth Friendly Suburban Horse Keeping publication online/print	543 visits, 613 page views		X			X			X	
Multiple Sessions	Build-Your-Own Rain Barrel Program (18 Rain barrels distributed)	20 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							

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	Watershed Friendly Garden Tour	3717 virtual views/visitors, 11 garden sites		X			X			X	
Multiple Sessions	Rain Garden Workshops	65 participants		X							
Multiple Sessions	Rain Garden Design and Construction Guide for homeowners	8001 downloaded the guide or received print copy		X							
Multiple Sessions	Residential Low Impact Landscaping Guide print/online	530 downloaded		X							
Multiple Sessions	Green Breakfast Seminars, 5X per year	275 attended	X	X							
Multiple Sessions	Get2Green Newsletter	6,750 recipients		X							
				X							
Multiple Sessions	FCPS Earth Week	ongoing		X							
Week of April 20, 2020	FCPS Earth Week Distance Learning Packets with Get2Green Choice Board	128,825 students in grades K-8		X							
1/28/2020	Get2Green, PBL, and Eco-Schools Course	16 teachers	X	X			X	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	Introduction to Stream Monitoring	215	X	X			X	X	X	X	
Multiple Sessions	Stream Crime Investigation (SCI) Lab Exercise	690	X				X	X	X	X	
Multiple Sessions	Meaningful Watershed Education Experience (non-FCPA/GMU)	425	X	X		X	X	X	X	X	
Multiple Sessions	Revitalize, Restore, Replant! (R3)	365	X				X	X		X	
Multiple Sessions	Benthic/Geomorpholgy Labs	140	X	X		X	X	X	X	X	
Multiple Sessions	Sewer Science (Stormwater contributions)	1,938	X			X	X	X	X		
4/28/2020	Mailing: "Guidelines For Proper Disposal of Swimming Pool Water" Fact Sheet	140	X								X
5/7/2020	News release: "Guidelines For Proper Disposal of Swimming Pool Water" Fact Sheet to NewsWire list serve	1864	X								X
5/8/2020	Newsletter: "Guidelines For Proper Disposal of Swimming Pool Water" Fact Sheet in NewsLink	12000	X								X
Multiple Sessions	News release: Guidance for Swimming Pool Owners and Managers (4/30/2020)	57	X								X
5/7/2020	News release: "Guidelines For Proper Disposal of Swimming Pool Water" Fact Sheet to NewsWire Twitter	6700	X								X
9/12/2019	Equipment Road-E-O	25	X								
Multiple Sessions	Fats, Oils and Grease (FOG) Webpage	1612	X			X					X
Multiple Sessions	Polluted Runoff is a Leading Cause of Water Pollution Webpage	488	X			X	X	X	X	X	X
Multiple Sessions	Car Washing the Right Way	645	X						X		X
Multiple Sessions	Cooling Towers	359	X								X
Multiple Sessions	Illicit Discharge and Improper Disposal (IDID) Program	758	X			X	X	X	X	X	X
Multiple Sessions	Industrial and High Risk Runoff (IHRR) Program	140	X								X

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	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	X
Multiple Sessions	Clean Water Partners Online Ad Views	544,812	X	X	X	X	X	X	X	X	X
6/23/2020	GWGCSA	84			X						
Multiple Sessions	Invasive plant volunteer engagement	2428	X	X		X		X		X	
Multiple Sessions	Yard waste education campaign in person	577		X			X			X	
Multiple Sessions	Volunteers engaged in stewardship progects and education	224		X		X	X	X		X	
8/3/19 & 8/4/19	WTGG table at 4-H Fair @ Frying Pan Farm	284		X		X	X	X		X	
9/3/2019	Anti-encroachment education letter to Sugarland Valley Dr residents	46		X			X			X	
9/12/2019	Girl Scouts Service Unit Leaders Meeting (SU 52-10)	40		X			X	X		X	
9/29/2019	WTGG table at NatureFest (Runnymede Park)	155		X		X	X	X		X	
10/4/2019	WTGG table at Plant NOVA Natives HOA Symposium	55		X			X			X	
10/10/2019	WTGG - London Towne HOA Board Meeting	12		X			X			X	
10/17/2019	WTGG - Ravensworth Farm Community Association Meeting	32		X			X			X	
10/24/2019	WTGG - Mantua Citizens Association Meeting	38		X			X				
10/26/2019	FCPA Bug Bioblitz	26								X	
11/2/2019	WTGG table at Plant NOVA Natives HOA Symposium	130		X			X			X	
11/18/2019	Girl Scout Troop Meeting - invasive plants and yard waste education	20		X			X				
11/21/2019	WTGG - Shaker Woods HOA Meeting	30		X			X	X			
1/28/2020	WTGG presentation at Middle School Science Teachers Inservice	35		X			X	X			X
3/6/2020	WTGG table at Plant NOVA Natives HOA Symposium	50		X			X			X	
4/19/2019	Tania Hosmer Residential Neighborhood Household Hazardous Waste Community Cleanup Event	5				X					
5/5/2019	Matt Cockerham HHW & Electronics Community Cleanup Event	193				X					
5/18/2019	Michelle Dettor & Fairfax County Electronics Recycling & Community Cleanup Event	140				X					
6/2/2019	Cecil Hart Electroics Community Cleanup Event	29				X					
9/24/2019	Tania Hosmer Residential Neighborhood Household Hazardous Waste Community Cleanup Event	16				X					
10/20/2019	Michelle Dettor & Fairfax County Electronics Recycling & Community Cleanup Event	35				X					
10/20/2019	Westlawn Household Hazardous Waste Community Cleanup Event	50				X					
11/10/2019	Chris Hughes Household Hazardous Waste Community Cleanup Event	26				X					
11/15/2019	Amanda Scarangella Electronics Recycling Community Cleanup Event	15				X					
12/8/2019	Bradford Woodhouse Household Hazardous Waste Community Cleanup Event	48				X					
5/31/2020	Chris Hughes Household Hazardous Waste Community Cleanup Event	77				X					
9/9/2019	Great Falls Civic Association	12				X	X				
9/16/2019	Master Naturalist Presentation	45				X	X				
9/11/2019	Recycling Presentation - Reston	20				X	X				

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
9/23/2019	Ayr Hill Garden Club	36				X	X				
9/28/2019	Reston Multicultural Festival	120				X	X				
10/5/2019	Fall for Fairfax	200				X	X				
10/19/2019	Centerville Day	100				X	X				
10/23/2019	NVCC Filmest	38				X	X				
11/4/2019	Daventree Community Association	27				X	X				
11/13/2019	Providence HOAs presentation	44				X	X				
11/15/2019	Fairfax Recycles Day	75				X	X				
11/16/2019	Mt. Vernon Environmental Expo	150				X	X				
1/20/2020	Mason District Event	65				X	X				
1/22/2020	West Springfield Rotary Club	60				X	X				
2/1/2020	Mt Vernon Town Hall	200				X	X				
3/3/2020	Girl Scouts Eco Empowerment	206				X	X				
3/10/2020	South County Seniors presentation	20				X	X				
4/13/2020	Clarks Crossing HOA presentation	20				X	X				
4/29/2020	Lorton Community Action	12				X	X				
5/6/2020	Zoom HOA meeting	16				X	X				
5/21/2020	Zoom HOA meeting	9				X	X				
Multiple Sessions	Plant clinic visitors and Master Gardener special events	26764		X						X	X
Multiple Sessions	Special event (includes SpringFest, 4-H, Earth Day events, Ecosavvy Sympsium, Mt Vernon Envirnmental Expo etc)	772		X						X	X
Multiple Sessions	Pesticide Recertification Classes	543		X						X	X
Multiple Sessions	Outreach to Green Industry – Pesticide/IPM and Fertilizer Classes	480		X						X	X
Multiple Sessions	Green Industry Field Day	450		X						X	X
Multiple Sessions	Green Industry Seminar	385		X						X	X
Multiple Sessions	Master Gardener Training Classes	608		X						X	X
7/8/2019	CFC Walkthrough at food bank to help with sustainability issues- Provided 2,800 reusable totes.	2800						X			
7/20/2019	CFC Reston Farmers market plastic reduction outreach	120					X	X			
7/19/2019	CFC interviewed on Reston Impact TV	60000					X	X			
7/24/2019	CFC presented "10 things you can do" for Mt Vernon civic association	15					X	X			
7/25/2019	CFC South Lakes Food bank walkthrough- provided produce bags	75						X			
7/30/2019	CFC VA green initiative meeting	20					X	X			
7/31/2019	CFC Mt Vernon Farmers Market plastic reduction outreach	75						X			
8/4/2019	CFC Lorton Farmers market for national farmers market week plastic reduction outreach	115						X			
8/4/2019	Tabled at MOM's w/ Lema for their organic clothing sale-handed out produce bags and talk about reducing plastic footprints	130					X	X			
8/14/2019	Mt Vernon Farmers Marketplastic reduction outreach	60						X			
8/21/2019	Attended KVB/VDOT/DEQ meeting- constructive dialogue about litter issues in Fairfax	20						X			
8/24/2019	Reston Farmers market plastic reduction outreach	110						X			
9/7/2019	mt Vernon Farmers Market plastic reduction outreach	45						X			
9/14/2019	Asling 5th anniversary Party	5000					X	X			
9/21/2019	CFC spoke to CBF water captains about local initiatives to foster positive environmental change.	60		X				X			

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
10/5/2019	Reston Farmers market plastic reduction outreach	103						X			
10/12/2019	VA environmental Assembly. CFC hosted panel on plastic pollution in waterways	150						X			
11/9/2020	Baileys Community clean up	10		X				X			
11/15/2019	VAFMA presentation on getting single use out of farmers markets	50						X			
11/16/2019	Mt vernon Enviro expo presentation- litter issues and reducing waste in FFX	40					X	X			
12/6/2019	Presentation for FFX young democrats and green club at FFX high	23					X	X			
12/19/2019	Spoke with League of Women Voters of Arlington, and elected officials about the need to address single use plastic.	100						X			
1/15/2020	CFC hosted a webinar for VAFMA about reducing plastics at farmers markets	83						X			
2/10/2020	CFC presented floatable monitoring program at Stormwater workshop presentation	50						X			
3/5/2020	CFC Interviewed by Richmond Courier about environmental problems of plastic bags	50000						X			
4/22/2020	CFC Hosted Earth Day webinar for the New School in FFX about importance of reducing single use plastics	80					X	X			
4/10/2020	CFC interviewed by RVA magazine about earth day celebrations at home.	50000						X			
Multiple Sessions	Apply for Vacuum Leaf Service Webpage	336					X				
Multiple Sessions	A-Z List of Recycling and Trash Topics Webpage	5858					X	X			X
Multiple Sessions	Batteries	5731				X					X
Multiple Sessions	Commercial Hazardous Waste	1528				X					X
Multiple Sessions	Composting and More	1494									
Multiple Sessions	Curbside Recycling	14586				X	X				X
Multiple Sessions	Curbside Yard Waste	24912					X				X
Multiple Sessions	Disposal Companies for Specialized or Hazardous Waste	741				X					X
Multiple Sessions	Document Shredding	37708						X			X
Multiple Sessions	Electric Sunday (alias)	548				X					
Multiple Sessions	Electronics	28437				X					
Multiple Sessions	Free Mulch	20350					X				
Multiple Sessions	Household Hazardous Waste	37823				X	X				X
Multiple Sessions	Household Hazardous Waste (alias)	2109					X				
Multiple Sessions	Leaf Collection Dates	20453						X			X
Multiple Sessions	MEGABULK Pick Up	2172	X					X			X
Multiple Sessions	Organic Waste	1077					X				
Multiple Sessions	Plastic	12117						X			
Multiple Sessions	Recycling and Trash FAQs	9594						X			X
Multiple Sessions	Recycling and Trash News, Videos and Podcasts	501				X		X			X
Multiple Sessions	Reduce, Reuse, Recycle	17820						X			X
Multiple Sessions	Shredding (alias)	449				X					X
Multiple Sessions	Special Pick Up	52483					X				
Multiple Sessions	Subscribe to Vacuum Leaf Collection Email Updates	1877	X			X	X				X
Multiple Sessions	Transition from Plastic Bags for Yard Waste Collection FAQs	2499	X			X	X				X
Multiple Sessions	Trash Collection E-Updates	1657					X				

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	Trash/Recycling Container Request	9611					X				
Multiple Sessions	Vacuum Leaf Collection	7069				X					X
Multiple Sessions	Vacuum Leaf Collection FAQs	1383					X				X
Multiple Sessions	Very Small Quantity Generators (VSQG - formerly CESQGs)	919								X	
Multiple Sessions	What is FOG? (alias)	25	X						X		X
Multiple Sessions	Yard Waste	19151	X								X
Multiple Sessions	Yard Waste Collection Suspension FAQs	7501	X								X
Multiple Sessions	A Field Guide to Fairfax County's Plants and Wildlife	1835	X								X
Multiple Sessions	Bull Neck Run at Spring Hill RECenter Stream Restoration	37	X			X	X	X	X	X	X
Multiple Sessions	Car Washing the Right Way	645	X								X
Multiple Sessions	Colvin Run Phase II at Lake Fairfax Park Stream Restoration	69									X
Multiple Sessions	Cooling Towers	359	X			X	X	X	X	X	X
Multiple Sessions	Education Programs (alias)	144	X	X	X	X	X	X	X	X	X
Multiple Sessions	Facility Fact Sheets	1032									
Multiple Sessions	FAQs: Stormwater Maintenance and Inspections	169	X			X	X	X	X	X	X
Multiple Sessions	Illicit Discharge and Improper Disposal (IDID) Program	758		X							X
Multiple Sessions	Industrial and High Risk Runoff (IHRR) Program	140	X	X		X	X	X	X	X	X
Multiple Sessions	Little Hunting Creek Force Main Replacement Project	632	X								X
Multiple Sessions	Maintenance and Inspections	1815									X
Multiple Sessions	Maintenance Contractors	513	X								X
Multiple Sessions	MS4 Program Plan and Annual Reports	487	X	X		X	X	X	X	X	
Multiple Sessions	Municipal Separate Storm Sewer System (MS4) Permit	1036		X		X	X	X	X	X	
Multiple Sessions	Old Courthouse Spring Branch at Ashgrove Historic Park Stream Restoration, SD-000031-236	40						X			
Multiple Sessions	Paul Spring Branch at Sherwood Hall Stream Restoration, SD000031-237	131	X	X		X	X	X		X	
Multiple Sessions	Pollution Prevention packet	304		X							
Multiple Sessions	Private Facility Maintenance	1084	X					X			
Multiple Sessions	Private Residential Outreach Packet	324		X						X	
Multiple Sessions	Proper Discharge of Swimming Pool Water	1563	X	X		X	X	X	X	X	
Multiple Sessions	Public Facility Maintenance	309	X	X		X	X	X	X	X	
Multiple Sessions	Report a Storm Drainage Problem (alias)	8	X	X		X	X	X	X	X	
Multiple Sessions	Revealing Invisible Stormwater Pollution Messages	19	X	X		X	X	X	X	X	
Multiple Sessions	Snow Removal	496	X	X		X	X	X	X	X	
Multiple Sessions	Stormwater Facility Maintenance Awareness Training February 18, 2020	2	X	X		X	X	X	X	X	
Multiple Sessions	Stormy the Raindrop	2424	X	X		X	X	X	X	X	
Multiple Sessions	Stream Crime Investigation (SCI)	217	X	X		X	X	X	X	X	
Multiple Sessions	Students Help with Floatable Monitoring Program (archived)	32	X	X		X	X	X	X	X	
Multiple Sessions	Urban Forestry Education Programs	239	X	X		X	X	X	X	X	
Multiple Sessions	Volunteer Opportunities and Educational Programs (alias)	148	X	X		X	X	X	X	X	
Multiple Sessions	What's that Stuff in the Stream?	3857	X	X		X	X	X	X	X	
Multiple Sessions	Sewer Science Program	345	X	X		X	X	X	X	X	
Multiple Sessions	Wastewater Management for Educators and Students	390	X	X		X	X	X	X	X	
Multiple Sessions	Wastewater Treatment Plant Tours	710	X	X		X	X	X	X	X	

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	At-Home Version of Popular Stream Critter Cube Lab Now Available	236	X	X		X	X	X	X	X	
Multiple Sessions	Controlling and Managing Invasive Plants	184	X	X		X	X	X	X	X	
Multiple Sessions	Destructive Tree Pest Kills Trees	464	X	X		X	X	X	X	X	
Multiple Sessions	Emergency Work at Fort Hunt Road and Hunting Cove Place	70	X	X		X	X	X	X	X	
Multiple Sessions	Fairfax County Begins Transition from Plastic Yard Waste Bags	6888	X	X		X	X	X	X	X	
Multiple Sessions	Fairfax County Collected 366.85 Tons of Household Hazardous Waste in 2019	124	X	X		X	X	X	X	X	
Multiple Sessions	Fats, Oils and Grease (FOG)	1612	X	X		X	X	X	X	X	
Multiple Sessions	Floating Litter Trap Installed in Little Hunting Creek	898	X	X		X	X	X	X	X	
Multiple Sessions	Girl Scouts Jump into Water Event	116	X	X		X	X	X	X	X	
Multiple Sessions	Guidance for Swimming Pool Owners and Managers	57	X	X		X	X	X	X	X	
Multiple Sessions	Kids' Fishing Day at Flatlick Coming Up April 18, 2020	88	X	X		X	X	X	X	X	
Multiple Sessions	Litter (alias to new agency-wide page)	119	X	X		X	X	X	X	X	
Multiple Sessions	Litter (new agency wide link)	2077	X	X		X	X	X	X	X	
Multiple Sessions	Managing Trees in Preservation Areas	186	X	X		X	X	X	X	X	
Multiple Sessions	New Rain Garden to Replace Crumbling Fountain	1431	X	X		X	X	X	X	X	
Multiple Sessions	Pilot Program to Remove Litter from Waterways Begins	800	X	X		X	X	X	X	X	
Multiple Sessions	Polluted Runoff is a Leading Cause of Water Pollution	488	X	X		X	X	X	X	X	
Multiple Sessions	Stream Litter (alias to new agency-wide page)	27	X	X		X	X	X	X	X	
Multiple Sessions	Trash and Yard Waste Collection Changes Explained	6237	X	X		X	X	X	X	X	
Multiple Sessions	Volunteering	1472	X	X		X	X	X	X	X	
Multiple Sessions	What are Invasive Plants?	256	X	X		X	X	X	X	X	
Multiple Sessions	Waterway Drive Sanitary Sewer Repairs	10	X	X		X	X	X	X	X	

Fairfax County 2020 MS4 Program Plan and Annual Report

Appendix R9

Dry Weather Screening Report

VSMP Permit Number VA0088587
9-30-2020

StormNet:	Results of Inspection	Follow-up Actions
STMN0164406691	No Exceedances	
STMN0164406702	No Exceedances	
STMN0164406891	No Exceedances	
STMN0172004477	No Exceedances	
STMN0172005286	No Exceedances	
STMN0172006568	No Exceedances	
STMN0172006651	Specific Conductance, Copper and Fluoride exceedances	IDID Work Order Number – 1839570, received and visited site on 10/14/2019, as of 1/12/2020 the cooling tower discharge was plumbed to the sanitary sewer.
STMN0172006845	No Exceedances	
STMN0173007985	No Exceedances	
STMN0173008319	No Exceedances	
STMN0173008636	No Exceedances	
STMN0181004481	No Exceedances	
STMN0181005608	No Exceedances	
STMN0181005610	No Exceedances	
STMN0181005647	No Exceedances	
STMN0181005689	No Exceedances	
STMN0181005707	No Exceedances	
STMN0181005759	No Exceedances	
STMN0271011905	No Exceedances	
STMN0271011916	No Exceedances	
STMN0271012201	No Exceedances	
STMN0271012253	No Exceedances	
STMN0271012545	No Exceedances	
STMN0302408910	No Exceedances	
STMN0304412535	No Exceedances	
STMN0312408232	No Exceedances	
STMN0312408241	No Exceedances	
STMN0313412367	No Exceedances	
STMN0313412371	No Exceedances	
STMN0342024897	No Exceedances	
STMN0342024981	No Exceedances	
STMN0342067146	No Exceedances	
STMN0343029491	No Exceedances	
STMN0343517087	No Exceedances	
STMN0343517104	No Exceedances	
STMN0343517352	No Exceedances	
STMN0343517399	No Exceedances	
STMN0343517537	No Exceedances	
STMN0353028500	No Exceedances	
STMN0353028700	No Exceedances	
STMN0353029001	No Exceedances	
STMN0353029454	No Exceedances	
STMN0353030111	No Exceedances	
STMN0394026024	No Exceedances	
STMN0394026131	No Exceedances	
STMN0394026139	No Exceedances	
STMN0402058445	No Exceedances	
STMN0402414824	No Exceedances	
STMN0402414938	No Exceedances	
STMN0402414942	No Exceedances	
STMN0402415091	No Exceedances	
STMN0403417574	No Exceedances	
STMN0484054902	No Exceedances	
STMN0484055079	No Exceedances	
STMN0493423966	No Exceedances	
STMN0493424299	No Exceedances	
STMN0493504292	No Exceedances	
STMN0584435040	No Exceedances	
STMN0584504757	No Exceedances	
STMN0611427565	No Exceedances	
STMN0702439696	No Exceedances	
STMN0702439923	No Exceedances	
STMN0702440008	No Exceedances	

StormNet:	Results of Inspection	Follow-up Actions
STMN0702440085	Fluoride and Chlorine exceedance	IDID Call Center Number – 79476, received complaint on 11/5/2019 . On 11/5/2019, referred complainant to Fairfax Water. On 11/27/2019, Fairfax Waterstated that it was a leak in the customer line and the customerwas notified to make repairs. On 1/6/2020, SWPD followed up and observed only a trickle of flowat MS4 outfall STMN0702440085.
STMN0721437586	No Exceedances	
STMN0721437842	No Exceedances	
STMN0721514985	No Exceedances	
STMN0772458356	No Exceedances	
STMN0772458365	No Exceedances	
STMN0772458367	No Exceedances	
STMN0772458383	No Exceedances	
STMN0772458400	No Exceedances	
STMN0772458491	No Exceedances	
STMN0792456113	No Exceedances	
STMN0792456270	No Exceedances	
STMN0801455257	No Exceedances	
STMN0833060372	No Exceedances	
STMN0833063670	No Exceedances	
STMN0833460555	No Exceedances	
STMN0911473768	No Exceedances	
STMN0911473770	No Exceedances	
STMN0913076334	No Exceedances	
STMN0913481029	No Exceedances	
STMN0913481034	No Exceedances	
STMN0913481038	No Exceedances	
STMN0913481058	No Exceedances	
STMN0913481408	No Exceedances	
STMN0913506576	No Exceedances	
STMN0991489066	No Exceedances	
STMN0992075553	No Exceedances	
STMN0992488342	No Exceedances	
STMN0992515946	No Exceedances	
STMN1071500254	No Exceedances	
STMN1074058314	Copper Exceedance	IDID Work Order Number – 1830048, received complainant on 11/14/2019. Investigated on 11/15/2019 and found a rest room connected to storm drain system, and issued CAN on 11/15/2019. The illicit discharge of sewage was eliminated on 11/15/2019, the bathroom water was shutoff and the bathroom was blocked off. The sanitary cross connection is in the permitting process of being corrected to have the bathroom permanently reconnected to sanitary sewer.
STMN1074501718	No Exceedances	
STMN1074501721	No Exceedances	
STMN1074501729	No Exceedances	
STMN1074501733	No Exceedances	
STMN1074501740	No Exceedances	
STMN1081499705	No Exceedances	

Fairfax County 2020 MS4 Program Plan and Annual Report

Appendix R10

Wet Weather Screening Report

VSMP Permit Number VA0088587
9-30-2020

Site Name	Dominant Land Use	Event #	Date of Storm	Site Set-up	Most Recent Storm Event Prior to Collection	Rainfall Amount (inch)	Rain Event Length (hrs)	Sampler Program Length (hrs)	Analytical Results (event mean concentration)															
									Alkalinity (mg/L)	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^3+NO^2 (mg/L)	Ortho-P (mg/L)	P (mg/L)	TPH (mg/L)	TSS (mg/L)	Zn (mg/L)	pH	Sp. Cond. (mS/cm)
Prosperity Ave.	Commercial	1	10/16/2019*	16:10	10/13/2019	1.57	5.0	12.0	NA	< 0.00025	50	< 0.002	**0.0093**	22	0.802	0.0017	0.0018	0.741	0.0545	0.10	<5.9	21.0	**0.0494**	7.47	0.083
Franconia Forest Ln.	Commercial	1	10/16/2019*	11:30	10/13/2019	1.57	5.0	12.0	NA	**0.00059**	65	< 0.002	**0.0181**	28	0.972	0.0018	0.0024	0.250	0.0271	0.12	10.1	14.0	**0.0805**	7.56	0.074
Prosperity Ave.	Commercial	2	10/30/2019	12:30	10/27/2019	0.62	11.0	12.0	NA	0.000267	66	< 0.002	**0.0087**	30	0.928	< 0.001	0.0011	0.284	0.0609	0.086	< 5.6	5.5	0.0289	7.84	0.091
Franconia Forest Ln.	Commercial	2	10/30/2019	11:00	10/27/2019	0.62	11.0	12.0	NA	< 0.00025	57	< 0.002	**0.0125**	22	0.946	0.0016	0.0012	0.113	0.0197	0.068	< 5.4	10.0	**0.0330**	7.53	0.069
Franconia Forest Ln.	Commercial	3	3/18/2019	11:15	3/15/2020	0.34	6.0	12.0	NA	0.000496	120	0.0047	**0.0241**	27	**2.950**	0.0122	0.0047	**0.780**	0.0316	0.350	< 6.7	90.0	**0.1070**	6.84	0.140
Prosperity Ave.	Commercial	4	3/25/2020	13:45	3/23/2020	0.34	12.0	14.0	NA	0.000286	59	0.0039	**0.0147**	34	**2.560**	0.005	0.0026	0.499	0.1220	0.150	< 5.8	46.0	**0.0762**	6.73	0.184
Prosperity Ave.	Commercial	5	6/4/2020	14:30	5/28/2020	0.93	6.0	12.0	NA	0.000287	<50	<0.002	**0.0122**	52	**2.0**	0.0012	0.0019	**1.06**	0.0732	0.11	1.7	9.3	**0.0402**	7.02	0.137
Franconia Forest Ln.	Commercial	5	6/4/2020	12:00	5/28/2020	0.93	6.0	12.0	NA	<0.00025	<50	<0.002	**0.0152**	23	**2.2**	0.0013	0.0011	0.414	0.0603	0.15	2.1	<10	0.0301	7.48	0.159

*There were no predictable, qualifying storm events in Q1 of 2019 (July-Sept). Two storms were monitored in Q2 of 2019
(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.

Fairfax County 2020 MS4 Program Plan and Annual Report

Appendix R11

Summary of Annual Infrastructure Coordination Meetings with VDOT

VSMP Permit Number VA0088587

9-30-2020

Infrastructure Coordination Meeting Minutes
December 17, 2019, 10am-noon
NVRC

Attendees:

NVRC	Normand Goulet	VDOT	Marian Carroll
Prince William Co.	Marc Aveni		J. Alex Foraste
	David Ungar		David Wilson
	Benjamin Eib		Tracey Harmon
Fairfax Co.	Craig Carinci		Michelle Fults
	Heather Ambrose	Arlington Co.	Diana Handy
	Martin Hurd		

1. **Mapping**
    - VDOT has been consolidating legacy Access databases and moving to an ESRI ArcGIS online platform. Considerable progress has been made (and was demonstrated later in the meeting).
    - VDOT is in the process of developing a public-facing web map application that will show their updated MS4 service areas, BMPs, outfalls and basins.
        i. The app should allow sharing of data and updates for localities and should be searchable by county, SWM ID, PDC
        ii. It was discussed that the department's goal is to have some content to be available to the public in another six months
    - VDOT confirmed that they have been working with Fairfax County's GIS RE: data sharing and status updates.
    - VDOT has transitioned from the 'Falcon' data management system to 'Project Wise'. ProjectWise is able to store as-builts for BMPs but it is proving a challenge to integrate with ArcGIS.
    - VDOT transitioning to Survey 123 to collect georeferenced information and photo imagery and moving forward with drones to get map-based imagery. VDOT will happily accept additional data from localities.
    - VDOT developing an interface tool to generate site maps for new construction GPs
    - NVRC mentioned DEQ encouraging PDCs to become data collectors and to move to interactive maps (not static) that are available to the public
    - Prince William Co. has been updating their MS4 service area annually as opposed to one time per permit cycle
    - Fairfax County completed some minor updates (new infrastructure & corrections from field staff) to their MS4 service area and is amenable to share the data with adjacent MS4s.
2. **Illicit Discharge Detection Elimination**
    - VDOT is using the Survey 123 app to collect IDDE data
    - VDOT has replaced the older 8x11" IDDE field guide with a newer, sleeker pocket guide for field staff & contractors that is meant to be less programmatic
        i. NVRC suggested developing a regional field guide
        ii. Request to share IDDE Field Guide base files. Distributed via VITA fileshare.

- VDOT has revamped their IDDE training video which can be found on YouTube (search "VDOT IDDE") and produced a Good Housekeeping video for contractors that is not MS4 specific
    i. VDOT is including requirements that contractors document they have watched the video in new maintenance contracts
- VDOT will continue to coordinate with localities regarding IHHR facilities
- VDOT demonstrated their newly developed online dashboard and heat map of IDDE data collected through Survey 123. It is still being developed and is not yet available to the public. The dashboard categorizes incidents and allows users to click on a location to view the data associated with the incident
    i. It was discussed that ESRIs GIS software suite including storymap and dashboard applications were being utilized to facilitate certain components of the MS4 program.
- VDOT is investigating potential contaminated groundwater discharges into their storm system and has coordinated with Fairfax County's IDID staff regarding groundwater discharges to their MS4 from the Lumens Bldg. in Tysons.
- Prince William Co. has recently updated their IHRR outfalls. They've noticed outfalls from shopping centers have increased potential to contribute pollution to the MS4 and are including them in their IHRR program.
- Fairfax County's IHRR staff update the IHRR facility inventory on an annual basis, to add new facilities, change status (noting closures, relocations, or if a facility does not meet the definition of IHRR), and remove facilities. The GIS information can be shared with VDOT during data exchanges between staff.
- Arlington Co. has an open line of communication with VDOT and regularly includes VDOT on emails to DEQ regarding IDDEs. Arlington recently collaborated with VDOT on a construction project to ensure adequate monitoring is being conducted to minimize stormwater pollution.

3. Chesapeake Bay TMDL

- VDOT has several TMDL projects underway
    i. Mentioned Pike Branch in Fairfax County (4,300 LF stream restoration scheduled for completion in May or June 2020; completely contained within VDOT ROW) and Lake Ridge (700 LF) in PWC
- VDOT has developed an IFB to purchase nutrient credits-looking for more nitrogen credits.
- VDOT demonstrated a recently completed analysis that identified and optimized potential opportunities to implement grass swales and other plantings in medians and other parts of the ROW. Marc asked VDOT to please share the potential project locations with the localities.
- VDOT is investigating shoreline restoration projects, but none are located in the NOVA area at this time.
- VDOT also has several outfall restoration projects in the pipeline.
- NVRC asked about the potential for tree planting on VDOT ROWs and open spaces given the Phase III WIP tree requirements that are included in the milestones document

    i. VDOT will get first choice on credit opportunities on lands managed by state agencies.
- Urban Forestry in Fairfax looking for ways to meet tree canopy goals and that this could be a potential partnership.
- PWC and Fairfax both stated they are looking for partnership opportunities to meet TMDL reductions- NVRC suggested having a follow up discussion in a future meeting
- VDOT working with RES on an on-call task order to pursue additional contracts that could be used for partnering opportunities and this has been a very cost-effective approach
    i. VDOT mostly interested in turn-key project in which VDOT only pays for the lbs of pollutant removed
- Fairfax Co. has a comprehensive project prioritization and selection process that is used for both stream restoration and other basin projects.
    i. NVRC requested Fairfax present this tool at the next MS4 meeting in early 2020
- NVRC advised the group to be careful of adopting the new protocols to stream restorations at this time- they are still under review by the CBP expert panel and DEQ has not yet provided a revised guidance document.
- Fairfax County shared that the most recent details on the means, methods, and schedule for implementation to achieve reductions for the Chesapeake Bay special condition are available on Fairfax County's website in the FY19 MS4 Annual Report Appendix for the Bay TMDL Action Plan and that he would provide the link to Norm after the meeting.
- The group re-affirmed that the current coordination and governance processes in place for project selection prevent the MS4s present from double-counting pollution reductions in our Bay TMDL Action Plans.

4. Local TMDLs

- VDOT has developed a local TMDL fact sheet for each residency including VDOT facilities in each TMDL watershed. VDOT will email the fact sheets to NVRC to distribute to the MS4s.
- NVRC suggested combining efforts regionally for TMDL education and outreach. NVRC is working on PCB outreach material that can be used by MS4s in the PDC.
- DEQ met with NVRC yesterday (Dec 16) to discuss the future of the SaMS effort and that there is a good chance that NVRC will be taking this over and adding an FTE to manage this program.
- In the most recent DEQ 303(d) list, Four Mile Run was listed with a benthic impairment. An analysis to determine stressors (possibly Chloride) and a TMDL will probably be forthcoming.
- Fairfax County provided an update on their litter pilot program utilizing non-profit agencies and the County's homeless population to assist with litter cleanup. Prince William Co. has staff that function as a litter pick-up crew.
- PWC recently toured DC's bandalong installations and is considering installing one. Fairfax County's bandalong construction has not been completed.
- Everyone agreed there is a need for increased TMDL coordination between VDOT and the localities.

- The group discussed Fairfax County's BOS letter to VDOT requesting that VDOT incorporate the county's local design standards into VDOT construction projects. Currently, VDOT requires a formal request be submitted during the public hearing for each individual construction project.

5. **Water Quality Monitoring**
    - Fairfax County's Watershed Assessment Branch continues to collect water quality, biological, and physical habitat data and it was reiterated that the county can provide the information to VDOT and other partners present if it would be useful for their programs.
6. **Annual Reporting**
    - Fairfax Co. has a permit requirement to report on VDOT coordination efforts. Fairfax County also provided meeting notes to participants and asked for all to review the notes for accuracy as they will be included in our next MS4 Annual Report.

Fairfax County 2020 MS4 Program Plan and Annual Report

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
9-30-2020

During the 2020 permit cycle, the five selected bioassessment sites within Fairfax County were monitored twice for benthic macroinvertebrates and habitat. The fall samples held an average of four more taxa than the spring samples. 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.

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 4 years of annual data.

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	43.7	Impaired (1)	96
			Spring	19.7	Impaired (3)	117
01645762 – South Fork Little Difficult Run	38°54'35"	77°20'14.6" NAD27	Fall	51.8	Impaired (1)	104
			Spring	28	Impaired (2)	111
01646305 – Dead Run	38°57'34.8"	77°10'33.5" NAD27	Fall	44.4	Impaired (1)	118
			Spring	20.7	Impaired (2)	131
01654500 – Long Branch	38°48'39"	77°14'07" NAD27	Fall	43.4	Impaired (1)	101
			Spring	16.1	Impaired (3)	96
01656903 – Flatlick Branch	38°52'56.2"	77°25'55.9" NAD27	Fall	27.7	Impaired (2)	136
			Spring	29.6	Impaired (2)	127

Fairfax County 2020 MS4 Program Plan and Annual Report

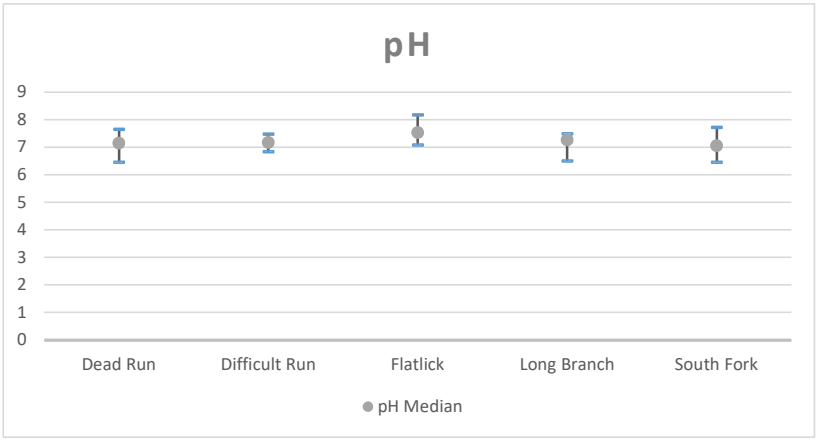
Appendix R13

In-Stream Monitoring Report

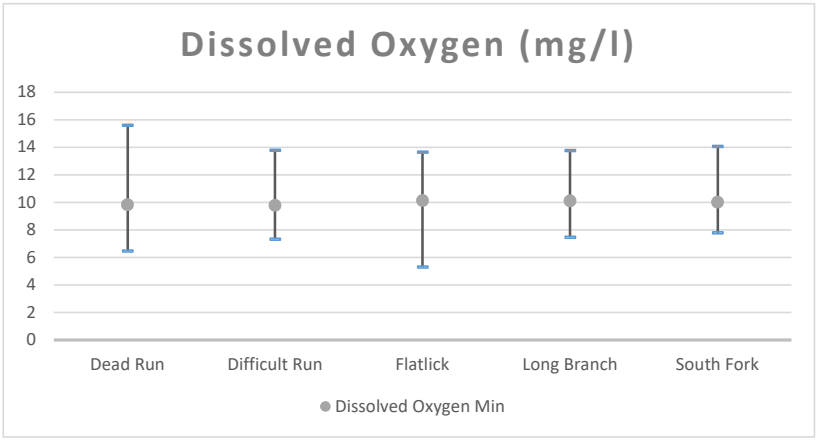
VSMP Permit Number VA0088587
9-30-2020

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	7.16
Difficult Run	38°53'04.5"	77°19'57.8" NAD27	6.84	7.48	7.18
Flatlick	38°52'56.2"	77°25'55.9" NAD27	7.09	8.18	7.545
Long Branch	38°48'39"	77°14'07" NAD27	6.5	7.49	7.275
South Fork	38°54'35"	77°20'14.6" NAD27	6.46	7.72	7.07

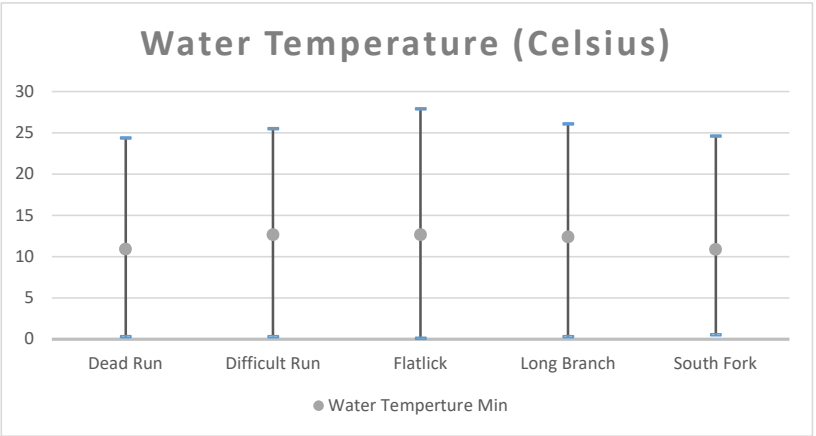


			Dissolved Oxygen		
	Latitude	Longitude	Min	Max	Median
Dead Run	38°57'34.8"	77°10'33.5" NAD27	6.46	15.61	9.82
Difficult Run	38°53'04.5"	77°19'57.8" NAD27	7.33	13.78	9.785
Flatlick	38°52'56.2"	77°25'55.9" NAD27	5.31	13.66	10.12
Long Branch	38°48'39"	77°14'07" NAD27	7.46	13.76	10.1
South Fork	38°54'35"	77°20'14.6" NAD27	7.79	14.07	10.01

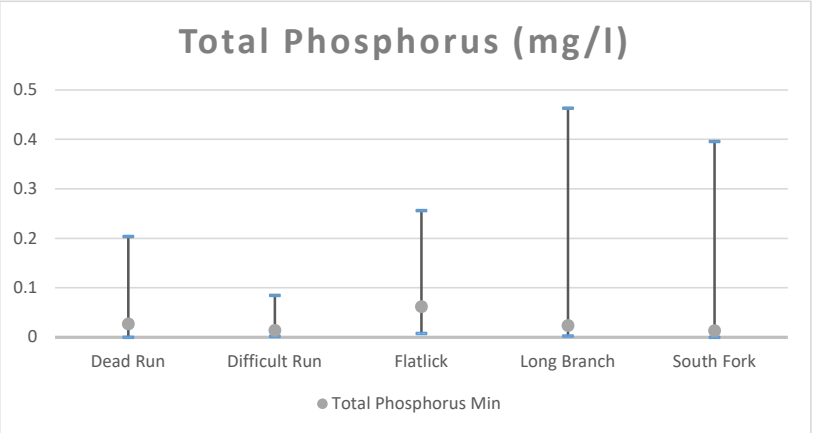


The in-stream monitoring sites began monitoring during reporting period 2017, trends will be evaluated in the future when sufficient data has been gathered.

			Water Temperture		
	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	26.094	12.395
South Fork	38°54'35"	77°20'14.6" NAD27	0.55	24.603	10.87

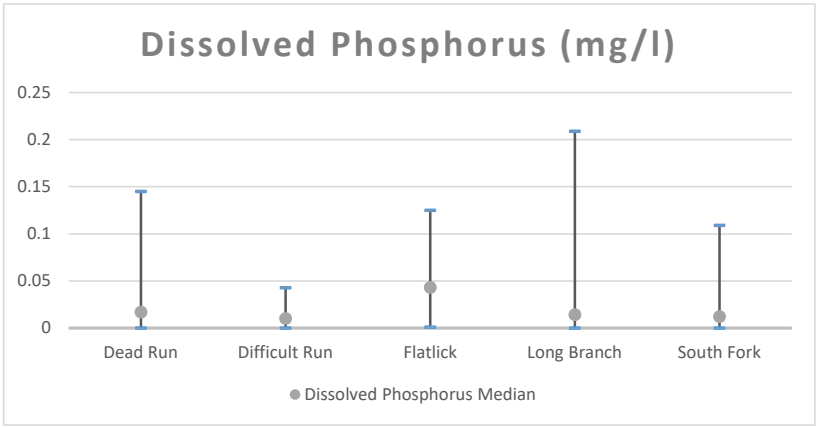


			Total Phosphorus		
	Latitude	Longitude	Min	Max	Median
Dead Run	38°57'34.8"	77°10'33.5" NAD27	0	0.204	0.027
Difficult Run	38°53'04.5"	77°19'57.8" NAD27	0.002	0.085	0.014
Flatlick	38°52'56.2"	77°25'55.9" NAD27	0.008	0.256	0.062
Long Branch	38°48'39"	77°14'07" NAD27	0.003	0.463	0.0235
South Fork	38°54'35"	77°20'14.6" NAD27	0	0.396	0.0135

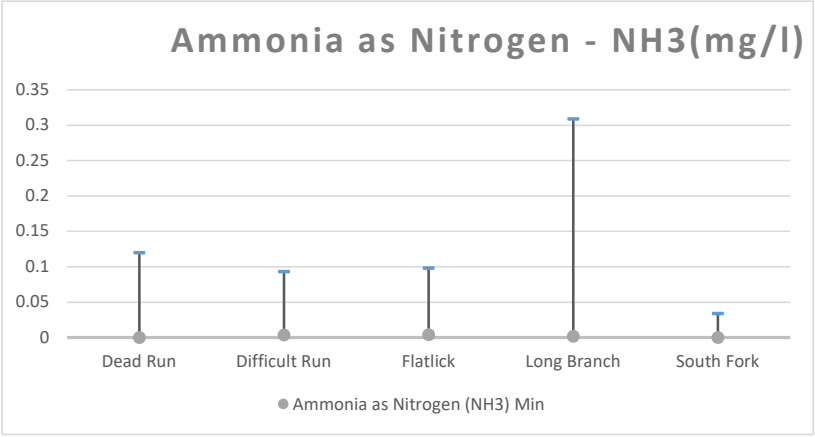


The in-stream monitoring sites began monitoring during reporting period 2017, trends will be evaluated in the future when sufficient data has been gathered.

			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	0.01
Flatlick	38°52'56.2"	77°25'55.9" NAD27	0.001	0.125	0.043
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	0.012

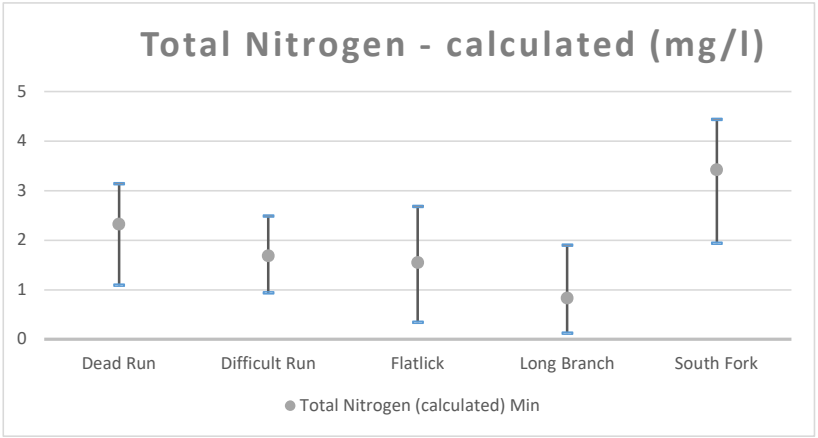


			Ammonia as Nitrogen (NH3)		
	Latitude	Longitude	Min	Max	Median
Dead Run	38°57'34.8"	77°10'33.5" NAD27	0	0.12	0
Difficult Run	38°53'04.5"	77°19'57.8" NAD27	0	0.093	0.0035
Flatlick	38°52'56.2"	77°25'55.9" NAD27	0	0.098	0.004
Long Branch	38°48'39"	77°14'07" NAD27	0	0.309	0.0015
South Fork	38°54'35"	77°20'14.6" NAD27	0	0.034	0

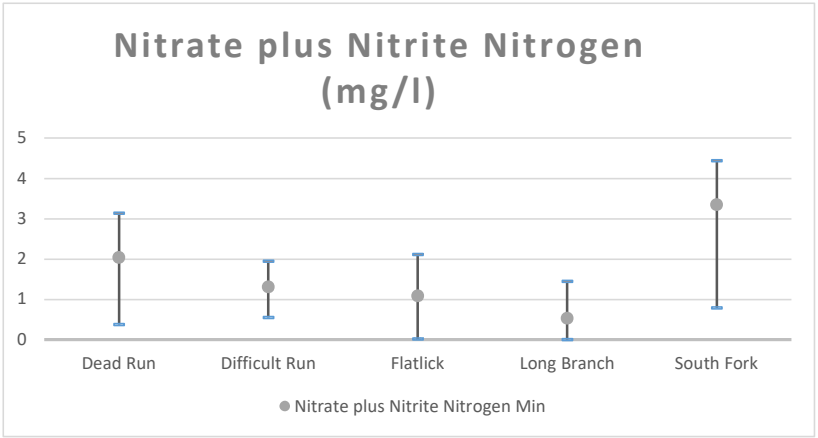


The in-stream monitoring sites began monitoring during reporting period 2017, trends will be evaluated in the future when sufficient data has been gathered.

			Total Nitrogen (calculated)		
	Latitude	Longitude	Min	Max	Median
Dead Run	38°57'34.8"	77°10'33.5" NAD27	1.09	3.14	2.32
Difficult Run	38°53'04.5"	77°19'57.8" NAD27	0.937	2.49	1.685
Flatlick	38°52'56.2"	77°25'55.9" NAD27	0.346	2.68	1.55
Long Branch	38°48'39"	77°14'07" NAD27	0.121	1.9	0.8325
South Fork	38°54'35"	77°20'14.6" NAD27	1.94	4.44	3.42

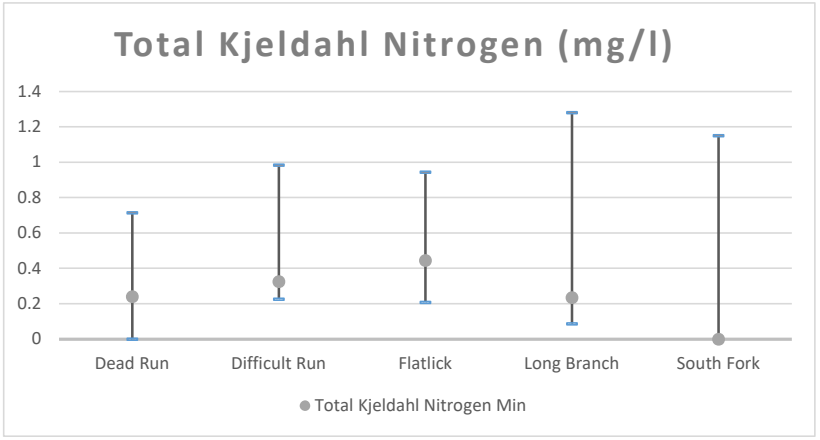


			Nitrate plus Nitrite Nitrogen		
	Latitude	Longitude	Min	Max	Median
Dead Run	38°57'34.8"	77°10'33.5" NAD27	0.376	3.14	2.035
Difficult Run	38°53'04.5"	77°19'57.8" NAD27	0.552	1.95	1.31
Flatlick	38°52'56.2"	77°25'55.9" NAD27	0.016	2.11	1.085
Long Branch	38°48'39"	77°14'07" NAD27	0	1.45	0.53
South Fork	38°54'35"	77°20'14.6" NAD27	0.79	4.44	3.345

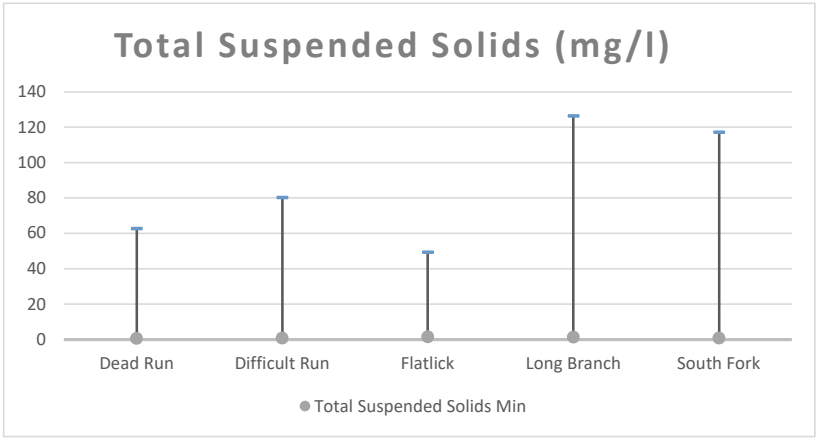


The in-stream monitoring sites began monitoring during reporting period 2017, trends will be evaluated in the future when sufficient data has been gathered.

			Total Kjeldahl Nitrogen		
	Latitude	Longitude	Min	Max	Median
Dead Run	38°57'34.8"	77°10'33.5" NAD27	0	0.715	0.2395
Difficult Run	38°53'04.5"	77°19'57.8" NAD27	0.227	0.984	0.325
Flatlick	38°52'56.2"	77°25'55.9" NAD27	0.209	0.944	0.445
Long Branch	38°48'39"	77°14'07" NAD27	0.088	1.28	0.234
South Fork	38°54'35"	77°20'14.6" NAD27	0	1.15	0

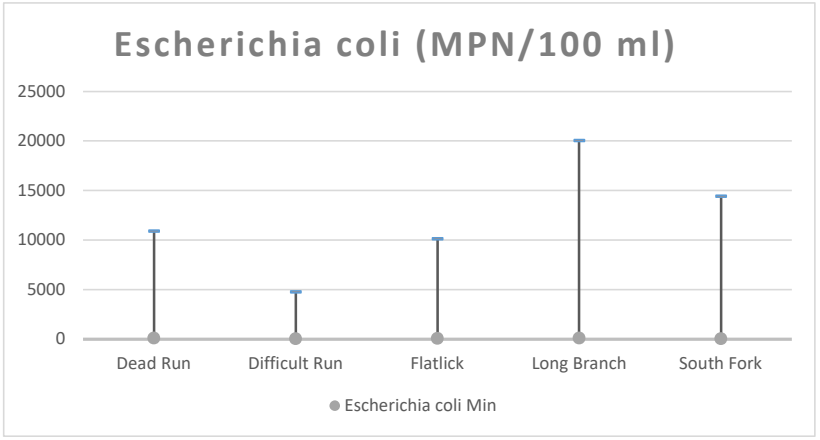


			Total Suspended Solids		
	Latitude	Longitude	Min	Max	Median
Dead Run	38°57'34.8"	77°10'33.5" NAD27	0.2	62.7	0.75
Difficult Run	38°53'04.5"	77°19'57.8" NAD27	0.1	80.3	0.9
Flatlick	38°52'56.2"	77°25'55.9" NAD27	0.2	49.4	1.65
Long Branch	38°48'39"	77°14'07" NAD27	0.1	126.4	1.3
South Fork	38°54'35"	77°20'14.6" NAD27	0.2	117.2	0.85



The in-stream monitoring sites began monitoring during reporting period 2017, trends will be evaluated in the future when sufficient data has been gathered.

			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	59.5
Flatlick	38°52'56.2"	77°25'55.9" NAD27	8	10130	76.5
Long Branch	38°48'39"	77°14'07" NAD27	9	20050	131
South Fork	38°54'35"	77°20'14.6" NAD27	3	14450	39.5



Fairfax County 2020 MS4 Program Plan and Annual Report

Appendix R14

A Summary of the Monitoring Results and Analyses from the Floatables Monitoring

VSMP Permit Number VA0088587
9-30-2020

Monitoring protocol summary and List of sites sampled

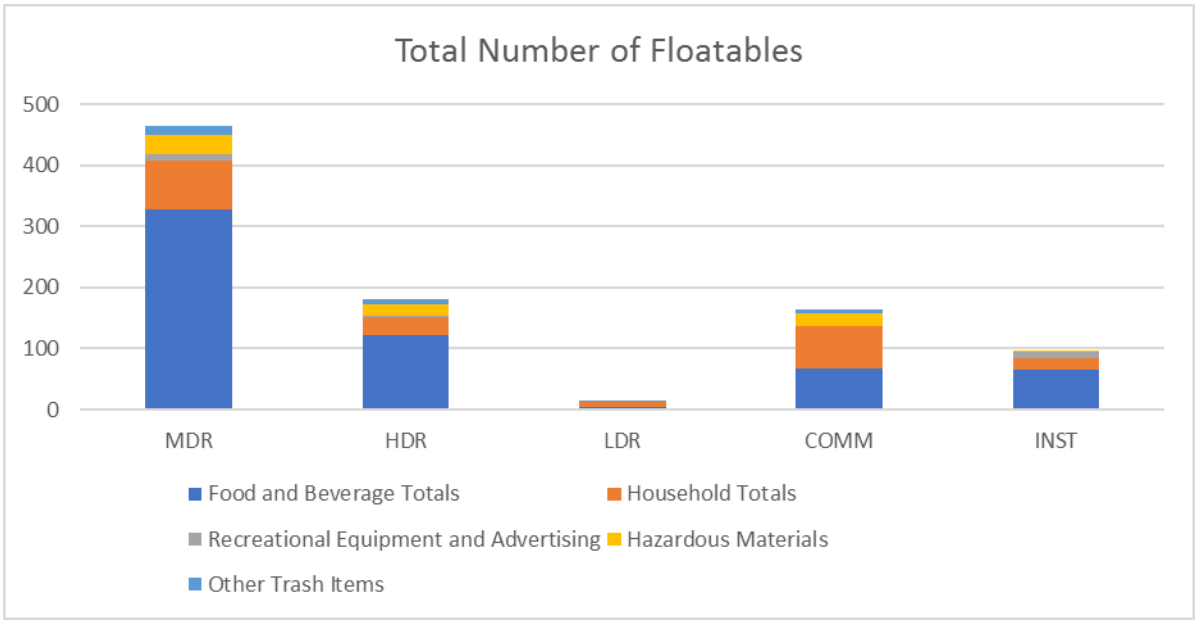
Floatables monitoring was conducted at five (5) monitoring sites located at MS4 outfalls. Sites were chosen to be representative of the primary land cover classes that occur in the MS4 service area: High, Medium, and Low Density Residential, Commercial, and Institutional. The StormNet IDs and land cover classifications for the floatable monitoring sites are:

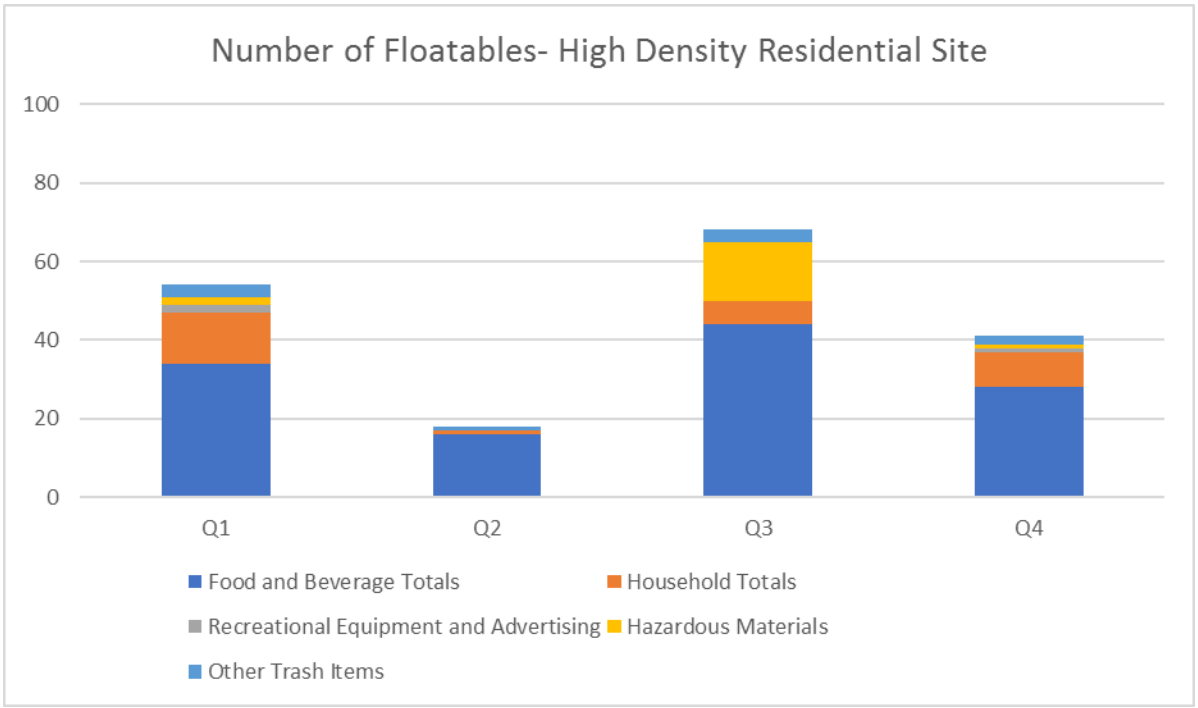
1. STMN0212404236 - 83% Low Density Residential (LDR)
2. STMN0293016090 - 93% Commercial
3. STMN0583435398 - 89% Institutional
4. STMN0651048577 - 100% Medium Density Residential (MDR)
5. STMN0791456509 - 87% High Density Residential (HDR)

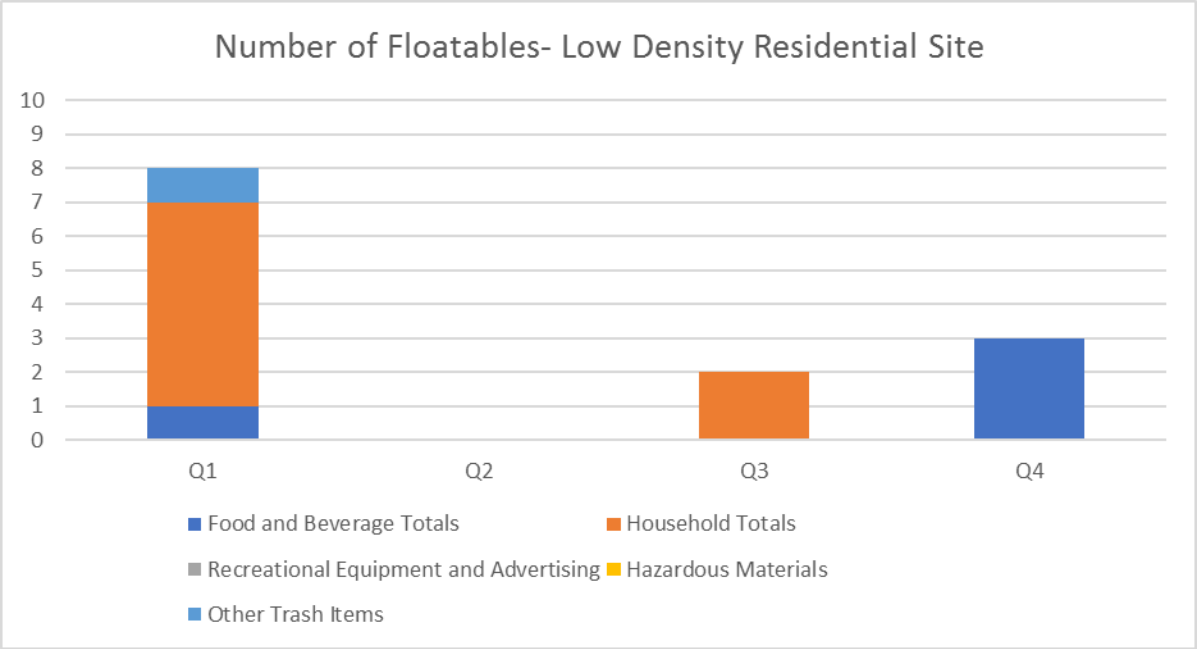
Monitoring is conducted once per quarter. During monitoring events, staff count the number of floatables visually observed within the bank full area for 100 linear feet below the MS4 outfall. Staff remove all litter all from sites immediately after floatable counts are recorded in order to prevent the potential to double-count floatables.

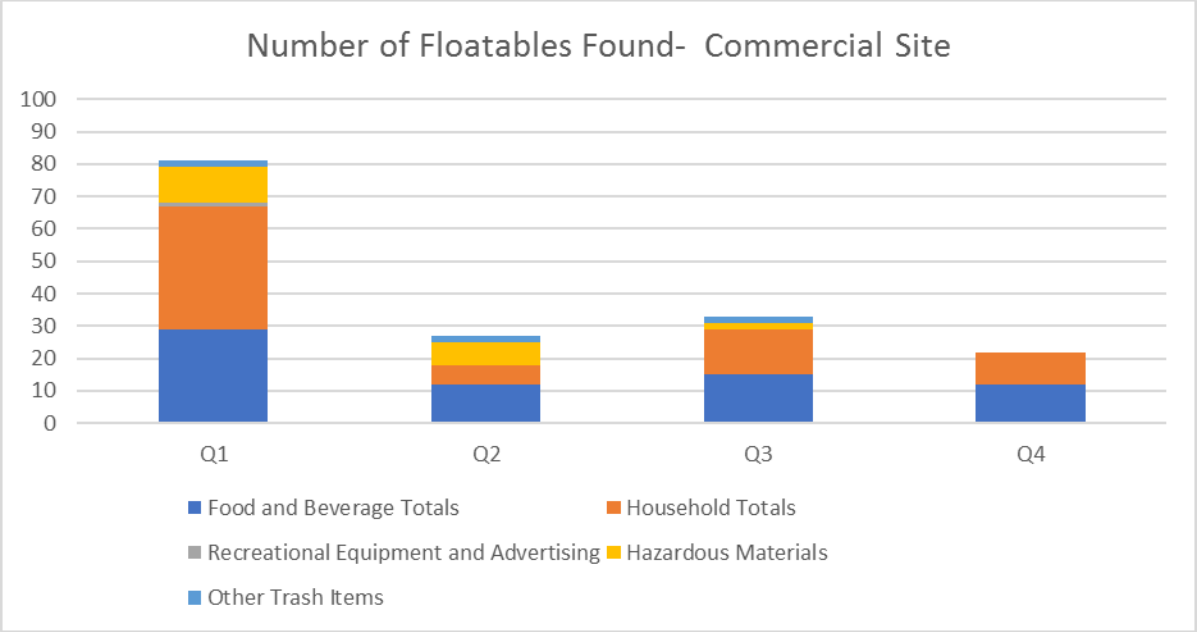
Summary of Monitoring Results

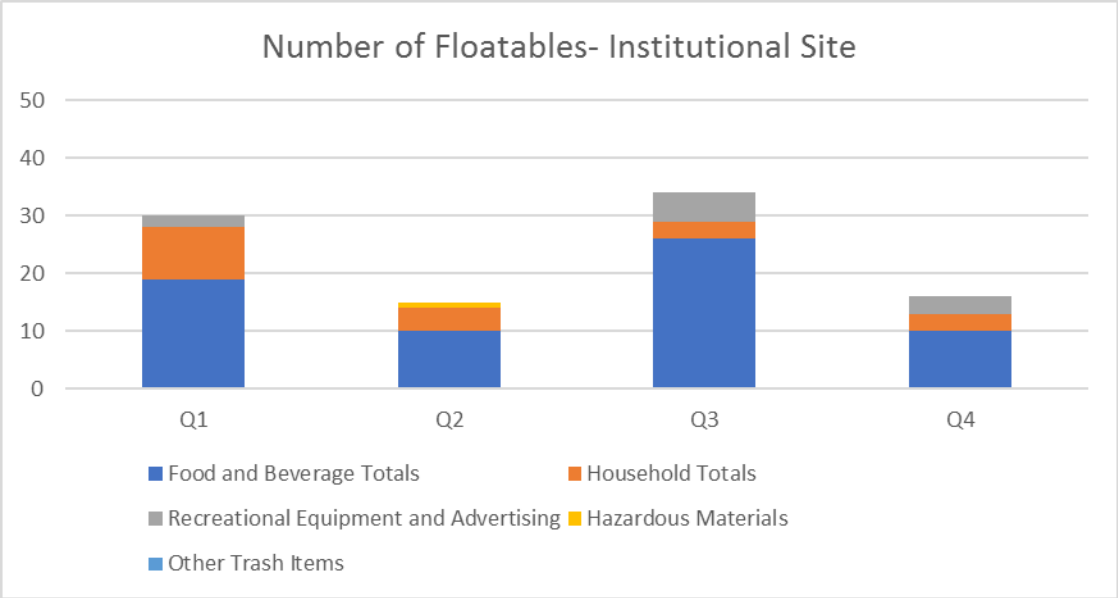
Floatables are consistently found in the highest numbers at the medium density residential site, and in the lowest numbers at the low density residential site. Food and beverage containers, such as bottles, plastic bags, and wrappers are typically found in highest numbers across all of the sites. Staff have noted that improper disposal of floatables is occurring along the riparian area of some sites and some portion of the floatables does not originate from the MS4 outfall. This is most evident at the MDR and COMM sites. In FY20, additional sites were targeted for monitoring with the goal of improving the confidence in observations made at the compliance sites currently being monitored.

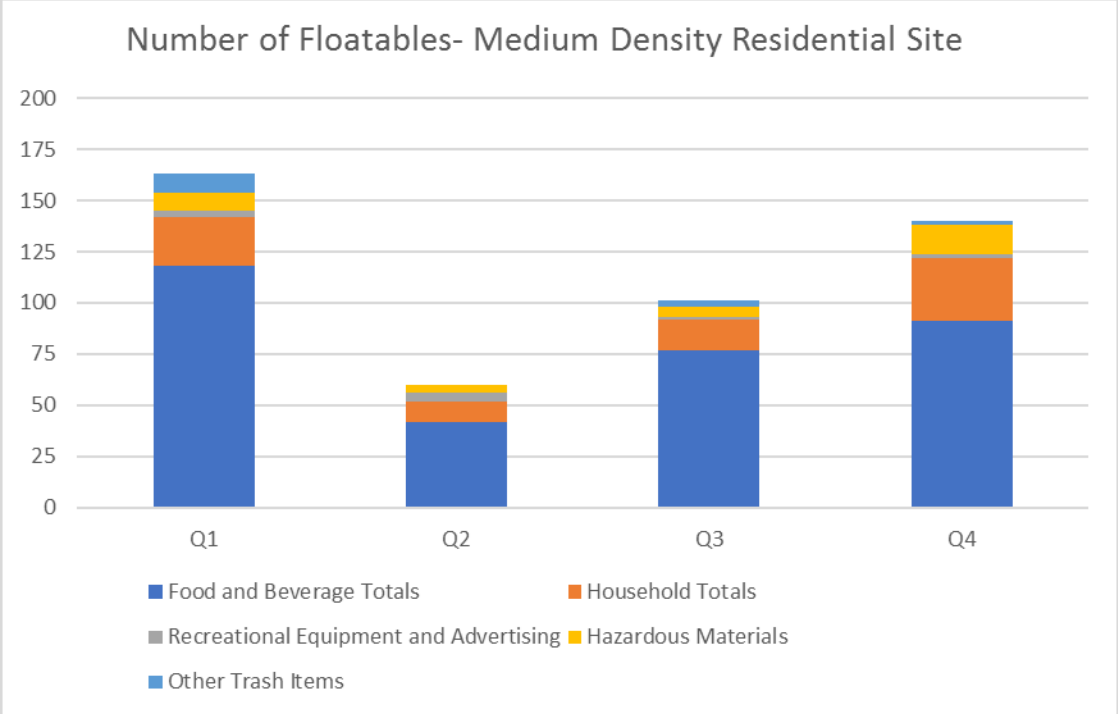

Total Number of Floatables
500
400
300
200
100
0
MDR
HDR
LDR
COMM
INST
Food and Beverage Totals
Household Totals
Recreational Equipment and Advertising
Hazardous Materials
Other Trash Items


Number of Floatables- High Density Residential Site
100
80
60
40
20
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 Site
10
9
8
7
6
5
4
3
2
1
0
Q1
Q2
Q3
Q4
Food and Beverage Totals
Household Totals
Recreational Equipment and Advertising
Hazardous Materials
Other Trash Items


Number of Floatables Found- Commercial Site
100
90
80
70
60
50
40
30
20
10
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
50
40
30
20
10
0
Q1
Q2
Q3
Q4
Food and Beverage Totals
Household Totals
Recreational Equipment and Advertising
Hazardous Materials
Other Trash Items


Number of Floatables- Medium Density Residential Site
200
175
150
125
100
75
50
25
0
Q1
Q2
Q3
Q4
Food and Beverage Totals
Household Totals
Recreational Equipment and Advertising
Hazardous Materials
Other Trash Items

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Appendix R15

Database of SWM Facilities Brought Online
During the Reporting Period
(FY20_FairfaxCounty_BMPData.xlsx)

VSMP Permit Number VA0088587
9-30-2020

Facility ID	Site ID	Maintained By	Date Installed	BMP Name	Impervious Acres Treated (ac)	Pervious Acres Treated (ac)	Latitude	Longitude	Inspection Date/Year	Facility Address	Facility City/State/Zip	PMA	HUC6	Receiving Water Name	Receiving Water ID	Receiving Water Impaired	Facility Discharges to Fairfax County's MS4?
BR0777	S3697	Private	8/29/2019	BIORETENTION/STORMWATER PLANTER	0.0240	0.0000	38.840511	-77.336068	5/5/2020	4516 Forest Dr.	Fairfax, VA 22030	NO	PL46	Lower Bull Run	VAN-A23R_ZZZ46A00	No	No
BR0778	S3697	Private	8/29/2019	BIORETENTION/STORMWATER PLANTER	0.0210	0.0000	38.840482	-77.335897	5/5/2020	4516 Forest Dr.	Fairfax, VA 22030	NO	PL46	Lower Bull Run	VAN-A23R_ZZZ46A00	No	No
BR0779	S3697	Private	8/29/2019	BIORETENTION/STORMWATER PLANTER	0.0130	0.0000	38.840601	-77.335909	5/5/2020	4516 Forest Dr.	Fairfax, VA 22030	NO	PL46	Lower Bull Run	VAN-A23R_ZZZ46A00	No	No
BR0780	S3701	Private	9/4/2019	BIORETENTION	0.0700	0.0000	38.856956	-77.184753	4/21/2020	3301 Slade Run Dr.	Falls Church, VA 22042	YES	PL26	Holmes Run	VAN-A13R_HOR01B00	Yes	Yes
BR0781	S3719	Private	9/6/2019	BIORETENTION	0.0400	0.0400	38.834021	-77.158814	4/20/2020	6451 Holyoke Dr.	Annandale, VA 22003	YES	PL26	Turkeycock Run	VAN-A13R_TUC01A14	No	No
BR0784	S3722	Private	9/6/2019	BIORETENTION	0.0570	0.1250	38.900701	-77.167435	4/29/2020	6514 Roosevelt St.	Falls Church, VA 22043	YES	PL25	Four Mile Run	VAN-A12R_FOU01A00	Yes	Yes
BR0785	S3723	Private	9/18/2019	BIORETENTION	0.0890	0.0490	38.831841	-77.146934	4/15/2020	6330 Hillcrest Pl.	Alexandria, VA 22312	YES	PL26	Holmes Run	VAN-A13R_HOR01A00	Yes	No
BR0786	S3724	Private	9/18/2019	BIORETENTION	0.0600	0.0700	38.903606	-77.235053	5/7/2020	2133 Frank St.	Vienna, VA 22182	YES	PL22	Wolftrap Creek	VAN-A11R_WOT02A14	No	Yes
BR0787	S3724	Private	9/18/2019	BIORETENTION	0.0600	0.1030	38.903838	-77.235526	5/7/2020	2133 Frank St.	Vienna, VA 22182	YES	PL22	Wolftrap Creek	VAN-A11R_WOT02A14	No	Yes
BR0788	S3725	Private	9/18/2019	BIORETENTION	0.0800	0.1400	38.820768	-77.159002	4/15/2020	4728 Virginia St.	Alexandria, VA 22312	YES	PL26	Cameron Run	VAN-A13R_ZZZ26A00	No	Yes
BR0789	S3725	Private	9/18/2019	BIORETENTION	0.0700	0.0840	38.820843	-77.159574	4/15/2020	4728 Virginia St.	Alexandria, VA 22312	YES	PL26	Cameron Run	VAN-A13R_ZZZ26A00	No	Yes
BR0790	S3726	Private	9/18/2019	BIORETENTION	0.0650	0.0050	38.847997	-77.182619	4/21/2020	3507 Slade Run Dr.	Falls Church, VA 22042	YES	PL26	Holmes Run	VAN-A13R_HOR01B00	Yes	No
BR0791	S3727	Private	9/18/2019	BIORETENTION	0.0500	0.0940	38.819883	-77.152588	4/15/2020	4796 Chowan Av.	Alexandria, VA 22312	YES	PL26	Cameron Run	VAN-A13R_ZZZ26A00	No	No
BR0792	S3727	Private	9/18/2019	BIORETENTION	0.0900	0.1270	38.819801	-77.152195	4/15/2020	4798 Chowan Av.	Alexandria, VA 22312	YES	PL26	Cameron Run	VAN-A13R_ZZZ26A00	No	No
BR0793	S3727	Private	9/18/2019	BIORETENTION	0.0800	0.1050	38.819434	-77.152492	4/15/2020	4794 Chowan Av.	Alexandria, VA 22312	YES	PL26	Cameron Run	VAN-A13R_ZZZ26A00	No	Yes
BR0794	S3728	Private	9/18/2019	BIORETENTION	0.0300	0.0270	38.848095	-77.141571	4/20/2020	3519 Lake St.	Falls Church, VA 22041	YES	PL26	Holmes Run	VAN-A13R_HOR01A00	Yes	Yes
BR0795	S3728	Private	9/18/2019	BIORETENTION	0.0500	0.0800	38.847955	-77.141739	4/20/2020	3519 Lake St.	Falls Church, VA 22041	YES	PL26	Holmes Run	VAN-A13R_HOR01A00	Yes	Yes
BR0796	S3729	Private	9/18/2019	BIORETENTION	0.0720	0.0170	38.869062	-77.184	4/14/2020	3009 Marshall St.	Falls Church, VA 22042	YES	PL26	Tripps Run	VAN-A13R_TRI01A00	Yes	No
BR0798	S3731	Private	11/6/2019	BIORETENTION	0.0950	0.1780	38.861706	-77.145591	4/15/2020	3235 Apex Ci.	Falls Church, VA 22044	YES	PL25	Long Branch	VAN-A12R_LOF01A08	No	Yes
BR0799	S3732	Private	11/6/2019	BIORETENTION	0.0620	0.2120	38.835784	-77.191954	4/21/2020	4018 Travis Pw.	Annandale, VA 22044	YES	PL26	Cameron Run	VAN-A13R_ZZZ26A00	No	Yes
BR0800	S3733	Private	9/18/2019	BIORETENTION	0.0841	0.0301	38.800133	-77.148937	4/20/2020	6224 Bren Mar Dr.	Alexandria, VA 22312	YES	PL26	Indian Run	VAN-A13R_INA01A06	Yes	Yes
BR0801	S3734	Private	11/6/2019	BIORETENTION	0.0500	0.1500	38.847612	-77.138266	4/20/2020	3522 Tyler St.	Falls Church, VA 22041	YES	PL26	Holmes Run	VAN-A13R_HOR01A00	Yes	Yes
BR0802	S3734	Private	11/6/2019	BIORETENTION	0.0500	0.1150	38.847732	-77.138347	4/20/2020	3520 Tyler St.	Falls Church, VA 22041	YES	PL26	Holmes Run	VAN-A13R_HOR01A00	Yes	Yes
BR0803	S3740	Private	10/24/2019	BIORETENTION/STORMWATER PLANTER	0.0235	0.0000	38.913223	-77.203483	5/5/2020	7503 Fisher Dr.	Falls Church, VA 22043	NO	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
BR0804	S3740	Private	10/24/2019	BIORETENTION/STORMWATER PLANTER	0.0209	0.0000	38.913052	-77.203532	5/5/2020	7503 Fisher Dr.	Falls Church, VA 22043	NO	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
BR0805	S3748	Private	11/13/2019	BIORETENTION	0.1500	0.0000	38.955931	-77.181479	5/13/2020	6820 Benjamin St.	McLean, VA 22101-1500	YES	PL23	Dead Run	VAN-A11R_DEA01A04	Yes	No
BR0806	S3752	Private	9/19/2019	BIORETENTION	0.0500	0.0000	38.925507	-77.180144	4/23/2020	1604 Simmons Dr.	McLean, VA 22101	YES	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
BR0807	S3753	Private	9/19/2019	BIORETENTION	0.0530	0.0000	38.912875	-77.173266	4/27/2020	6615 Denny Pl.	McLean, VA 22101	YES	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
BR0808	S3756	Private	9/19/2019	BIORETENTION	0.0600	0.0000	38.844959	-77.210861	4/20/2020	7801 Trammel Rd.	Annandale, VA 22003	YES	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	No
BR0809	S3761	Private	2/6/2020	BIORETENTION	0.2400	0.1000	38.947592	-77.255171	FY21	1320 Alps Dr.	McLean, VA 22102-1502	YES	PL22	Difficult Run	VAN-A11R_ZZZ22A00	No	Yes
BR0810	S3768	Private	10/25/2019	BIORETENTION	0.0900	0.0000	38.929186	-77.162112	4/27/2020	1505 Oakview Dr.	McLean, VA 22101	YES	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
BR0812	S3775	Private	2/28/2020	BIORETENTION	0.1600	0.0000	38.76534	-77.164708	FY21	6473 Windham Av.	Alexandria, VA 22315-3416	YES	PL30	Long Branch	VAN-A15R_LOA01A08	Yes	No
BR0814	S3742	Private	10/24/2019	BIORETENTION	0.0556	0.0000	38.907306	-77.199692	5/4/2020	2043 Arch Dr.	Falls Church, VA 22043	YES	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
BR0816	S3802	Private	3/24/2020	BIORETENTION/STORMWATER PLANTER	0.0200	0.0000	38.929872	-77.132451	FY21	1462 Highwood Dr.	McLean, VA 22101	YES	PL24	Pimmit Run	VAN-A12R_PIM01A00	Yes	Yes
BR0817	S3805	Private	3/24/2020	BIORETENTION	0.0900	0.0000	38.920155	-77.159592	FY21	6401 Old Chesterbrook Rd.	McLean, VA 22101	NO	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	No
BR0818	S0063	Private	3/25/2020	BIORETENTION/STORMWATER PLANTER	0.0270	0.0000	38.937634	-77.181258	FY21	near 6862 Elm St.	McLean, VA 22101	YES	PL23	Dead Run	VAN-A11R_DEA01A04	Yes	Yes
BR0819	S0063	Private	3/25/2020	BIORETENTION/STORMWATER PLANTER	0.0170	0.0000	38.937561	-77.181152	FY21	near 6862 Elm St.	McLean, VA 22101	YES	PL23	Dead Run	VAN-A11R_DEA01A04	Yes	Yes
BR0820	S0063	Private	3/25/2020	BIORETENTION/STORMWATER PLANTER	0.0330	0.0000	38.937487	-77.181049	FY21	near 6862 Elm St.	McLean, VA 22101	YES	PL23	Dead Run	VAN-A11R_DEA01A04	Yes	Yes
BR0821	S0063	Private	3/25/2020	BIORETENTION/STORMWATER PLANTER	0.0480	0.0000	38.937415	-77.180943	FY21	near 6862 Elm St.	McLean, VA 22101	YES	PL23	Dead Run	VAN-A11R_DEA01A04	Yes	Yes
BR0822	S3809	Private	3/26/2020	BIORETENTION	0.0400	0.0000	38.927837	-77.179328	FY21	6803 Dillon Av.	McLean, VA 22101-4435	YES	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	No
BR0823	S3816	Private	3/27/2020	BIORETENTION/STORMWATER PLANTER	0.0100	0.0000	38.917664	-77.171595	FY21	6610 Tucker Av.	McLean, VA 22101	NO	PL24	Pimmit Run	VAN-A12R_PIM02B06	Yes	Yes
BR0824	S3823	Private	3/30/2020	BIORETENTION/STORMWATER PLANTER	0.0400	0.0000	38.897983	-77.1667	FY21	6512 32nd St.	Falls Church, VA 22046	YES	PL25	Four Mile Run	VAN-A12R_FOU01A00	Yes	Yes
BR0825	S3828	Private	3/31/2020	BIORETENTION	0.1100	0.0000	38.872442	-77.232178	FY21	2918 Eskridge Rd.	Fairfax, VA 22031	YES	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	Yes
BR0826	S3829	Private	3/31/2020	BIORETENTION/STORMWATER PLANTER	0.0200	0.0000	38.909982	-77.20077	FY21	2035 Cherri Dr.	Falls Church, VA 22043	YES	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	No
BR0827	S3829	Private	3/31/2020	BIORETENTION/STORMWATER PLANTER	0.0100	0.0000	38.90992	-77.200635	FY21	2035 Cherri Dr.	Falls Church, VA 22043	YES	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	No
BR0828	S3830	Private	3/31/2020	BIORETENTION/STORMWATER PLANTER	0.0200	0.0000	38.902141	-77.161031	FY21	2145 Emilys Ln.	Falls Church, VA 22043-1915	YES	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	No
BR0829	S3838	Private	4/1/2020	BIORETENTION/STORMWATER PLANTER	0.0150	0.0000	38.919621	-77.183055	FY21	6914 Southridge Dr.	McLean, VA 22101	NO	PL24	Pimmit Run	VAN-A12R_PIM02B06	Yes	Yes
BR0830	S3838	Private	4/1/2020	BIORETENTION/STORMWATER PLANTER	0.0130	0.0000	38.919526	-77.183054	FY21	6914 Southridge Dr.	McLean, VA 22101	NO	PL24	Pimmit Run	VAN-A12R_PIM02B06	Yes	Yes
BR0831	S3838	Private	4/1/2020	BIORETENTION/STORMWATER PLANTER	0.0360	0.0000	38.919582	-77.18326	FY21	6914 Southridge Dr.	McLean, VA 22101	NO	PL24	Pimmit Run	VAN-A12R_PIM02B06	Yes	Yes
BR0832	S3842	Private	4/6/2020	BIORETENTION	0.0800	0.0000	38.903709	-77.181767	FY21	2120 Great Falls St.	Falls Church, VA 22043	YES	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
BR0833	S3757	Private	4/9/2020	BIORETENTION	0.3200	0.0000	38.77958	-77.136395	FY21	opposite 6331 Still Spring Pl,	Alexandria, VA 22315	NO	PL27	Dogue Creek	VAN-A14R_ZZZ27A00	No	No
BR0834	S3619	Private	4/8/2020	BIORETENTION	0.0600	0.0000	38.899521	-77.218342	FY21	7910 Oak St.	Dunn Loring, VA 22027	YES	PL26	Holmes Run	VAN-A13R_HOR01B00	Yes	No
BR0835	S3619	Private	4/8/2020	BIORETENTION	0.0600	0.0000	38.899543	-77.218501	FY21	2235 Sandburg St.	Dunn Loring, VA 22027	YES	PL26	Holmes Run	VAN-A13R_HOR01B00	Yes	No
BR0836	S3619	Private	4/8/2020	BIORETENTION	0.0500	0.0000	38.899659	-77.218325	FY21	2231 Sandburg St.	Dunn Loring, VA 22027	YES	PL26	Holmes Run	VAN-A13R_HOR01B00	Yes	No
BR0837	S0109	Private	4/9/2020	BIORETENTION	0.2500	0.0800	38.79835	-77.095023	FY21	3700 Burgundy Rd.	Alexandria, VA 22303	YES	PL26	Cameron Run/Hunting Creek	VAN-A13R_CAM01A04	No	Yes

Facility ID	Site ID	Maintained By	Date Installed	BMP Name	Impervious Acres Treated (ac)	Pervious Acres Treated (ac)	Latitude	Longitude	Inspection Date/Year	Facility Address	Facility City/State/Zip	PMA	HUC6	Receiving Water Name	Receiving Water ID	Receiving Water Impaired	Facility Discharges to Fairfax County's MS4?
BR0838	S3591	Private	4/9/2020	BIORETENTION	0.0300	0.2100	38.768528	-77.083079	FY21	6850 Richmond Hy.	Alexandria, VA 22306	YES	PL28	Paul Springs Branch	VAN-A14R_PAU01A04	Yes	Yes
BR0839	S3844	Private	4/6/2020	BIORETENTION	0.1000	0.1600	38.898694	-77.477786	FY21	4501 Pleasant Valley Rd.	Chantilly, VA 20151	YES	PL45	Cub Run	VAN-A22R_CUB02A02	Yes	Yes
BR0840	S3845	Private	4/7/2020	BIORETENTION/STORMWATER PLANTER	0.0240	0.0000	38.91439	-77.158038	FY21	1849 Macarthur Dr.	McLean, VA 22101	YES	PL24	Little Pimmit Run	VAN-A12R_LIO01A10	Yes	Yes
BR0841	S3846	Private	4/7/2020	BIORETENTION/STORMWATER PLANTER	0.0110	0.0000	38.902617	-77.19905	FY21	7316 Reddfield Ct.	Falls Church, VA 22043	YES	PL24	Pimmit Run	VAN-A12R_PIM02B06	Yes	No
BR0842	S3846	Private	4/7/2020	BIORETENTION/STORMWATER PLANTER	0.0120	0.0000	38.902608	-77.198886	FY21	7316 Reddfield Ct.	Falls Church, VA 22043	YES	PL24	Pimmit Run	VAN-A12R_PIM02B06	Yes	No
BR0843	S3846	Private	4/7/2020	BIORETENTION/STORMWATER PLANTER	0.0140	0.0000	38.902571	-77.19889	FY21	7316 Reddfield Ct.	Falls Church, VA 22043	YES	PL24	Pimmit Run	VAN-A12R_PIM02B06	Yes	No
BR0844	S3849	Private	5/6/2020	BIORETENTION	0.0500	0.0000	38.8475	-77.212815	FY21	7803 Ridgewood Dr.	Annandale, VA 22003	YES	PL30	Accotink Creek	VAN-A15R_ACO02A00	Yes	Yes
BR0846	S3854	Private	5/20/2020	BIORETENTION/STORMWATER PLANTER	0.0160	0.0000	38.919128	-77.142858	FY21	6034 Corland Ct.	McLean, VA 22101	YES	PL24	Little Pimmit Run	VAN-A12R_LIO01A10	Yes	Yes
BR0847	S3854	Private	5/20/2020	BIORETENTION/STORMWATER PLANTER	0.0370	0.0000	38.919292	-77.142781	FY21	6034 Corland Ct.	McLean, VA 22101	YES	PL24	Little Pimmit Run	VAN-A12R_LIO01A10	Yes	Yes
BR0848	S3855	Private	5/20/2020	BIORETENTION/STORMWATER PLANTER	0.0600	0.0000	38.922963	-77.179617	FY21	6812 Broyhill St.	McLean, VA 22101	YES	PL24	Pimmit Run	VAN-A12R_PIM02B06	Yes	Yes
BR0849	S3856	Private	5/20/2020	BIORETENTION	0.0200	0.0000	38.827097	-77.382303	FY21	12601 Braddock Rd.	Fairfax, VA 22030	YES	PL46	Lower Bull Run	VAN-A23R_ZZZ46A00	No	Yes
BR0850	S3856	Private	5/20/2020	BIORETENTION	0.1900	0.0000	38.825672	-77.382017	FY21	12601 Braddock Rd.	Fairfax, VA 22030	YES	PL46	Lower Bull Run	VAN-A23R_ZZZ46A00	No	No
BR0851	S3858	Private	5/21/2020	BIORETENTION	0.0300	0.0000	38.899613	-77.172741	FY21	2222 Tulip Dr.	Falls Church, VA 22046	YES	PL25	Four Mile Run	VAN-A12R_FOU01A00	Yes	Yes
BR0852	S3860	Private	5/21/2020	BIORETENTION	0.0500	0.0000	38.9064	-77.170951	FY21	6609 Quinten St.	Falls Church, VA 22043	YES	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
BR0853	S3863	Private	5/26/2020	BIORETENTION/STORMWATER PLANTER	0.0600	0.0000	38.914773	-77.173984	FY21	6639 Kirkley Av.	McLean, VA 22101	YES	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
BR0854	S3867	Private	5/27/2020	BIORETENTION	0.0900	0.0000	38.820719	-77.316053	FY21	4930 Princess Anne Ct.	Fairfax, VA 22032	YES	PL29	Pohick Creek	VAN-A16R_ZZZ29A00	No	Yes
BR0855	S3868	Private	5/29/2020	BIORETENTION/STORMWATER PLANTER	0.0160	0.0000	38.886713	-77.199198	FY21	2528 Buckelew Dr.	Falls Church, VA 22046	YES	PL26	Cameron Run	VAN-A13R_ZZZ26A00	No	Yes
BR0856	S3868	Private	5/29/2020	BIORETENTION/STORMWATER PLANTER	0.0090	0.0000	38.88677	-77.199333	FY21	2528 Buckelew Dr.	Falls Church, VA 22046	YES	PL26	Tripps Run	VAN-A13R_TRI01A00	Yes	Yes
BR0857	S3868	Private	5/29/2020	BIORETENTION/STORMWATER PLANTER	0.0090	0.0000	38.886831	-77.199366	FY21	2528 Buckelew Dr.	Falls Church, VA 22046	YES	PL26	Tripps Run	VAN-A13R_TRI01A00	Yes	Yes
BR0858	S3868	Private	5/29/2020	BIORETENTION/STORMWATER PLANTER	0.0120	0.0000	38.886884	-77.199186	FY21	2528 Buckelew Dr.	Falls Church, VA 22046	YES	PL26	Tripps Run	VAN-A13R_TRI01A00	Yes	Yes
BR0859	S3868	Private	5/29/2020	BIORETENTION/STORMWATER PLANTER	0.0120	0.0000	38.886828	-77.199156	FY21	2528 Buckelew Dr.	Falls Church, VA 22046	YES	PL26	Tripps Run	VAN-A13R_TRI01A00	Yes	Yes
BR0861	S0752	Private	6/24/2020	BIORETENTION/STORMWATER PLANTER	0.0500	0.0000	38.93045	-77.240877	FY21	1521 Boyd Pointe Wy.	Vienna, VA 22182	YES	PL22	Rocky Run	VAN-A11R_ROE01A08	No	No
BR0862	S0752	Private	6/24/2020	BIORETENTION/TREE PIT	0.0400	0.0000	38.930284	-77.241114	FY21	8590 Leesburg Pi.	Vienna, VA 22182	YES	PL22	Rocky Run	VAN-A11R_ROE01A08	No	No
BR0863	S0752	Private	6/24/2020	BIORETENTION/TREE PIT	0.0400	0.0000	38.93037	-77.241199	FY21	8590 Leesburg Pi.	Vienna, VA 22182	YES	PL22	Rocky Run	VAN-A11R_ROE01A08	No	No
BR0864	S0752	Private	6/24/2020	BIORETENTION/TREE PIT	0.3900	0.0000	38.930466	-77.241292	FY21	8590 Leesburg Pi.	Vienna, VA 22182	YES	PL22	Rocky Run	VAN-A11R_ROE01A08	No	No
BR0865	S0752	Private	6/24/2020	BIORETENTION/TREE PIT	0.9300	0.0000	38.930419	-77.241846	FY21	8590 Leesburg Pi.	Vienna, VA 22182	YES	PL22	Rocky Run	VAN-A11R_ROE01A08	No	No
BR0866	S0752	Private	6/24/2020	BIORETENTION/TREE PIT	0.0500	0.0000	38.930367	-77.240972	FY21	8590 Leesburg Pi.	Vienna, VA 22182	YES	PL22	Rocky Run	VAN-A11R_ROE01A08	No	No
BR0867	S0752	Private	6/24/2020	BIORETENTION/TREE PIT	0.0400	0.0000	38.930457	-77.241059	FY21	1521 Boyd Pointe Wy.	Vienna, VA 22182	YES	PL22	Rocky Run	VAN-A11R_ROE01A08	No	No
BR0868	S0752	Private	6/24/2020	BIORETENTION/TREE PIT	0.0400	0.0000	38.930548	-77.241148	FY21	1521 Boyd Pointe Wy.	Vienna, VA 22182	YES	PL22	Rocky Run	VAN-A11R_ROE01A08	No	No
BR0869	S0752	Private	6/24/2020	BIORETENTION/TREE PIT	0.0300	0.0000	38.930658	-77.241258	FY21	1521 Boyd Pointe Wy.	Vienna, VA 22182	YES	PL22	Rocky Run	VAN-A11R_ROE01A08	No	No
BR0870	S0752	Private	6/24/2020	BIORETENTION/TREE PIT	0.0600	0.0000	38.930798	-77.241226	FY21	1521 Boyd Pointe Wy.	Vienna, VA 22182	YES	PL22	Rocky Run	VAN-A11R_ROE01A08	No	No
BR0871	S0752	Private	6/24/2020	BIORETENTION/TREE PIT	0.0500	0.0000	38.930865	-77.241119	FY21	1521 Boyd Pointe Wy.	Vienna, VA 22182	YES	PL22	Rocky Run	VAN-A11R_ROE01A08	No	No
BR0872	S0752	Private	6/24/2020	BIORETENTION/TREE PIT	0.0300	0.0000	38.930933	-77.241008	FY21	1521 Boyd Pointe Wy.	Vienna, VA 22182	YES	PL22	Rocky Run	VAN-A11R_ROE01A08	No	No
BR0873	S0752	Private	6/24/2020	BIORETENTION/TREE PIT	0.0600	0.0000	38.931031	-77.240843	FY21	1521 Boyd Pointe Wy.	Vienna, VA 22182	YES	PL22	Rocky Run	VAN-A11R_ROE01A08	No	No
BR0874	S0752	Private	6/24/2020	BIORETENTION/TREE PIT	0.0700	0.0000	38.931114	-77.240696	FY21	1521 Boyd Pointe Wy.	Vienna, VA 22182	YES	PL22	Rocky Run	VAN-A11R_ROE01A08	No	No
BR0875	S0752	Private	6/24/2020	BIORETENTION/TREE PIT	0.0600	0.0000	38.931176	-77.240553	FY21	1521 Boyd Pointe Wy.	Vienna, VA 22182	YES	PL22	Rocky Run	VAN-A11R_ROE01A08	No	No
BR0876	S0752	Private	6/24/2020	BIORETENTION/TREE PIT	0.0600	0.0000	38.931218	-77.240429	FY21	1521 Boyd Pointe Wy.	Vienna, VA 22182	YES	PL22	Rocky Run	VAN-A11R_ROE01A08	No	No
BR0877	S3873	Private	6/25/2020	BIORETENTION	0.1700	0.0600	38.87369	-77.272337	FY21	near the intersection of Vaden Dr. & Royal Victoria Dr.	Fairfax, VA 22031	YES	PL30	Unnamed tributary to Accotink Creek	VAN-A15R_XKY01A06	No	No
BR0878	S3874	Private	6/25/2020	BIORETENTION	0.2000	0.2500	38.870912	-77.269225	FY21	behind 9657 Pullman Pl.	Fairfax, VA 22031	YES	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	Yes
BR0879	S3874	Private	6/25/2020	BIORETENTION	0.0500	0.1900	38.870704	-77.269437	FY21	behind 9657 Pullman Pl.	Fairfax, VA 22031	YES	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	Yes
BR0880	S3874	Private	6/25/2020	BIORETENTION	0.1700	0.0900	38.871559	-77.269562	FY21	Chesham St.: near 3081 Waterloo Ln.	Fairfax, VA 22031	YES	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	Yes
BR0881	S3874	Private	6/25/2020	BIORETENTION	0.1200	0.1400	38.872273	-77.26973	FY21	Chesham St.: behind 9601 Stockwell Ln.	Fairfax, VA 22031	YES	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	Yes
BR0882	S3874	Private	6/25/2020	BIORETENTION	0.3400	0.5500	38.87366	-77.270358	FY21	behind 9523 Canonbury Sq.	Fairfax, VA 22031	YES	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	Yes
BR0883	S3874	Private	6/25/2020	BIORETENTION	0.1800	0.2200	38.873545	-77.270806	FY21	behind 9421 Canonbury Sq.	Fairfax, VA 22031	YES	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	Yes
BR0884	S3874	Private	6/25/2020	BIORETENTION	0.2700	0.1200	38.873932	-77.271233	FY21	adjacent to 9430 Canonbury Sq.	Fairfax, VA 22031	YES	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	Yes
BR0885	S3875	Private	6/26/2020	BIORETENTION	0.2300	0.0000	38.873577	-77.274114	FY21	adjacent to 3002 Rittenhouse Ci. (rear)	Fairfax, VA 22031	YES	PL30	Unnamed tributary to Accotink Creek	VAN-A15R_XKY01A06	No	No
BR0893	S3622	Private	5/27/2020	BIORETENTION/TREE PIT	0.0460	0.0000	38.924987	-77.219043	4/21/2020	7903 Westpark Dr.	McLean, VA 22102-4201	YES	PL23	Potomac River/Nichols Run/Scott Run	VAN-A11R_ZZZ23A00	No	Yes
CS0007	S3620	Private	8/6/2019	RAINWATER HARVESTING	0.8000	0.0000	38.927867	-77.238103	5/12/2020	near 8421 Broad St.	McLean, VA 22102	YES	PL22	Rocky Run	VAN-A11R_ROE01A08	No	No
CS0008	S0752	Private	6/24/2020	RAINWATER HARVESTING	0.3100	0.2500	38.930737	-77.241203	FY21	1521 Boyd Pointe Wy.	Vienna, VA 22182	YES	PL22	Rocky Run	VAN-A11R_ROE01A08	No	No
DP0743	S3651	Private	9/6/2019	EXTENDED DETENTION DRY POND	3.3000	2.0000	38.847788	-77.335773	5/5/2020	4205 Members Wy.	Fairfax, VA 22030	YES	PL46	Lower Bull Run	VAN-A23R_ZZZ46A00	No	No
DP0744	S3572	Private	2/18/2020	EXTENDED DETENTION DRY POND	0.5900	1.6400	38.92174	-77.154408	4/28/2020	1728 Kirby Rd.	McLean, VA 22101	YES	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
DP0746	S3791	Private	4/2/2020	EXTENDED DETENTION DRY POND	2.9100	1.1400	38.706252	-77.205274	FY21	9372 Richmond Hy.	Lorton, VA 22079	YES	PL29	Pohick Creek	VAN-A16R_POH01A00	Yes	No
GR0009	S0752	Private	6/24/2020	VEGETATED ROOF	0.0194	0.0000	38.930566	-77.240596	FY21	1521 Boyd Pointe Wy.	Vienna, VA 22182	YES	PL22	Rocky Run	VAN-A11R_ROE01A08	No	No
GR0010	S0752	Private	6/24/2020	VEGETATED ROOF	0.0016	0.0000	38.930513	-77.240592	FY21	1521 Boyd Pointe Wy.	Vienna, VA 22182	YES	PL22	Rocky Run	VAN-A11R_ROE01A08	No	No
GR0011	S0752	Private	6/24/2020	VEGETATED ROOF	0.0002	0.0000	38.930472	-77.240552	FY21	1521 Boyd Pointe Wy.	Vienna, VA 22182	YES	PL22	Rocky Run	VAN-A11R_ROE01A08	No	No

Facility ID	Site ID	Maintained By	Date Installed	BMP Name	Impervious Acres Treated (ac)	Pervious Acres Treated (ac)	Latitude	Longitude	Inspection Date/Year	Facility Address	Facility City/State/Zip	PMA	HUC6	Receiving Water Name	Receiving Water ID	Receiving Water Impaired	Facility Discharges to Fairfax County's MS4?
GR0012	S0752	Private	6/24/2020	VEGETATED ROOF	0.0296	0.0000	38.930354	-77.240855	FY21	1521 Boyd Pointe Wy.	Vienna, VA 22182	YES	PL22	Rocky Run	VAN-A11R_ROE01A08	No	No
GR0013	S0752	Private	6/24/2020	VEGETATED ROOF	0.0042	0.0000	38.930605	-77.241135	FY21	1521 Boyd Pointe Wy.	Vienna, VA 22182	YES	PL22	Rocky Run	VAN-A11R_ROE01A08	No	No
GR0014	S0752	Private	6/24/2020	VEGETATED ROOF	0.0132	0.0000	38.930764	-77.241053	FY21	1521 Boyd Pointe Wy.	Vienna, VA 22182	YES	PL22	Rocky Run	VAN-A11R_ROE01A08	No	No
GR0015	S0752	Private	6/24/2020	VEGETATED ROOF	0.0033	0.0000	38.930811	-77.240959	FY21	1521 Boyd Pointe Wy.	Vienna, VA 22182	YES	PL22	Rocky Run	VAN-A11R_ROE01A08	No	No
GR0016	S0752	Private	6/24/2020	VEGETATED ROOF	0.00044	0.0000	38.9308	-77.240874	FY21	1521 Boyd Pointe Wy.	Vienna, VA 22182	YES	PL22	Rocky Run	VAN-A11R_ROE01A08	No	No
GR0017	S0752	Private	6/24/2020	VEGETATED ROOF	0.0003	0.0000	38.930745	-77.240825	FY21	1521 Boyd Pointe Wy.	Vienna, VA 22182	YES	PL22	Rocky Run	VAN-A11R_ROE01A08	No	No
GR0018	S0752	Private	6/24/2020	VEGETATED ROOF	0.0024	0.0000	38.930724	-77.24086	FY21	1521 Boyd Pointe Wy.	Vienna, VA 22182	YES	PL22	Rocky Run	VAN-A11R_ROE01A08	No	No
GR0019	S0752	Private	6/24/2020	VEGETATED ROOF	0.0014	0.0000	38.930675	-77.240808	FY21	1521 Boyd Pointe Wy.	Vienna, VA 22182	YES	PL22	Rocky Run	VAN-A11R_ROE01A08	No	No
GR0020	S0752	Private	6/24/2020	VEGETATED ROOF	0.0003	0.0000	38.9307	-77.240738	FY21	1521 Boyd Pointe Wy.	Vienna, VA 22182	YES	PL22	Rocky Run	VAN-A11R_ROE01A08	No	No
GR0021	S0752	Private	6/24/2020	VEGETATED ROOF	0.0006	0.0000	38.93048	-77.240728	FY21	1521 Boyd Pointe Wy.	Vienna, VA 22182	YES	PL22	Rocky Run	VAN-A11R_ROE01A08	No	No
GR0022	S0752	Private	6/24/2020	VEGETATED ROOF	0.0015	0.0000	38.930471	-77.240753	FY21	1521 Boyd Pointe Wy.	Vienna, VA 22182	YES	PL22	Rocky Run	VAN-A11R_ROE01A08	No	No
GR0023	S0752	Private	6/24/2020	VEGETATED ROOF	0.0006	0.0000	38.930418	-77.240689	FY21	1521 Boyd Pointe Wy.	Vienna, VA 22182	YES	PL22	Rocky Run	VAN-A11R_ROE01A08	No	No
GR0024	S0752	Private	6/24/2020	VEGETATED ROOF	0.0002	0.0000	38.930406	-77.240701	FY21	1521 Boyd Pointe Wy.	Vienna, VA 22182	YES	PL22	Rocky Run	VAN-A11R_ROE01A08	No	No
GR0025	S0752	Private	6/24/2020	VEGETATED ROOF	0.0016	0.0000	38.93038	-77.240769	FY21	1521 Boyd Pointe Wy.	Vienna, VA 22182	YES	PL22	Rocky Run	VAN-A11R_ROE01A08	No	No
GR0026	S0752	Private	6/24/2020	VEGETATED ROOF	0.0014	0.0000	38.930423	-77.240822	FY21	1521 Boyd Pointe Wy.	Vienna, VA 22182	YES	PL22	Rocky Run	VAN-A11R_ROE01A08	No	No
GR0027	S0752	Private	6/24/2020	VEGETATED ROOF	0.0014	0.0000	38.930555	-77.241027	FY21	1521 Boyd Pointe Wy.	Vienna, VA 22182	YES	PL22	Rocky Run	VAN-A11R_ROE01A08	No	No
GR0028	S0752	Private	6/24/2020	VEGETATED ROOF	0.0024	0.0000	38.93062	-77.241088	FY21	1521 Boyd Pointe Wy.	Vienna, VA 22182	YES	PL22	Rocky Run	VAN-A11R_ROE01A08	No	No
GR0029	S0752	Private	6/24/2020	VEGETATED ROOF	0.0013	0.0000	38.930677	-77.241144	FY21	1521 Boyd Pointe Wy.	Vienna, VA 22182	YES	PL22	Rocky Run	VAN-A11R_ROE01A08	No	No
GR0030	S0752	Private	6/24/2020	VEGETATED ROOF	0.0013	0.0000	38.93073	-77.24108	FY21	1521 Boyd Pointe Wy.	Vienna, VA 22182	YES	PL22	Rocky Run	VAN-A11R_ROE01A08	No	No
GR0031	S0752	Private	6/24/2020	VEGETATED ROOF	0.1090	0.0000	38.930695	-77.241084	FY21	1521 Boyd Pointe Wy.	Vienna, VA 22182	YES	PL22	Rocky Run	VAN-A11R_ROE01A08	No	No
MB0305	S1467	Private	2/19/2020	MANUFACTURED BMP (PROPRIETARY)/STORMFILTER	0.1200	0.0300	38.920808	-77.152003	4/27/2020	6256 Old Dominion Dr.	McLean, VA 22101-4217	YES	PL24	Little Pimmit Run	VAN-A12R_LIO01A10	Yes	Yes
MB0307	S3794	Private	3/23/2020	MANUFACTURED BMP (PROPRIETARY)/STORMFILTER	1.3000	0.4000	38.870914	-77.174334	FY21	2923 Annandale Rd.	Falls Church, VA 22042	YES	PL26	Tripps Run	VAN-A13R_TRI01A00	Yes	No
MB0308	S3794	Private	3/23/2020	MANUFACTURED BMP (PROPRIETARY)/STORMFILTER	0.4600	0.0200	38.871103	-77.173557	FY21	2923 Annandale Rd.	Falls Church, VA 22042	YES	PL26	Tripps Run	VAN-A13R_TRI01A00	Yes	No
MB0309	S3795	Private	3/23/2020	MANUFACTURED BMP (PROPRIETARY)/BAYFILTER	2.1000	0.4500	38.805702	-77.214476	FY21	5325 Port Royal Rd.	Springfield, VA 22151	YES	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	No
MB0310	S0063	Private	3/25/2020	MANUFACTURED BMP (PROPRIETARY)/MODULAR WETLAND SYSTEM	0.1600	0.1800	38.937142	-77.180094	FY21	near 6862 Elm St.	McLean, VA 22101	YES	PL23	Dead Run	VAN-A11R_DEA01A04	Yes	Yes
MB0311	S3121	Private	2/6/2020	MANUFACTURED BMP (PROPRIETARY)/JELLYFISH FILTER	0.4400	0.0000	38.676898	-77.239969	FY21	10377 Mordor Dr.	Lorton, VA 22079	YES	PL48	Occoquan River/Belmont Bay	VAN-A25R_ZZZ48A00	No	No
MB0312	S1560	Private	3/31/2020	MANUFACTURED BMP (PROPRIETARY)/STORMTECH	0.8500	0.0000	38.937382	-77.280851	FY21	9750 Meadowlark Gardens Ct.	Vienna, VA 22182	YES	PL22	Difficult Run	VAN-A11R_ZZZ22A00	No	No
MB0313	S3591	Private	4/9/2020	MANUFACTURED BMP (PROPRIETARY)/STORMFILTER	3.1400	0.0700	38.769022	-77.083067	FY21	6850 Richmond Hy.	Alexandria, VA 22306	YES	PL28	Paul Springs Branch	VAN-A14R_PAU01A04	Yes	Yes
MB0314	S3591	Private	4/9/2020	MANUFACTURED BMP (PROPRIETARY)	0.2400	0.2000	38.769076	-77.083781	FY21	6850 Richmond Hy.	Alexandria, VA 22306	YES	PL28	Paul Springs Branch	VAN-A14R_PAU01A04	Yes	Yes
MB0315	S3513	Private	4/9/2020	MANUFACTURED BMP (PROPRIETARY)/STORMFILTER	0.1500	0.1000	38.822798	-77.162506	FY21	6566 Little River Tp.	Alexandria, VA 22312	YES	PL26	Cameron Run	VAN-A13R_ZZZ26A00	No	Yes
MB0316	S3843	Private	4/6/2020	MANUFACTURED BMP (PROPRIETARY)/STORMFILTER	6.6500	0.0000	38.796867	-77.182464	FY21	6805 S Industrial Rd.	Springfield, VA 22151	YES	PL26	Backlick Run	VAN-A13R_BAL01A00	Yes	No
MB0317	S2026	Private	4/14/2020	MANUFACTURED BMP (PROPRIETARY)/STORMFILTER	0.6000	0.0650	38.93246	-77.243138	FY21	8610 Leesburg Pi.	Vienna, VA 22182	YES	PL22	Rocky Run	VAN-A11R_ROE01A08	No	No
MB0318	S3749	Private	4/14/2020	MANUFACTURED BMP (PROPRIETARY)/CDS	4.0900	4.0800	38.989448	-77.275636	FY21	between 9599 and 9601 Perkins Farm Ln.	Great Falls, VA 22066	YES	PL22	Captain Hickory Run	VAN-A11R_CAH01A04	Yes	No
MB0319	S1503	Private	4/14/2020	MANUFACTURED BMP (PROPRIETARY)/STORMFILTER	1.5500	0.3200	38.963026	-77.364121	FY21	1850 Town Center Dr.	Reston, VA 20190	YES	PL21	Sugarland Run	VAN-A10R_SUG02A02	Yes	No
PP0038	S3612	Private	1/3/2020	PERMEABLE PAVEMENT	0.0800	0.0000	38.881271	-77.231946	6/8/2020	2662 Avenir Pl.	Vienna, VA 22180	YES	PL30	Long Branch	VAN-A15R_LOB01A02	No	No
PP0060	S3789	Private	3/20/2020	PERMEABLE PAVEMENT	0.0600	0.0000	38.774097	-77.184342	FY21	6620 Backlick Rd.	Springfield, VA 22150	YES	PL30	Calamo Branch	VAN-A15R_CAL01A02	No	Yes
PP0067	S0063	Private	3/25/2020	PERMEABLE PAVEMENT	0.0230	0.0000	38.937767	-77.181242	FY21	near 6862 Elm St.	McLean, VA 22101	YES	PL23	Dead Run	VAN-A11R_DEA01A04	Yes	Yes
PP0068	S0063	Private	4/27/2020	PERMEABLE PAVEMENT	0.0520	0.0000	38.93755	-77.180934	FY21	near 6862 Elm St.	McLean, VA 22101	YES	PL23	Dead Run	VAN-A11R_DEA01A04	Yes	Yes
PP0069	S0063	Private	3/25/2020	PERMEABLE PAVEMENT	0.0630	0.0000	38.937246	-77.1805	FY21	near 6862 Elm St.	McLean, VA 22101	YES	PL23	Dead Run	VAN-A11R_DEA01A04	Yes	Yes
PP0070	S0063	Private	3/25/2020	PERMEABLE PAVEMENT	0.0350	0.0000	38.937191	-77.180213	FY21	near 6862 Elm St.	McLean, VA 22101	YES	PL23	Dead Run	VAN-A11R_DEA01A04	Yes	Yes
PP0071	S0063	Private	3/25/2020	PERMEABLE PAVEMENT	0.0350	0.0000	38.93731	-77.180078	FY21	near 6862 Elm St.	McLean, VA 22101	YES	PL23	Dead Run	VAN-A11R_DEA01A04	Yes	Yes
PP0072	S0063	Private	3/25/2020	PERMEABLE PAVEMENT	0.0310	0.0000	38.937447	-77.179922	FY21	near 6862 Elm St.	McLean, VA 22101	YES	PL23	Dead Run	VAN-A11R_DEA01A04	Yes	Yes
PP0073	S1320	Private	4/10/2020	PERMEABLE PAVEMENT	1.8500	0.0000	38.908297	-77.21899	FY21	7980 Science Applications Ct.	Vienna, VA 22182	YES	PL24	Pimmit Run	VAN-A12R_PIM02B06	Yes	No
PP0075	S3873	Private	6/25/2020	PERMEABLE PAVEMENT	0.5000	0.0600	38.875162	-77.272313	FY21	Sprague Av.	Fairfax, VA 22031	YES	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	Yes
PP0076	S3873	Private	6/25/2020	PERMEABLE PAVEMENT	0.2900	0.0300	38.87525	-77.271724	FY21	Sprague Av.	Fairfax, VA 22031	YES	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	Yes
PP0077	S3873	Private	6/25/2020	PERMEABLE PAVEMENT	0.2400	0.0300	38.875323	-77.271197	FY21	Sprague Av.	Fairfax, VA 22031	YES	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	Yes
PP0078	S3873	Private	6/25/2020	PERMEABLE PAVEMENT	0.5500	0.0600	38.875422	-77.27049	FY21	Sprague Av.	Fairfax, VA 22031	YES	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	Yes
PP0079	S3873	Private	6/25/2020	PERMEABLE PAVEMENT	0.4100	0.0500	38.875342	-77.270518	FY21	Sprague Av.	Fairfax, VA 22031	YES	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	Yes
PP0080	S3873	Private	6/25/2020	PERMEABLE PAVEMENT	0.4700	0.0500	38.87514	-77.271979	FY21	Sprague Av.	Fairfax, VA 22031	YES	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	Yes
PP0081	S3874	Private	6/25/2020	PERMEABLE PAVEMENT	0.0700	0.0600	38.872091	-77.269577	FY21	Chesham St.	Fairfax, VA 22031	YES	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	Yes
PP0082	S3874	Private	6/25/2020	PERMEABLE PAVEMENT	0.3200	0.0300	38.873437	-77.269738	FY21	opposite 2937 Chesham St.	Fairfax, VA 22031	YES	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	Yes
PP0083	S3874	Private	6/25/2020	PERMEABLE PAVEMENT	0.1400	0.0200	38.874137	-77.270223	FY21	Bastille St.: behind 9550 Canonbury Sq.	Fairfax, VA 22031	YES	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	Yes
PP0084	S3875	Private	6/26/2020	PERMEABLE PAVEMENT	0.3700	0.2700	38.874074	-77.273537	FY21	Bastille St.: adjacent to UG0774	Fairfax, VA 22031	YES	PL30	Unnamed tributary to Accotink Creek	VAN-A15R_XKY01A06	No	No
RF0050	S0892	Private	5/27/2020	REFORESTATION	0.0000	0.1800	38.829436	-77.35683	FY21	11829 Braddock Rd.	Fairfax, VA 22030	YES	PL46	Lower Bull Run	VAN-A23R_ZZZ46A00	No	No
SF0279	S3736	Private	4/7/2020	FILTERING PRACTICE/D.C. SAND FILTER	2.3000	0.3500	38.819383	-77.44643	FY21	6600 Old Centreville Rd.	Centreville, VA 20121	YES	PL46	Lower Bull Run	VAN-A23R_ZZZ46A00	No	No

Facility ID	Site ID	Maintained By	Date Installed	BMP Name	Impervious Acres Treated (ac)	Pervious Acres Treated (ac)	Latitude	Longitude	Inspection Date/Year	Facility Address	Facility City/State/Zip	PMA	HUC6	Receiving Water Name	Receiving Water ID	Receiving Water Impaired	Facility Discharges to Fairfax County's MS4?
TF0512	S1467	Private	2/19/2020	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.1300	0.0100	38.921007	-77.152088	4/27/2020	6256 Old Dominion Dr.	McLean, VA 22101-4217	YES	PL24	Little Pimmit Run	VAN-A12R_LIO01A10	Yes	Yes
TF0516	S3788	Private	3/18/2020	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.1100	0.0100	38.938268	-77.182102	FY21	6890 Elm St.	McLean, VA 22101	YES	PL23	Dead Run	VAN-A11R_DEA01A04	Yes	Yes
TF0517	S3788	Private	3/18/2020	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.0600	0.0100	38.93821	-77.182123	FY21	6890 Elm St.	McLean, VA 22101	YES	PL23	Dead Run	VAN-A11R_DEA01A04	Yes	Yes
TF0518	S3788	Private	3/18/2020	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.0800	0.0000	38.937924	-77.182369	FY21	6890 Elm St.	McLean, VA 22101	YES	PL23	Dead Run	VAN-A11R_DEA01A04	Yes	Yes
TF0519	S3790	Private	4/2/2020	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.2400	0.0500	38.829987	-77.190246	FY21	7100 Little River Tp.	Annandale, VA 22003	YES	PL26	Indian Run	VAN-A13R_INA01A06	Yes	No
TF0525	S0371	Private	2/19/2020	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.0500	0.0000	38.852486	-77.133675	4/2/2020	5871 Leesburg Pi.	Falls Church, VA 22041	YES	PL26	Cameron Run	VAN-A13R_ZZZ26A00	No	No
TF0526	S0371	Private	2/19/2020	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.0500	0.0300	38.85246	-77.13397	4/2/2020	5871 Leesburg Pi.	Falls Church, VA 22041	YES	PL26	Cameron Run	VAN-A13R_ZZZ26A00	No	No
TF0527	S0371	Private	2/19/2020	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.0500	0.0000	38.852161	-77.133942	4/2/2020	5871 Leesburg Pi.	Falls Church, VA 22041	YES	PL26	Cameron Run	VAN-A13R_ZZZ26A00	No	No
TF0528	S0371	Private	2/19/2020	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.0700	0.0000	38.852041	-77.133372	4/2/2020	5871 Leesburg Pi.	Falls Church, VA 22041	YES	PL26	Cameron Run	VAN-A13R_ZZZ26A00	No	No
TF0529	S0371	Private	2/19/2020	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.0300	0.0000	38.852357	-77.133439	4/2/2020	5871 Leesburg Pi.	Falls Church, VA 22041	YES	PL26	Cameron Run	VAN-A13R_ZZZ26A00	No	No
TF0530	S3736	Private	4/7/2020	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.3400	0.0650	38.820022	-77.446625	FY21	6600 Old Centreville Rd.	Centreville, VA 20121	YES	PL46	Lower Bull Run	VAN-A23R_ZZZ46A00	No	No
TF0531	S3736	Private	4/7/2020	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.3400	0.0650	38.819759	-77.446914	FY21	6600 Old Centreville Rd.	Centreville, VA 20121	YES	PL46	Lower Bull Run	VAN-A23R_ZZZ46A00	No	No
TF0532	S3736	Private	4/7/2020	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.3400	0.0650	38.819467	-77.447164	FY21	6600 Old Centreville Rd.	Centreville, VA 20121	YES	PL46	Lower Bull Run	VAN-A23R_ZZZ46A00	No	No
TF0533	S3736	Private	4/7/2020	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.3400	0.0650	38.819271	-77.447351	FY21	6600 Old Centreville Rd.	Centreville, VA 20121	YES	PL46	Lower Bull Run	VAN-A23R_ZZZ46A00	No	No
TF0534	S3736	Private	4/7/2020	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.3400	0.0650	38.819085	-77.447181	FY21	6600 Old Centreville Rd.	Centreville, VA 20121	YES	PL46	Lower Bull Run	VAN-A23R_ZZZ46A00	No	No
TF0535	S3736	Private	4/7/2020	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.3400	0.0650	38.819407	-77.445112	FY21	6600 Old Centreville Rd.	Centreville, VA 20121	YES	PL46	Lower Bull Run	VAN-A23R_ZZZ46A00	No	No
TF0536	S1473	Private	6/8/2020	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.2500	0.0900	38.895531	-77.235709	FY21	2371 Cedar Ln.	Vienna, VA 22182	YES	PL30	Long Branch	VAN-A15R_LOB01A02	No	Yes
TF0537	S3873	Private	6/25/2020	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.2900	0.0300	38.873765	-77.271858	FY21	Royal Victoria Dr.	Fairfax, VA 22031	YES	PL30	Unnamed tributary to Accotink Creek	VAN-A15R_XKY01A06	No	No
TF0538	S3873	Private	6/25/2020	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.2300	0.0300	38.874127	-77.271742	FY21	Royal Victoria Dr.	Fairfax, VA 22031	YES	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	No
TF0539	S3873	Private	6/25/2020	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.3200	0.0300	38.8742	-77.271221	FY21	Royal Victoria Dr.	Fairfax, VA 22031	YES	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	Yes
TF0540	S3873	Private	6/25/2020	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.3600	0.0400	38.874348	-77.271663	FY21	near the intersection of Bastille St. & Royal Victoria Dr.	Fairfax, VA 22031	YES	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	Yes
TF0541	S3873	Private	6/25/2020	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.3300	0.0400	38.874976	-77.271433	FY21	Royal Victoria Dr.	Fairfax, VA 22031	YES	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	Yes
TF0542	S3873	Private	6/25/2020	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.4000	0.0400	38.874318	-77.269898	FY21	Bleeker St.	Fairfax, VA 22031	YES	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	Yes
TF0543	S3873	Private	6/25/2020	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.3200	0.0400	38.87474	-77.269937	FY21	Bleeker St.	Fairfax, VA 22031	YES	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	Yes
TF0544	S3873	Private	6/25/2020	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.4300	0.0500	38.874906	-77.269954	FY21	Bleeker St.	Fairfax, VA 22031	YES	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	Yes
TF0545	S3873	Private	6/25/2020	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.2800	0.0300	38.875353	-77.269995	FY21	Bleeker St.	Fairfax, VA 22031	YES	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	Yes
TF0546	S3873	Private	6/25/2020	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.2700	0.0300	38.875554	-77.27	FY21	Bleeker St.	Fairfax, VA 22031	YES	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	Yes
TF0547	S3873	Private	6/25/2020	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.2200	0.0200	38.875987	-77.270054	FY21	Bleeker St.	Fairfax, VA 22031	YES	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	Yes
TF0548	S3874	Private	6/25/2020	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.1400	0.0100	38.871506	-77.269115	FY21	Pullman Pl.	Fairfax, VA 22031	YES	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	Yes
TF0549	S3874	Private	6/25/2020	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.4100	0.0500	38.871413	-77.269134	FY21	Pullman Pl.	Fairfax, VA 22031	YES	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	Yes
TF0550	S3874	Private	6/25/2020	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.1700	0.0300	38.871686	-77.269586	FY21	Chesham St.	Fairfax, VA 22031	YES	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	Yes
TF0551	S3874	Private	6/25/2020	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.0300	0.0000	38.872182	-77.270588	FY21	near 3050 Waterloo Ln.	Fairfax, VA 22031	YES	PL30	Unnamed tributary to Accotink Creek	VAN-A15R_XKY01A06	No	No
TF0552	S3874	Private	6/25/2020	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.3200	0.0600	38.872388	-77.269509	FY21	near 2969 Chesham St.	Fairfax, VA 22031	YES	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	Yes
TF0553	S3874	Private	6/25/2020	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.3100	0.0500	38.872967	-77.269579	FY21	near 2953 Chesham St.	Fairfax, VA 22031	YES	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	Yes
TF0554	S3874	Private	6/25/2020	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.2600	0.0500	38.873543	-77.269648	FY21	near 2937 Chesham St.	Fairfax, VA 22031	YES	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	Yes
TF0555	S3874	Private	6/25/2020	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.2600	0.0500	38.874054	-77.26984	FY21	near 9542 Canonbury Sq.	Fairfax, VA 22031	YES	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	Yes
TF0556	S3874	Private	6/25/2020	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.1400	0.0300	38.873842	-77.270714	FY21	near 9421 Canonbury Sq.	Fairfax, VA 22031	YES	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	Yes
TF0557	S3874	Private	6/25/2020	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.0600	0.0200	38.873707	-77.271096	FY21	near 9441 Canonbury Sq.	Fairfax, VA 22031	YES	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	Yes
TF0558	S3874	Private	6/25/2020	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.1000	0.0300	38.873657	-77.271109	FY21	near 9441 Canonbury Sq.	Fairfax, VA 22031	YES	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	Yes
TF0559	S3874	Private	6/25/2020	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.2200	0.0400	38.873192	-77.270931	FY21	near 9461 Canonbury Sq.	Fairfax, VA 22031	YES	PL30	Unnamed tributary to Accotink Creek	VAN-A15R_XKY01A06	No	Yes
TF0560	S3874	Private	6/25/2020	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.2900	0.0500	38.872857	-77.269747	FY21	Dagenham Dr.	Fairfax, VA 22031	YES	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	Yes
TF0561	S3874	Private	6/25/2020	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.4100	0.0700	38.872397	-77.270218	FY21	Prince Regent Pl.	Fairfax, VA 22031	YES	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	Yes
TF0562	S3874	Private	6/25/2020	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.0600	0.0100	38.872841	-77.270502	FY21	near 9475Canonbury Sq.	Fairfax, VA 22031	YES	PL30	Unnamed tributary to Accotink Creek	VAN-A15R_XKY01A06	No	Yes
TF0563	S3874	Private	6/25/2020	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.0700	0.0100	38.87387	-77.270337	FY21	near 9523 Canonbury Sq.	Fairfax, VA 22031	YES	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	Yes
TF0564	S3874	Private	6/25/2020	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.4000	0.0400	38.873998	-77.269862	FY21	near 9542 Canonbury Sq.	Fairfax, VA 22031	YES	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	Yes
TF0565	S3874	Private	6/25/2020	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.1400	0.0200	38.872202	-77.269897	FY21	Prince Regent Pl.	Fairfax, VA 22031	YES	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	No
TF0566	S3874	Private	6/25/2020	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.1500	0.0200	38.872625	-77.270389	FY21	Dagenham Dr.	Fairfax, VA 22031	YES	PL30	Unnamed tributary to Accotink Creek	VAN-A15R_XKY01A06	No	Yes
TF0567	S3874	Private	6/25/2020	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.0900	0.0100	38.872497	-77.270715	FY21	Dagenham Dr.	Fairfax, VA 22031	YES	PL30	Unnamed tributary to Accotink Creek	VAN-A15R_XKY01A06	No	Yes
TF0568	S3874	Private	6/25/2020	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.0600	0.0100	38.873983	-77.270561	FY21	near 9558 Canonbury Sq.	Fairfax, VA 22031	YES	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	Yes
TF0569	S3874	Private	6/25/2020	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.0900	0.0100	38.872783	-77.270278	FY21	Prince Regent Pl.	Fairfax, VA 22031	YES	PL30	Unnamed tributary to Accotink Creek	VAN-A15R_XKY01A06	No	Yes
TF0570	S3874	Private	6/25/2020	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.0800	0.0100	38.872326	-77.270002	FY21	Prince Regent Pl.	Fairfax, VA 22031	YES	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	No
TF0571	S3874	Private	6/25/2020	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.0500	0.0100	38.872534	-77.27014	FY21	Prince Regent Pl.	Fairfax, VA 22031	YES	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	Yes
TF0572	S3874	Private	6/25/2020	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.0900	0.0100	38.874194	-77.270754	FY21	Bastille St.	Fairfax, VA 22031	YES	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	Yes
TF0573	S3875	Private	6/26/2020	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.4300	0.0000	38.874241	-77.274615	FY21	behind 2978 Rittenhouse Ci.	Fairfax, VA 22031	YES	PL30	Unnamed tributary to Accotink Creek	VAN-A15R_XKY01A06	No	No
TF0574	S3875	Private	6/26/2020	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.2600	0.0000	38.874526	-77.273794	FY21	Sprague Av.: adjacent to UG0774	Fairfax, VA 22031	YES	PL30	Unnamed tributary to Accotink Creek	VAN-A15R_XKY01A06	No	No

Facility ID	Site ID	Maintained By	Date Installed	BMP Name	Impervious Acres Treated (ac)	Pervious Acres Treated (ac)	Latitude	Longitude	Inspection Date/Year	Facility Address	Facility City/State/Zip	PMA	HUC6	Receiving Water Name	Receiving Water ID	Receiving Water Impaired	Facility Discharges to Fairfax County's MS4?
TF0575	S3875	Private	6/26/2020	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.5000	0.0000	38.874234	-77.273039	FY21	near 2956 Finsbury Pl.	Fairfax, VA 22031	YES	PL30	Unnamed tributary to Accotink Creek	VAN-A15R_XKY01A06	No	No
TF0576	S3875	Private	6/26/2020	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.4500	0.0000	38.874395	-77.272687	FY21	behind 2955 Finsbury Pl.	Fairfax, VA 22031	YES	PL30	Unnamed tributary to Accotink Creek	VAN-A15R_XKY01A06	No	No
TF0577	S3875	Private	6/26/2020	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.4100	0.0000	38.874093	-77.272985	FY21	Bastille St.: behind 3055 Rittenhouse Ci.	Fairfax, VA 22031	YES	PL30	Unnamed tributary to Accotink Creek	VAN-A15R_XKY01A06	No	No
TF0578	S3875	Private	6/26/2020	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.2300	0.0000	38.873995	-77.27337	FY21	Bastille St.: behind 3037 Rittenhouse Ci.	Fairfax, VA 22031	YES	PL30	Unnamed tributary to Accotink Creek	VAN-A15R_XKY01A06	No	No
TF0579	S3875	Private	6/26/2020	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.1300	0.0000	38.874076	-77.273799	FY21	Bastille St.: behind 2989 Rittenhouse Ci.	Fairfax, VA 22031	YES	PL30	Unnamed tributary to Accotink Creek	VAN-A15R_XKY01A06	No	No
TF0580	S3875	Private	6/26/2020	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.0700	0.0000	38.874091	-77.274121	FY21	near 2983 Rittenhouse Ci.	Fairfax, VA 22031	YES	PL30	Unnamed tributary to Accotink Creek	VAN-A15R_XKY01A06	No	No
TF0581	S3875	Private	6/26/2020	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.1100	0.0000	38.873752	-77.273797	FY21	near 3001 Rittenhouse Ci.	Fairfax, VA 22031	YES	PL30	Unnamed tributary to Accotink Creek	VAN-A15R_XKY01A06	No	No
TF0582	S3875	Private	6/26/2020	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.4200	0.0000	38.873848	-77.273057	FY21	near 3047 Rittenhouse Ci.	Fairfax, VA 22031	YES	PL30	Unnamed tributary to Accotink Creek	VAN-A15R_XKY01A06	No	No
TR1522	S3571	Private	9/6/2019	INFILTRATION PRACTICE	0.0732	0.0000	38.911469	-77.158416	4/2/2020	1927 Franklin Av.	McLean, VA 22101	YES	PL24	Little Pimmit Run	VAN-A12R_LIO01A10	Yes	No
TR1596	S2299	Private	8/30/2019	INFILTRATION PRACTICE	0.3700	0.0000	38.834749	-77.194981	3/30/2020	7209 Quiet Cv.	Annandale, VA 22003	YES	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	Yes
TR1598	S3698	Private	8/30/2019	INFILTRATION PRACTICE	0.0900	0.0000	38.930207	-77.192647	4/14/2020	1672 Chain Bridge Rd.	McLean, VA 22101	YES	PL24	Dead Run	VAN-A11R_DEA01A04	Yes	Yes
TR1599	S3699	Private	8/30/2019	INFILTRATION PRACTICE	0.1600	0.0000	38.931059	-77.192624	4/14/2020	near 1678 Chain Bridge Dr.	McLean, VA 22101	YES	PL23	Dead Run	VAN-A11R_DEA01A04	Yes	Yes
TR1600	S3700	Private	8/30/2019	INFILTRATION PRACTICE	0.0420	0.0000	38.912819	-77.200643	3/30/2020	1921 Griffith Rd.	Falls Church, VA 22043	YES	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
TR1601	S3702	Private	9/4/2019	INFILTRATION PRACTICE	0.0600	0.0000	38.913474	-77.192118	4/6/2020	1914 Pice Pl.	Falls Church, VA 22043	NO	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
TR1602	S3703	Private	9/4/2019	INFILTRATION PRACTICE	0.1000	0.0000	38.946476	-77.168377	4/16/2020	1104 Waverly Wy.	McLean, VA 22101	YES	PL23	Potomac River/Nichols Run/Scott Run	VAN-A11R_ZZZ23A00	No	Yes
TR1603	S3705	Private	9/5/2019	INFILTRATION PRACTICE	0.1670	0.1480	38.813397	-77.200069	3/31/2020	5104 Blue Ridge Av.	Annandale, VA 22003-5503	YES	PL26	Backlick Run	VAN-A13R_BAL01A00	Yes	No
TR1604	S3706	Private	9/5/2019	INFILTRATION PRACTICE	0.1500	0.1100	38.920505	-77.256988	5/12/2020	1757 Creek Crossing Rd.	Vienna, VA 22182	YES	PL22	Wolftrap Creek	VAN-A11R_WOT02A14	No	Yes
TR1605	S3707	Private	9/5/2019	INFILTRATION PRACTICE	0.1300	0.2400	38.747938	-77.049572	5/18/2020	7707 Ridgecrest Dr.	Alexandria, VA 22308-1052	YES	PL28	Potomac River	VAN-A14E_POT01A08	Yes	No
TR1606	S3708	Private	9/5/2019	INFILTRATION PRACTICE	0.0750	0.0940	38.782199	-77.068762	6/2/2020	6215 Berkeley Rd.	Alexandria, VA 22307	YES	PL26	Cameron Run	VAN-A13R_ZZZ26A00	No	No
TR1607	S3709	Private	9/5/2019	INFILTRATION PRACTICE	0.0600	0.1010	38.915293	-77.194716	3/31/2020	1834 Pimmit Dr.	Falls Church, VA 22043	YES	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
TR1608	S3710	Private	9/5/2019	INFILTRATION PRACTICE	0.0720	0.0730	38.876639	-77.291958	3/20/2020	2968 Hibbard St.	Oakton, VA 22124	YES	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	Yes
TR1609	S3711	Private	9/6/2019	INFILTRATION PRACTICE	0.0900	0.0590	38.905284	-77.186481	3/31/2020	2102 Greenwich St.	Falls Church, VA 22043	YES	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	No
TR1610	S3712	Private	9/5/2019	INFILTRATION PRACTICE	0.0590	0.0000	38.864056	-77.144754	4/2/2020	6106 Brook Dr.	Falls Church, VA 22044	YES	PL25	Long Branch	VAN-A12R_LOF01A08	No	Yes
TR1611	S3713	Private	9/5/2019	INFILTRATION PRACTICE	0.0550	0.0750	38.819168	-77.155694	4/4/2020	6476 2nd St.	Alexandria, VA 22312	YES	PL26	Cameron Run	VAN-A13R_ZZZ26A00	No	No
TR1612	S3714	Private	9/5/2019	INFILTRATION PRACTICE	0.1040	0.1490	38.775676	-77.198277	4/28/2020	6529 Wren Dr.	Springfield, VA 22150	YES	PL30	Accotink Creek	VAN-A15R_ACO01B10	Yes	No
TR1613	S3715	Private	9/5/2019	INFILTRATION PRACTICE	0.1600	0.2000	38.76943	-77.164056	5/20/2020	6419 Melia St.	Springfield, VA 22150-1145	YES	PL30	Long Branch	VAN-A15R_LOA01A08	Yes	No
TR1614	S3716	Private	9/6/2019	INFILTRATION PRACTICE	0.1000	0.1400	39.004873	-77.342853	3/31/2020	946 Seneca Rd.	Great Falls, VA 22066-1314	YES	PL21	Sugarland Run	VAN-A10R_ZZZ21A00	No	Yes
TR1615	S3717	Private	9/6/2019	INFILTRATION PRACTICE	0.0800	0.0550	38.753389	-77.231212	4/28/2020	7420 Ridge Rd.	Springfield, VA 22153	YES	PL29	Pohick Creek	VAN-A16R_POH02A02	Yes	No
TR1616	S3718	Private	9/6/2019	INFILTRATION PRACTICE	0.1000	0.1200	38.846647	-77.208653	3/30/2020	3502 Alpha Pl.	Annandale, VA 22003	YES	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	No
TR1617	S3720	Private	9/6/2019	INFILTRATION PRACTICE	0.0950	0.2390	38.867962	-77.155986	4/2/2020	3032 Hazelton St.	Falls Church, VA 22044	YES	PL26	Tripps Run	VAN-A13R_TRI01A00	Yes	No
TR1619	S3721	Private	9/6/2019	INFILTRATION PRACTICE	0.1030	0.1490	38.838998	-77.268223	5/12/2020	4021 Goss Rd.	Fairfax, VA 22032	YES	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	Yes
TR1620	S3737	Private	11/6/2019	INFILTRATION PRACTICE	0.0400	0.0000	38.925067	-77.138771	4/1/2020	1610 Forest Ln.	McLean, VA 22101-3318	YES	PL24	Little Pimmit Run	VAN-A12R_LIO01A10	Yes	Yes
TR1621	S3738	Private	11/8/2019	INFILTRATION PRACTICE	0.0300	0.0000	38.913788	-77.210155	3/30/2020	7621 Lunceford Ln.	McLean, VA 22101	YES	PL23	Potomac River/Nichols Run/Scott Run	VAN-A11R_ZZZ23A00	No	No
TR1622	S3739	Private	11/13/2019	INFILTRATION PRACTICE	0.0500	0.0000	38.898843	-77.165647	4/6/2020	6633 32nd St. N	Arlington, VA 22213	YES	PL25	Four Mile Run	VAN-A12R_FOU01A00	Yes	Yes
TR1623	S3741	Private	11/13/2019	INFILTRATION PRACTICE	0.0300	0.0000	38.928354	-77.179509	4/14/2020	1567 McNeer St.	McLean, VA 22101	YES	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
TR1624	S3743	Private	10/24/2019	INFILTRATION PRACTICE	0.1100	0.0000	38.90635	-77.295346	5/18/2020	2316 Trott Av.	Vienna, VA 22181-3131	YES	PL22	Difficult Run	VAN-A11R_ZZZ22A00	No	Yes
TR1625	S3744	Private	10/25/2019	INFILTRATION PRACTICE	0.0700	0.0000	38.925139	-77.140863	4/1/2020	6028 Woodley Rd.	McLean, VA 22101	YES	PL24	Little Pimmit Run	VAN-A12R_LIO01A10	Yes	No
TR1627	S3746	Private	11/13/2019	INFILTRATION PRACTICE	0.0300	0.0000	38.918572	-77.161637	4/1/2020	1800 Sheridian Ct.	McLean, VA 22101	YES	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	No
TR1628	S3747	Private	11/13/2019	INFILTRATION PRACTICE	0.0700	0.0000	38.915305	-77.204739	3/30/2020	7517 Lisle Av.	Falls Church, VA 22043-1038	YES	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
TR1629	S3749	Private	4/14/2020	INFILTRATION PRACTICE	1.6900	6.7300	38.989201	-77.275814	FY21	between 9599 and 9601 Perkins Farm Ln.	Great Falls, VA 22066	YES	PL22	Captain Hickory Run	VAN-A11R_CAH01A04	Yes	No
TR1630	S3750	Private	9/20/2019	INFILTRATION PRACTICE	0.0500	0.0000	38.931666	-77.18881	4/14/2020	1423 Audmar Dr.	McLean, VA 22101	YES	PL23	Dead Run	VAN-A11R_DEA01A04	Yes	Yes
TR1631	S3751	Private	9/20/2019	INFILTRATION PRACTICE	0.0700	0.0000	38.925064	-77.180535	4/16/2020	1610 Simmons Ct.	McLean, VA 22101	YES	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
TR1632	S3754	Private	9/20/2019	INFILTRATION PRACTICE	0.0286	0.0000	38.901487	-77.172199	4/6/2020	6608 Moly Dr.	Falls Church, VA 22046	YES	PL25	Four Mile Run	VAN-A12R_FOU01A00	Yes	Yes
TR1633	S3755	Private	9/20/2019	INFILTRATION PRACTICE	0.0300	0.0000	38.899615	-77.170621	4/6/2020	6607 Fisher Av.	Falls Church, VA 22046	YES	PL25	Four Mile Run	VAN-A12R_FOU01A00	Yes	Yes
TR1634	S3757	Private	4/9/2020	INFILTRATION PRACTICE	0.4600	0.8400	38.780758	-77.137617	FY21	behind 6011 Masondale Rd.	Alexandria, VA 22315	NO	PL27	Dogue Creek	VAN-A14R_ZZZ27A00	No	Yes
TR1635	S3758	Private	10/25/2019	INFILTRATION PRACTICE	0.1150	0.1700	38.838359	-77.224524	5/12/2020	3910 Lake Bv.	Annandale, VA 22003-2319	YES	PL30	Accotink Creek	VAN-A15R_ACO02A00	Yes	Yes
TR1636	S3759	Private	2/6/2020	INFILTRATION PRACTICE	0.6000	1.3000	38.961181	-77.211949	FY21	7716 Georgetown Pi.	McLean, VA 22102-1431	YES	PL23	Scott Run	VAN-A11R_SCO01A02	No	Yes
TR1637	S3760	Private	2/6/2020	INFILTRATION PRACTICE	0.0300	0.0000	38.911367	-77.165415	FY21	1929 Relda Ct.	Falls Church, VA 22043	YES	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
TR1638	S3762	Private	2/6/2020	INFILTRATION PRACTICE	0.0671	0.0000	38.920747	-77.177148	FY21	1715 Macon St.	McLean, VA 22101	YES	PL24	Pimmit Run	VAN-A12R_PIM02B06	Yes	Yes
TR1639	S3763	Private	2/6/2020	INFILTRATION PRACTICE	0.0300	0.0000	38.920914	-77.181972	FY21	6902 Southridge Dr.	McLean, VA 22101	YES	PL24	Pimmit Run	VAN-A12R_PIM02B06	Yes	Yes
TR1640	S3764	Private	2/6/2020	INFILTRATION PRACTICE	0.0500	0.0000	38.991728	-77.290634	FY21	833 Golden Arrow St.	Great Falls, VA 22066	YES	PL22	Captain Hickory Run	VAN-A11R_CAH01A04	Yes	No
TR1641	S3765	Private	2/7/2020	INFILTRATION PRACTICE	0.0800	0.4600	38.926736	-77.266401	FY21	9318 Old Courthouse Rd.	Vienna, VA 22182	YES	PL22	Difficult Run	VAN-A11R_ZZZ22A00	No	No
TR1642	S3765	Private	2/26/2020	INFILTRATION PRACTICE	0.1100	0.2200	38.926854	-77.266649	FY21	9320 Old Courthouse Rd.	Vienna, VA 22101	YES	PL22	Difficult Run	VAN-A11R_ZZZ22A00	No	No
TR1643	S3766	Private	2/26/2020	INFILTRATION PRACTICE	0.0600	0.0000	38.894417	-77.175949	FY21	6659 Locust St.	Falls Church, VA 22046	YES	PL26	Tripps Run	VAN-A13R_TRI01A00	Yes	No
TR1644	S3766	Private	2/26/2020	INFILTRATION PRACTICE	0.0600	0.0000	38.89463	-77.175818	FY21	6657 Locust St.	Falls Church, VA 22046	YES	PL26	Tripps Run	VAN-A13R_TRI01A00	Yes	No

Facility ID	Site ID	Maintained By	Date Installed	BMP Name	Impervious Acres Treated (ac)	Pervious Acres Treated (ac)	Latitude	Longitude	Inspection Date/Year	Facility Address	Facility City/State/Zip	PMA	HUC6	Receiving Water Name	Receiving Water ID	Receiving Water Impaired	Facility Discharges to Fairfax County's MS4?
TR1645	S3767	Private	2/26/2020	INFILTRATION PRACTICE	0.0600	0.0000	38.8931	-77.280892	FY21	2583 Rambling Rd.	Vienna, VA 22181	YES	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	No
TR1647	S3771	Private	10/25/2019	INFILTRATION PRACTICE	0.0500	0.0000	38.920636	-77.159291	4/1/2020	1738 Fairview Av.	McLean, VA 22101	YES	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	No
TR1648	S3771	Private	10/25/2019	INFILTRATION PRACTICE	0.0500	0.0000	38.920822	-77.159228	4/1/2020	1734 Fairview Av.	McLean, VA 22101	YES	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	No
TR1649	S3772	Private	10/25/2019	INFILTRATION PRACTICE	0.0300	0.0000	38.901544	-77.175928	4/6/2020	6640 Moly Dr.	Falls Church, VA 22046-1829	YES	PL25	Four Mile Run	VAN-A12R_FOU01A00	Yes	Yes
TR1650	S3773	Private	2/27/2020	INFILTRATION PRACTICE	0.0400	0.0000	38.912769	-77.211757	FY21	1931 Fisher Ct.	Falls Church, VA 22043	YES	PL23	Potomac River/Nichols Run/Scott Run	VAN-A11R_ZZZ23A00	No	No
TR1651	S3774	Private	2/28/2020	INFILTRATION PRACTICE	0.0400	0.0000	38.918451	-77.197492	FY21	1802 Gilson St.	Falls Church, VA 22043	NO	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	No
TR1653	S3740	Private	10/24/2019	INFILTRATION PRACTICE	0.0440	0.0000	38.913027	-77.203228	5/5/2020	7503 Fisher Dr.	Falls Church, VA 22043	NO	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
TR1654	S3745	Private	10/25/2019	INFILTRATION PRACTICE	0.1000	0.0000	38.947979	-77.185162	5/13/2020	6916 Bright Av.	McLean, VA 22101-2101	YES	PL23	Dead Run	VAN-A11R_DEA01A04	Yes	Yes
TR1655	S2935	Private	9/11/2019	INFILTRATION PRACTICE	0.0800	0.0650	38.941972	-77.217049	9/12/2019	7904 Old Falls Rd.	McLean, VA 22102	YES	PL23	Potomac River/Nichols Run/Scott Run	VAN-A11R_ZZZ23A00	No	No
TR1659	S3793	Private	3/20/2020	INFILTRATION PRACTICE	0.1300	0.0000	38.930557	-77.178596	FY21	6803 Whittier Av.	McLean, VA 22103	YES	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	No
TR1660	S3800	Private	3/24/2020	INFILTRATION PRACTICE	0.0300	0.0000	38.932585	-77.186175	FY21	1445 Pathfinder Ln.	McLean, VA 22101	YES	PL23	Dead Run	VAN-A11R_DEA01A04	Yes	Yes
TR1661	S3804	Private	3/24/2020	INFILTRATION PRACTICE	0.1000	0.0000	38.914925	-77.17182	FY21	1824 Youngblood St.	McLean, VA 22101	YES	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	No
TR1663	S3808	Private	3/24/2020	INFILTRATION PRACTICE	0.3000	0.0000	38.954583	-77.187058	FY21	7011 Holyrood Dr.	McLean, VA 22101-1553	YES	PL23	Dead Run	VAN-A11R_DEA01A04	Yes	Yes
TR1664	S3810	Private	3/26/2020	INFILTRATION PRACTICE	0.0600	0.0000	38.908198	-77.201452	FY21	2026 Maynard Dr.	Falls Church, VA 22043	YES	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
TR1665	S3811	Private	3/26/2020	INFILTRATION PRACTICE	0.0400	0.0000	38.907006	-77.16992	FY21	6600 Quinten St.	Falls Church, VA 22043	YES	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
TR1666	S3812	Private	3/26/2020	INFILTRATION PRACTICE	0.4100	0.0000	38.987144	-77.273427	FY21	813 Leigh Mill Rd.	Great Falls, VA 22066	NO	PL22	Difficult Run	VAN-A11R_ZZZ22A00	No	No
TR1667	S3813	Private	3/26/2020	INFILTRATION PRACTICE	0.2600	0.0000	38.98674	-77.273909	FY21	815 Leigh Mill Rd.	Great Falls, VA 22066	YES	PL22	Difficult Run	VAN-A11R_ZZZ22A00	No	No
TR1668	S3814	Private	3/27/2020	INFILTRATION PRACTICE	0.0670	0.0430	38.88597	-77.197374	FY21	2610 Sigmona St.	Falls Church, VA 22046	YES	PL26	Tripps Run	VAN-A13R_TRI01A00	Yes	No
TR1669	S3815	Private	3/27/2020	INFILTRATION PRACTICE	0.0400	0.0000	38.917716	-77.282151	FY21	1917 Contralto Ct.	Vienna, VA 22182	NO	PL22	Difficult Run	VAN-A11R_ZZZ22A00	No	No
TR1670	S3818	Private	3/30/2020	INFILTRATION PRACTICE	0.0400	0.0000	38.900613	-77.172139	FY21	2214 Orchid Dr.	Falls Church, VA 22046	YES	PL25	Four Mile Run	VAN-A12R_FOU01A00	Yes	Yes
TR1671	S3819	Private	3/30/2020	INFILTRATION PRACTICE	0.0400	0.0000	38.914693	-77.159509	FY21	1862 Patton Ter.	McLean, VA 22101	YES	PL24	Little Pimmit Run	VAN-A12R_LIO01A10	Yes	Yes
TR1672	S3820	Private	3/30/2020	INFILTRATION PRACTICE	0.0530	0.0000	38.918365	-77.181906	FY21	6822 Dean Dr.	McLean, VA 22101	YES	PL24	Pimmit Run	VAN-A12R_PIM02B06	Yes	Yes
TR1673	S3821	Private	3/30/2020	INFILTRATION PRACTICE	0.0400	0.0000	38.92324	-77.158963	FY21	1659 Strine Dr.	McLean, VA 22101	YES	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	No
TR1674	S3822	Private	3/30/2020	INFILTRATION PRACTICE	0.0800	0.1300	38.886516	-77.284477	FY21	2730 Chain Bridge Rd.	Vienna, VA 22181	YES	PL30	Difficult Run	VAN-A11R_ZZZ22A00	No	Yes
TR1675	S3824	Private	3/30/2020	INFILTRATION PRACTICE	0.0600	0.0000	38.933102	-77.185908	FY21	1433 Pathfinder Ln.	McLean, VA 22101-3507	YES	PL23	Dead Run	VAN-A11R_DEA01A04	Yes	No
TR1676	S3825	Private	3/30/2020	INFILTRATION PRACTICE	0.2300	0.0000	38.81653	-77.196704	FY21	7309 Calvert St.	Annandale, VA 22003	YES	PL26	Backlick Run	VAN-A13R_BAL01A00	Yes	No
TR1677	S3826	Private	3/30/2020	INFILTRATION PRACTICE	0.0318	0.0000	38.916893	-77.207226	FY21	7603 Magarity Rd.	Falls Church, VA 22043	YES	PL23	Potomac River/Nichols Run/Scott Run	VAN-A11R_ZZZ23A00	No	No
TR1678	S3827	Private	3/30/2020	INFILTRATION PRACTICE	0.4200	0.0000	38.913109	-77.157546	FY21	1915 Franklin Av.	McLean, VA 22101-5309	YES	PL24	Little Pimmit Run	VAN-A12R_LIO01A10	Yes	Yes
TR1679	S3827	Private	3/30/2020	INFILTRATION PRACTICE	0.1000	0.0000	38.913401	-77.158177	FY21	1915 Franklin Av.	McLean, VA 22101-5309	YES	PL24	Little Pimmit Run	VAN-A12R_LIO01A10	Yes	Yes
TR1680	S3831	Private	3/31/2020	INFILTRATION PRACTICE	0.1700	0.0000	38.995776	-77.270819	FY21	670 Mine Ridge Rd.	Great Falls, VA 22066	YES	PL23	Mine Run	VAN-A11R_MNR01A04	Yes	No
TR1681	S3832	Private	3/31/2020	INFILTRATION PRACTICE	0.0300	0.0000	38.910208	-77.204687	FY21	2010 Kilgore Rd.	Falls Church, VA 22043	YES	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
TR1682	S3833	Private	3/31/2020	INFILTRATION PRACTICE	0.0300	0.0000	38.913684	-77.184078	FY21	6910 Strata St.	McLean, VA 22101	YES	PL24	Pimmit Run	VAN-A12R_PIM02B06	Yes	Yes
TR1683	S3834	Private	4/1/2020	INFILTRATION PRACTICE	0.4800	0.0000	38.952122	-77.158833	FY21	820 Turkey Run Rd.	McLean, VA 22101	YES	PL23	Potomac River/Nichols Run/Scott Run	VAN-A11R_ZZZ23A00	No	No
TR1684	S3850	Private	5/6/2020	INFILTRATION PRACTICE	0.0500	0.0000	38.944556	-77.169392	FY21	1127 Marion Av.	McLean, VA 22101-2951	YES	PL23	Potomac River/Nichols Run/Scott Run	VAN-A11R_ZZZ23A00	No	Yes
TR1685	S3836	Private	4/1/2020	INFILTRATION PRACTICE	0.0700	0.0000	38.910747	-77.163295	FY21	1944 Lorraine Av.	McLean, VA 22101	YES	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
TR1686	S3857	Private	5/21/2020	INFILTRATION PRACTICE	0.0300	0.0000	38.916547	-77.183052	FY21	1821 Deer Dr.	McLean, VA 22101	YES	PL24	Pimmit Run	VAN-A12R_PIM02B06	Yes	Yes
TR1687	S3837	Private	4/1/2020	INFILTRATION PRACTICE	0.0490	0.0000	38.912911	-77.207764	FY21	7606 Leonard Dr.	Falls Church, VA 22043	YES	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
TR1688	S3839	Private	4/6/2020	INFILTRATION PRACTICE	0.0300	0.0000	38.927303	-77.163056	FY21	1531 Brookhaven Dr.	McLean, VA 22101	YES	PL24	Pimmit Run	VAN-A12R_PIM02A00	Yes	Yes
TR1689	S3840	Private	4/6/2020	INFILTRATION PRACTICE	0.0600	0.0000	38.916	-77.169215	FY21	6534 Chesterfield Av.	McLean, VA 22101-5232	YES	PL24	Pimmit Run	VAN-A12R_PIM02B06	Yes	Yes
TR1690	S3841	Private	4/27/2020	INFILTRATION PRACTICE	0.0700	0.0000	38.893497	-77.194277	FY21	2408 Chestnut St.	Falls Church, VA 22043	YES	PL26	Tripps Run	VAN-A13R_TRI01A00	Yes	No
TR1691	S3848	Private	5/6/2020	INFILTRATION PRACTICE	0.0446	0.0000	38.918251	-77.197418	FY21	1804 Gilson St.	Falls Church, VA 22043	YES	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	No
TR1692	FCPS0090	Public	3/26/2020	INFILTRATION PRACTICE	NA	NA	38.891493	-77.2499	FY21	1001 Park SE St.	Vienna, VA 22180	NO	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	No
TR1693	S3853	Private	5/20/2020	INFILTRATION PRACTICE	0.0000	0.0000	39.007763	-77.270303	FY21	501 Chesapeake Dr.	Great Falls, VA 22066-3923	YES	PL23	Potomac River/Nichols Run/Scott Run	VAN-A11R_ZZZ23A00	No	No
TR1694	S3853	Private	5/20/2020	INFILTRATION PRACTICE	0.0000	0.0000	39.007557	-77.270163	FY21	501 Chesapeake Dr.	Great Falls, VA 22066-3923	YES	PL23	Potomac River/Nichols Run/Scott Run	VAN-A11R_ZZZ23A00	No	No
TR1695	S3859	Private	5/21/2020	INFILTRATION PRACTICE	0.0200	0.0000	38.921552	-77.158207	FY21	1710 Valley Av.	McLean, VA 22101	YES	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	No
TR1696	S3861	Private	5/22/2020	INFILTRATION PRACTICE	0.0620	0.0000	38.89497	-77.182623	FY21	6912 Sycamore St.	Falls Church, VA 22046	YES	PL26	Tripps Run	VAN-A13R_TRI01A00	Yes	No
TR1697	S3862	Private	5/22/2020	INFILTRATION PRACTICE	0.0340	0.0000	38.895095	-77.182387	FY21	6910 Sycamore St.	Falls Church, VA 22046	YES	PL26	Tripps Run	VAN-A13R_TRI01A00	Yes	No
TR1698	S3864	Private	5/26/2020	INFILTRATION PRACTICE	0.1110	0.1760	38.905844	-77.200263	FY21	7400 Howard Ct.	Falls Church, VA 22043	YES	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
TR1699	S3865	Private	5/26/2020	INFILTRATION PRACTICE	0.0900	0.0000	38.896943	-77.21187	FY21	2301 Providence St.	Falls Church, VA 22043	YES	PL24	Pimmit Run	VAN-A12R_PIM02B06	Yes	Yes
TR1700	S3866	Private	5/26/2020	INFILTRATION PRACTICE	0.0370	0.0000	38.916763	-77.183797	FY21	1818 Deer Dr.	McLean, VA 22101	YES	PL24	Pimmit Run	VAN-A12R_PIM02B06	Yes	Yes
TR1701	S3869	Private	6/4/2020	INFILTRATION PRACTICE	0.0500	0.0000	38.892883	-77.291237	FY21	2616 Oak Valley Dr.	Vienna, VA 22181	YES	PL22	Difficult Run	VAN-A11R_ZZZ22A00	No	Yes
TR1702	S3870	Private	6/4/2020	INFILTRATION PRACTICE	0.0300	0.0000	38.92383	-77.166141	FY21	6503 Old Chesterbrook Rd.	McLean, VA 22101	YES	PL24	Pimmit Run	VAN-A12R_PIM02B06	Yes	Yes
TR1703	S3871	Private	6/5/2020	INFILTRATION PRACTICE	0.0500	0.0000	38.914732	-77.164859	FY21	6504 Chesterfield Av.	McLean, VA 22101	YES	PL24	Pimmit Run	VAN-A12R_PIM02B06	Yes	Yes
TR1704	S3872	Private	6/8/2020	INFILTRATION PRACTICE	0.7900	0.0000	38.787271	-77.276567	FY21	9617 Burke Lake Rd.	Burke, VA 22015	YES	PL29	Pohick Creek	VAN-A16R_POH03A04	Yes	Yes
TR1705	S3872	Private	6/8/2020	INFILTRATION PRACTICE	1.1800	0.6400	38.786369	-77.277172	FY21	9617 Burke Lake Rd.	Burke, VA 22015	YES	PL29	Pohick Creek	VAN-A16R_POH03A04	Yes	Yes

Facility ID	Site ID	Maintained By	Date Installed	BMP Name	Impervious Acres Treated (ac)	Pervious Acres Treated (ac)	Latitude	Longitude	Inspection Date/Year	Facility Address	Facility City/State/Zip	PMA	HUC6	Receiving Water Name	Receiving Water ID	Receiving Water Impaired	Facility Discharges to Fairfax County's MS4?
UG0740	S3691	Private	1/6/2020	UNDERGROUND DETENTION	0.0470	0.0000	38.737261	-77.052173	FY21	1119 Arcturus Ln.	Alexandria, VA 22308	YES	PL28	Potomac River/Little Hunting Creek	VAN-A14R_ZZZ28A00	No	Yes
UG0755	S3788	Private	3/18/2020	UNDERGROUND DETENTION	0.5000	0.2000	38.938067	-77.182131	FY21	6890 Elm St.	McLean, VA 22101	YES	PL23	Dead Run	VAN-A11R_DEA01A04	Yes	Yes
UG0756	S3795	Private	3/23/2020	UNDERGROUND DETENTION	4.9200	0.2100	38.805934	-77.214685	FY21	5325 Port Royal Rd.	Springfield, VA 22151	YES	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	No
UG0757	S0063	Private	3/25/2020	UNDERGROUND DETENTION	3.1700	0.5500	38.93747	-77.181229	FY21	near 6862 Elm St.	McLean, VA 22101	YES	PL23	Dead Run	VAN-A11R_DEA01A04	Yes	Yes
UG0758	S0371	Private	2/19/2020	UNDERGROUND DETENTION	0.4600	0.0500	38.852328	-77.133496	4/2/2020	5871 Leesburg Pi.	Falls Church, VA 22041	YES	PL26	Cameron Run	VAN-A13R_ZZZ26A00	No	No
UG0759	S3736	Private	4/7/2020	UNDERGROUND DETENTION	3.8000	0.0700	38.819366	-77.446743	FY21	6600 Old Centreville Rd.	Centreville, VA 20121	YES	PL46	Lower Bull Run	VAN-A23R_ZZZ46A00	No	No
UG0760	S1320	Private	4/10/2020	UNDERGROUND DETENTION	3.9000	0.0000	38.908674	-77.219098	FY21	7980 Science Applications Ct.	Vienna, VA 22182	YES	PL24	Pimmit Run	VAN-A12R_PIM02B06	Yes	No
UG0761	S0109	Private	4/9/2020	UNDERGROUND DETENTION	0.3200	0.0700	38.798378	-77.095608	FY21	3700 Burgundy Rd.	Alexandria, VA 22303	YES	PL26	Cameron Run/Hunting Creek	VAN-A13R_CAM01A04	No	Yes
UG0762	S3591	Private	4/9/2020	UNDERGROUND DETENTION	3.5000	0.0300	38.769078	-77.083447	FY21	6850 Richmond Hy.	Alexandria, VA 22306	YES	PL28	Paul Springs Branch	VAN-A14R_PAU01A04	Yes	Yes
UG0763	S3843	Private	4/6/2020	UNDERGROUND DETENTION	6.6500	0.0000	38.797062	-77.182228	FY21	6805 S Industrial Rd.	Springfield, VA 22151	YES	PL26	Backlick Run	VAN-A13R_BAL01A00	Yes	No
UG0764	S3844	Private	4/6/2020	UNDERGROUND DETENTION	1.2300	2.9700	38.898902	-77.47777	FY21	4501 Pleasant Valley Rd.	Chantilly, VA 20151	YES	PL45	Cub Run	VAN-A22R_CUB02A02	Yes	Yes
UG0765	S1503	Private	4/14/2020	UNDERGROUND DETENTION	1.9000	0.3000	38.962816	-77.364339	FY21	1850 Town Center Dr.	Reston, VA 20190	YES	PL21	Sugarland Run	VAN-A10R_SUG02A02	Yes	No
UG0766	S3847	Private	5/6/2020	UNDERGROUND DETENTION	0.1180	0.1678	38.951669	-77.172746	FY21	931 Mackall Av.	McLean, VA 22101	YES	PL23	Potomac River/Nichols Run/Scott Run	VAN-A11R_ZZZ23A00	No	No
UG0767	S3512	Private	3/18/2020	UNDERGROUND DETENTION	1.7500	0.0300	38.897265	-77.17983	4/28/2020	2328 North Oak St.	Falls Church, VA 22046	YES	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	No
UG0768	FCPS0090	Public	3/26/2020	UNDERGROUND DETENTION	NA	NA	38.892134	-77.250946	FY21	1001 Park SE St.	Vienna, VA 22180	NO	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	No
UG0769	S3851	Private	5/7/2020	UNDERGROUND DETENTION	0.0140	0.0000	38.741824	-77.052575	FY21	1139 Westmoreland Rd.	Alexandria, VA 22308	NO	PL28	Potomac River/Little Hunting Creek	VAN-A14R_ZZZ28A00	No	No
UG0770	S3852	Private	5/7/2020	UNDERGROUND DETENTION	0.0220	0.0000	38.741845	-77.052779	FY21	1143 Westmoreland Rd.	Alexandria, VA 22308	NO	PL28	Potomac River/Little Hunting Creek	VAN-A14R_ZZZ28A00	No	No
UG0771	S1473	Private	6/8/2020	UNDERGROUND DETENTION	0.3600	0.3500	38.895487	-77.235686	FY21	2371 Cedar Ln.	Vienna, VA 22182	YES	PL30	Long Branch	VAN-A15R_LOB01A02	No	Yes
UG0772	S3873	Private	6/25/2020	UNDERGROUND DETENTION	8.5000	17.3500	38.87624	-77.269921	FY21	Bleeker St.	Fairfax, VA 22031	YES	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	Yes
UG0773	S3874	Private	6/25/2020	UNDERGROUND DETENTION	5.1000	1.0800	38.870952	-77.269306	FY21	behind 9657 Pullman Pl.	Fairfax, VA 22031	YES	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	Yes
UG0774	S3875	Private	6/26/2020	UNDERGROUND DETENTION	0.0000	0.0000	38.874321	-77.273591	FY21	behind 2932 Finsbury Pl.	Fairfax, VA 22031	YES	PL30	Unnamed tributary to Accotink Creek	VAN-A15R_XKY01A06	No	No
UG0775	S0892	Private	5/27/2020	UNDERGROUND DETENTION	3.0600	0.0000	38.828775	-77.357981	FY21	11911 Braddock Rd.	Fairfax, VA 22030	YES	PL46	Lower Bull Run	VAN-A23R_ZZZ46A00	No	Yes
VS0042	S3735	Private	11/6/2019	VEGETATED SWALE	0.0800	0.2000	38.944259	-77.174328	4/20/2020	1126 Guilford Ct.	McLean, VA 22101	YES	PL23	Dead Run	VAN-A11R_DEA01A04	Yes	No
VS0043	S3735	Private	11/6/2019	VEGETATED SWALE	0.0400	0.0400	38.944056	-77.174018	4/20/2020	1126 Guilford Ct.	McLean, VA 22101	YES	PL23	Dead Run	VAN-A11R_DEA01A04	Yes	No
WP0461	S3792	Private	3/20/2020	WET POND	3.3000	3.0300	38.903871	-77.477794	FY21	4350 Blue Spring Dr.	Chantilly, VA 20151	YES	PL45	Cub Run	VAN-A22R_ZZZ45A00	No	No
2119MB	0042S	Public	4/27/2020	MANUFACTURED BMP (PROPRIETARY)/STORMFILTER	0.0600	0.0000	38.852962	-77.374115	FY21	4500 West Ox Rd.	Fairfax, VA 22030	NO	PL45	Cub Run	VAN-A22R_ZZZ45A00	No	No
2115MB	0299S	Public	1/6/2020	MANUFACTURED BMP (PROPRIETARY)/BAYFILTER	2.1400	2.0800	38.941255	-77.184291	FY21	1235 Oak Ridge Av.	Mclean, VA 22101	NO	PL23	Dead Run	VAN-A11R_DEA01A04	Yes	Yes
2088WS	0712S	Public	12/6/2019	WET SWALE (LINEAR WETLAND)/SPSC	2.4500	1.2500	38.857477	-77.361746	FY21	12099 Government Center Pw.	Fairfax, VA 22035	NO	PL22	Difficult Run	VAN-A11R_ZZZ22A00	No	Yes
2078BR	FCPS0095	Public	7/19/2019	BIORETENTION	0.2200	0.4300	38.803133	-77.222622	FY21	5411 Nutting Dr.	Springfield, VA 22151	YES	PL30	Accotink Creek	VAN-A15L_ACO01A10	Yes	Yes
2079AS	FCPS0095	Public	7/19/2019	SOIL COMPOST AMENDMENT	0.0000	0.8400	38.803119	-77.222901	12/5/2019	5411 Nutting Dr.	Springfield, VA 22151	YES	PL30	Accotink Creek	VAN-A15L_ACO01A10	Yes	Yes
2080AS	FCPS0095	Public	7/19/2019	SOIL COMPOST AMENDMENT	0.0000	0.2500	38.802855	-77.223947	12/5/2019	5411 Nutting Dr.	Springfield, VA 22151	YES	PL30	Accotink Creek	VAN-A15R_ACO02A00	Yes	Yes
2081BR	FCPS0097	Public	8/5/2019	BIORETENTION	0.8800	2.5400	38.802516	-77.208186	FY21	7602 Heming Ct.	Springfield, VA 22151	YES	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	No
2082AS	FCPS0097	Public	8/5/2019	SOIL COMPOST AMENDMENT	0.0230	0.0770	38.801511	-77.206659	12/5/2019	7602 Heming Ct.	Springfield, VA 22151	YES	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	No
2083AS	FCPS0097	Public	8/5/2019	SOIL COMPOST AMENDMENT	0.0000	0.0400	38.801278	-77.206816	12/5/2019	7602 Heming Ct.	Springfield, VA 22151	YES	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	No
2084AS	FCPS0097	Public	8/5/2019	SOIL COMPOST AMENDMENT	0.0000	0.0800	38.801143	-77.206542	12/5/2019	7602 Heming Ct.	Springfield, VA 22151	YES	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	No
2085AS	FCPS0097	Public	8/5/2019	SOIL COMPOST AMENDMENT	0.0110	0.3390	38.802369	-77.208491	12/5/2019	7602 Heming Ct.	Springfield, VA 22151	YES	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	No
2086AS	FCPS0097	Public	8/5/2019	SOIL COMPOST AMENDMENT	0.0800	0.3000	38.802019	-77.208648	12/5/2019	7602 Heming Ct.	Springfield, VA 22151	YES	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	No
2089WS	0739S	Public	12/6/2019	WET SWALE (LINEAR WETLAND)/SPSC	2.3600	8.9200	38.915431	-77.393818	FY21	Ashburton Av / Saffron Dr	Herndon, VA 20171	NO	PL18	Horsepen Run	VAN-A09R_HPR02A12	Yes	Yes
2090WS	FCPA0094	Public	12/9/2019	WET SWALE (LINEAR WETLAND)/SPSC	1.9000	2.7300	38.786656	-77.200881	FY21	7417 Floyd Ave.	Springfield, VA 22150	NO	PL30	Accotink Creek	VAN-A15R_ACO01B10	Yes	No
2091WS	1308S	Public	12/10/2019	WET SWALE (LINEAR WETLAND)/SPSC	5.1700	19.0800	38.93709	-77.192827	FY21	behind 1201 Banton Ci.	McLean, VA 22101	NO	PL23	Dead Run	VAN-A11R_DEA01A04	Yes	No
2092WS	FCPA0131	Public	12/10/2019	WET SWALE (LINEAR WETLAND)/SPSC	12.5400	27.0200	38.8875	-77.276064	FY21	adjacent to 9617 Courthouse Rd.	Vienna, VA 22181	NO	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	No
2093WS	FCPA0131	Public	12/10/2019	WET SWALE (LINEAR WETLAND)/SPSC	11.8900	15.8400	38.886583	-77.278266	FY21	adjacent to 9617 Courthouse Rd.	Vienna, VA 22181	NO	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	No
2094WS	1310S	Public	1/8/2020	WET SWALE (LINEAR WETLAND)/SPSC	5.0000	15.0000	38.882774	-77.3434	FY21	behind Norwegian Mill Ct.	Oakton, VA 22124	NO	PL22	Difficult Run	VAN-A11R_ZZZ22A00	No	Yes
2095BR	FCPS0054	Public	9/23/2019	BIORETENTION	0.4700	0.0000	38.725376	-77.055434	FY21	1205 Waynewood Bv.	Alexandria, VA 22308	YES	PL28	Potomac River	VAN-A14E_POT01A08	Yes	Yes
2096TR	FCPS0101	Public	10/7/2019	INFILTRATION PRACTICE	0.5800	0.0900	38.739062	-77.239423	FY21	8001 Newington Forest Av.	Springfield, VA 22153	YES	PL29	Pohick Creek	VAN-A16R_ZZZ29A00	No	Yes
2097MB	FCPS0101	Public	10/7/2019	MANUFACTURED BMP (PROPRIETARY)/CDS	0.5800	0.0900	38.738976	-77.23955	FY21	8001 Newington Forest Av.	Springfield, VA 22153	YES	PL29	Pohick Creek	VAN-A16R_ZZZ29A00	No	Yes
2098AS	FCPS0101	Public	10/7/2019	SOIL COMPOST AMENDMENT	0.0000	1.9000	38.738579	-77.239438	FY21	8001 Newington Forest Av.	Springfield, VA 22153	YES	PL29	Pohick Creek	VAN-A16R_ZZZ29A00	No	Yes
2099AS	FCPS0101	Public	10/7/2019	SOIL COMPOST AMENDMENT	0.0000	0.1000	38.739646	-77.239922	FY21	8001 Newington Forest Av.	Springfield, VA 22153	YES	PL29	Pohick Creek	VAN-A16R_ZZZ29A00	No	Yes
2100RF	FCPS0101	Public	10/7/2019	REFORESTATION	0.1400	0.2000	38.738844	-77.241348	FY21	8001 Newington Forest Av.	Springfield, VA 22153	YES	PL29	South Run	VAN-A16R_SOH01A12	Yes	Yes
2101BR	FCPS0102	Public	10/9/2019	BIORETENTION	0.1700	0.0300	38.768038	-77.285354	FY21	9732 Ironmaster Dr.	Burke, VA 22015	YES	PL29	Pohick Creek	VAN-A16R_ZZZ29A00	No	No
2102VS	FCPS0102	Public	10/9/2019	VEGETATED SWALE	0.5100	0.0800	38.767988	-77.283256	FY21	9732 Ironmaster Dr.	Burke, VA 22015	YES	PL29	Pohick Creek	VAN-A16R_ZZZ29A00	No	Yes
2103VS	FCPS0102	Public	10/9/2019	VEGETATED SWALE	0.0000	1.4400	38.768302	-77.283506	FY21	9732 Ironmaster Dr.	Burke, VA 22015	YES	PL29	Pohick Creek	VAN-A16R_ZZZ29A00	No	Yes
2104BR	FCPS0104	Public	9/25/2019	BIORETENTION	0.0000	0.4000	38.767732	-77.073893	FY21	6925 University Dr.	Alexandria, VA 22307	YES	PL28	Paul Springs Branch	VAN-A14R_PAU01A04	Yes	No
2105BR	FCPS0104	Public	9/25/2019	BIORETENTION	0.0700	0.0300	38.766883	-77.074001	FY21	6925 University Dr.	Alexandria, VA 22307	YES	PL28	Paul Springs Branch	VAN-A14R_PAU01A04	Yes	No
2106VS	FCPS0104	Public	9/25/2019	VEGETATED SWALE	0.1000	0.0300	38.766937	-77.073248	FY21	6925 University Dr.	Alexandria, VA 22307	YES	PL28	Paul Springs Branch	VAN-A14R_PAU01A04	Yes	No

Facility ID	Site ID	Maintained By	Date Installed	BMP Name	Impervious Acres Treated (ac)	Pervious Acres Treated (ac)	Latitude	Longitude	Inspection Date/Year	Facility Address	Facility City/State/Zip	PMA	HUC6	Receiving Water Name	Receiving Water ID	Receiving Water Impaired	Facility Discharges to Fairfax County's MS4?
2107VS	FCPS0104	Public	9/25/2019	VEGETATED SWALE	0.0400	0.2000	38.766503	-77.072893	FY21	6925 University Dr.	Alexandria, VA 22307	YES	PL28	Paul Springs Branch	VAN-A14R_PAU01A04	Yes	No
2108VS	FCPS0104	Public	9/25/2019	VEGETATED SWALE	0.0400	0.1000	38.766438	-77.073133	FY21	6925 University Dr.	Alexandria, VA 22307	YES	PL28	Paul Springs Branch	VAN-A14R_PAU01A04	Yes	No
2109PP	FCPS0104	Public	9/25/2019	PERMEABLE PAVEMENT	0.1200	0.0400	38.766384	-77.073133	FY21	6925 University Dr.	Alexandria, VA 22307	YES	PL28	Paul Springs Branch	VAN-A14R_PAU01A04	Yes	No
2110RF	FCPS0104	Public	9/25/2019	REFORESTATION	0.0000	0.0860	38.767269	-77.07464	FY21	6925 University Dr.	Alexandria, VA 22307	YES	PL28	Paul Springs Branch	VAN-A14R_PAU01A04	Yes	No
2111RF	FCPS0104	Public	9/25/2019	REFORESTATION	0.0000	0.0570	38.766696	-77.074867	FY21	6925 University Dr.	Alexandria, VA 22307	YES	PL28	Paul Springs Branch	VAN-A14R_PAU01A04	Yes	No
2112RF	FCPS0104	Public	9/25/2019	REFORESTATION	0.0000	0.0880	38.767493	-77.072481	FY21	6925 University Dr.	Alexandria, VA 22307	YES	PL28	Paul Springs Branch	VAN-A14R_PAU01A04	Yes	No
2113TR	FCPS0105	Public	9/25/2019	INFILTRATION PRACTICE	1.9900	0.0200	38.934195	-77.339064	FY21	11400 South Lakes Dr.	Reston, VA 20191	YES	PL22	Snakeden Branch	VAN-A11R_SNA02A02	No	Yes
2114DP	1313S	Public	3/18/2020	EXTENDED DETENTION DRY POND	10.3000	20.6700	38.701684	-77.234766	FY22	Windermere Hill Dr.:behind 8376 Broughton Craggs Ln.	Lorton, VA 22079	NO	PL48	Giles Run	VAN-A25R_GIL01A04	Yes	Yes
2116DP	1312S	Public	11/27/2019	DRY POND (PEAK SHAVER)	2.4100	9.6400	38.884627	-77.350935	11/26/2019	adjacent to 3226 History Dr.	Oakton, VA 22124	NO	PL22	Difficult Run	VAN-A11R_ZZZ22A00	No	Yes
2117DP	FCPA0132	Public	2/20/2020	EXTENDED DETENTION DRY POND	43.0000	13.7200	38.711209	-77.240551	FY22	left of 8980 Fascination Ct: thru iron fence gate and turn LEFT on acce	Lorton, VA 22079	NO	PL48	Occoquan River/Belmont Bay	VAN-A25R_ZZZ48A00	No	No
2118WP	FCPA0132	Public	2/20/2020	WET POND	23.3000	19.1300	38.713899	-77.240699	FY22	left of 8980 Fascination Ct: thru iron fence gate, & turn RIGHT on acce	Lorton, VA 22079	NO	PL48	Occoquan River/Belmont Bay	VAN-A25R_ZZZ48A00	No	No
2120DP	1205S	Public	4/27/2020	DRY POND (PEAK SHAVER)	7.5000	27.9000	38.795137	-77.10838	FY22	nominal address, currently on foot only: 250ft north of 4400 Churchmar	Alexandria, VA 22310	NO	PL26	Cameron Run	VAN-A13R_ZZZ26A00	No	Yes
BR0782	FCPS0096	Public	7/26/2019	BIORETENTION	0.1300	0.0800	38.918911	-77.204525	FY21	7500 Magarity Rd.	Falls Church, VA 22043	YES	PL24	Potomac River/Nichols Run/Scott Run	VAN-A11R_ZZZ23A00	No	No
BR0783	FCPS0096	Public	7/26/2019	BIORETENTION	0.3700	0.0900	38.91964	-77.203495	FY21	7500 Magarity Rd.	Falls Church, VA 22043	YES	PL24	Potomac River/Nichols Run/Scott Run	VAN-A11R_ZZZ23A00	No	No
BR0813	FCPS0054	Public	9/23/2019	BIORETENTION	0.6400	0.3600	38.724375	-77.05535	FY21	1205 Waynewood Bv.	Alexandria, VA 22308	YES	PL28	Potomac River	VAN-A14E_POT01A08	Yes	Yes
BR0815	FCPS0099	Public	10/10/2019	BIORETENTION	1.0200	0.4200	38.822505	-77.167216	FY21	6560 Braddock Rd.	Alexandria, VA 22312	YES	PL26	Cameron Run	VAN-A13R_ZZZ26A00	No	Yes
BR0860	FCPA0116	Public	5/19/2020	BIORETENTION	0.7300	0.0000	38.943138	-77.156705	FY21	6319 Georgetown Pi.	McLean, VA 22101	YES	PL24	Potomac River/Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
MB0302	FCPS0103	Public	9/24/2019	MANUFACTURED BMP (PROPRIETARY)/CDS	1.0100	0.7300	38.939846	-77.319161	FY21	10824 Cross School Rd.	Reston, VA 20191	YES	PL22	Snakeden Branch	VAN-A11R_SNA01A02	Yes	No
MB0303	FCPS0103	Public	9/24/2019	MANUFACTURED BMP (PROPRIETARY)/CDS	0.0300	0.9500	38.939983	-77.318843	FY21	10824 Cross School Rd.	Reston, VA 20191	YES	PL22	Snakeden Branch	VAN-A11R_SNA01A02	Yes	No
MB0304	FCPS0105	Public	9/25/2019	MANUFACTURED BMP (PROPRIETARY)/STORMTECH	2.9500	1.7300	38.933945	-77.339038	FY21	11400 South Lakes Dr.	Reston, VA 20191	YES	PL22	Snakeden Branch	VAN-A11R_SNA02A02	No	Yes
MB0306	FCPS0107	Public	11/27/2019	MANUFACTURED BMP (PROPRIETARY)/BAYFILTER	4.6500	3.0500	38.950665	-77.165939	FY21	6520 Georgetown Pi.	McLean, VA 22101	YES	PL23	Turkey Run	VAN-A11R_TUY01A06	Yes	Yes
PP0044	FCPS0054	Public	9/23/2019	PERMEABLE PAVEMENT	0.2300	0.0000	38.724423	-77.05688	FY21	1205 Waynewood Bv.	Alexandria, VA 22308	YES	PL28	Potomac River/Little Hunting Creek	VAN-A14R_ZZZ28A00	No	Yes
PP0045	FCPS0054	Public	9/23/2019	PERMEABLE PAVEMENT	0.1100	0.0700	38.724639	-77.05663	FY21	1205 Waynewood Bv.	Alexandria, VA 22308	YES	PL28	Potomac River	VAN-A14E_POT01A08	Yes	Yes
PP0046	FCPS0054	Public	9/23/2019	PERMEABLE PAVEMENT	0.1500	0.0200	38.724733	-77.056735	FY21	1205 Waynewood Bv.	Alexandria, VA 22308	YES	PL28	Potomac River	VAN-A14E_POT01A08	Yes	Yes
PP0047	FCPS0054	Public	9/23/2019	PERMEABLE PAVEMENT	0.1100	0.0100	38.724757	-77.056794	FY21	1205 Waynewood Bv.	Alexandria, VA 22308	YES	PL28	Potomac River	VAN-A14E_POT01A08	Yes	Yes
PP0048	FCPS0054	Public	9/23/2019	PERMEABLE PAVEMENT	0.0400	0.0000	38.724744	-77.056947	FY21	1205 Waynewood Bv.	Alexandria, VA 22308	YES	PL28	Potomac River	VAN-A14E_POT01A08	Yes	Yes
PP0049	FCPS0054	Public	9/23/2019	PERMEABLE PAVEMENT	0.1400	0.0400	38.725118	-77.056633	FY21	1205 Waynewood Bv.	Alexandria, VA 22308	YES	PL28	Potomac River	VAN-A14E_POT01A08	Yes	No
PP0050	FCPS0054	Public	9/23/2019	PERMEABLE PAVEMENT	0.1700	0.1300	38.725477	-77.056465	FY21	1205 Waynewood Bv.	Alexandria, VA 22308	YES	PL28	Potomac River	VAN-A14E_POT01A08	Yes	No
PP0051	FCPS0054	Public	9/23/2019	PERMEABLE PAVEMENT	0.0600	0.0000	38.725203	-77.056742	FY21	1205 Waynewood Bv.	Alexandria, VA 22308	YES	PL28	Potomac River	VAN-A14E_POT01A08	Yes	Yes
PP0052	FCPS0054	Public	9/23/2019	PERMEABLE PAVEMENT	0.1000	0.0000	38.725373	-77.056667	FY21	1205 Waynewood Bv.	Alexandria, VA 22308	YES	PL28	Potomac River	VAN-A14E_POT01A08	Yes	Yes
PP0053	FCPS0054	Public	9/23/2019	PERMEABLE PAVEMENT	0.0800	0.0000	38.725642	-77.056539	FY21	1205 Waynewood Bv.	Alexandria, VA 22308	YES	PL28	Potomac River	VAN-A14E_POT01A08	Yes	Yes
PP0054	FCPS0054	Public	9/23/2019	PERMEABLE PAVEMENT	0.0700	0.2300	38.724608	-77.055228	FY21	1205 Waynewood Bv.	Alexandria, VA 22308	YES	PL28	Potomac River	VAN-A14E_POT01A08	Yes	Yes
PP0055	FCPS0098	Public	9/24/2019	PERMEABLE PAVEMENT	0.2600	0.4200	38.93696	-77.342838	FY21	11411 Ridge Heights Rd.	Reston, VA 20191	YES	PL22	Difficult Run	VAN-A11R_ZZZ22A00	No	Yes
PP0056	FCPS0098	Public	9/24/2019	PERMEABLE PAVEMENT	0.7000	0.2700	38.935512	-77.343632	FY21	11411 Ridge Heights Rd.	Reston, VA 20191	YES	PL22	Difficult Run	VAN-A11R_ZZZ22A00	No	No
PP0057	FCPS0098	Public	9/24/2019	PERMEABLE PAVEMENT	0.4200	0.1600	38.935386	-77.342885	FY21	11411 Ridge Heights Rd.	Reston, VA 20191	YES	PL22	Difficult Run	VAN-A11R_ZZZ22A00	No	No
PP0058	FCPS0103	Public	9/24/2019	PERMEABLE PAVEMENT	0.1300	0.0800	38.941327	-77.321258	FY21	10824 Cross School Rd.	Reston, VA 20191	YES	PL22	Difficult Run	VAN-A11R_ZZZ22A00	No	Yes
PP0059	FCPS0103	Public	9/24/2019	PERMEABLE PAVEMENT	0.3700	0.1800	38.941387	-77.320729	FY21	10824 Cross School Rd.	Reston, VA 20191	YES	PL22	Snakeden Branch	VAN-A11R_SNA01A02	Yes	Yes
PP0062	FCPS0109	Public	2/5/2020	PERMEABLE PAVEMENT	0.1400	0.1900	38.933035	-77.338427	FY21	11400 South Lake Dr.	Reston, VA 20191	NO	PL22	Snakeden Branch	VAN-A11R_SNA02A02	No	Yes
PP0063	FCPS0109	Public	2/5/2020	PERMEABLE PAVEMENT	0.4530	0.0370	38.933052	-77.338555	FY21	11400 South Lake Dr.	Reston, VA 20191	NO	PL22	Snakeden Branch	VAN-A11R_SNA02A02	No	Yes
PP0064	FCPS0109	Public	2/5/2020	PERMEABLE PAVEMENT	0.0920	0.0180	38.932358	-77.338558	FY21	11400 South Lake Dr.	Reston, VA 20191	NO	PL22	Snakeden Branch	VAN-A11R_SNA02A02	No	Yes
PP0065	FCPS0109	Public	2/5/2020	PERMEABLE PAVEMENT	0.0200	0.3000	38.931835	-77.338596	FY21	11400 South Lake Dr.	Reston, VA 20191	NO	PL22	Snakeden Branch	VAN-A11R_SNA02A02	No	Yes
PP0066	FCPS0109	Public	2/5/2020	PERMEABLE PAVEMENT	0.5600	0.2000	38.932074	-77.341191	FY21	11400 South Lake Dr.	Reston, VA 20191	NO	PL22	Difficult Run	VAN-A11R_ZZZ22A00	No	Yes
PP0074	FCPA0133	Public	5/19/2020	PERMEABLE PAVEMENT	1.5400	0.0000	38.876641	-77.17031	FY21	6559 Maine Bv.	Falls Church, VA 22042	YES	PL26	Tripps Run	VAN-A13R_TRI01A00	Yes	Yes
RF0040	FCPS0095	Public	11/4/2019	REFORESTATION	0.0000	0.3600	38.803753	-77.22239	FY21	5411 Nutting Dr.	Springfield, VA 22151	YES	PL30	Accotink Creek	VAN-A15L_ACO01A10	Yes	Yes
RF0041	FCPS0095	Public	11/5/2019	REFORESTATION	0.0000	0.1800	38.802386	-77.223698	FY21	5411 Nutting Dr.	Springfield, VA 22151	YES	PL30	Accotink Creek	VAN-A15L_ACO01A10	Yes	Yes
RF0042	FCPS0099	Public	10/10/2019	REFORESTATION	0.0000	0.2600	38.817488	-77.16746	FY21	6560 Braddock Rd.	Alexandria, VA 22312	YES	PL26	Indian Run	VAN-A13R_INA01A06	Yes	Yes
RF0043	FCPS0099	Public	10/10/2019	REFORESTATION	0.0000	0.1700	38.821559	-77.169954	FY21	6560 Braddock Rd.	Alexandria, VA 22312	YES	PL26	Indian Run	VAN-A13R_INA01A06	Yes	Yes
RF0044	FCPS0099	Public	10/10/2019	REFORESTATION	0.0000	0.1300	38.821993	-77.169181	FY21	6560 Braddock Rd.	Alexandria, VA 22312	YES	PL26	Indian Run	VAN-A13R_INA01A06	Yes	Yes
RF0045	FCPS0099	Public	10/10/2019	REFORESTATION	0.0000	0.3500	38.821994	-77.16824	FY21	6560 Braddock Rd.	Alexandria, VA 22312	YES	PL26	Cameron Run	VAN-A13R_ZZZ26A00	No	Yes
RF0046	FCPS0099	Public	10/10/2019	REFORESTATION	0.0000	0.1500	38.822026	-77.166046	FY21	6560 Braddock Rd.	Alexandria, VA 22312	YES	PL26	Cameron Run	VAN-A13R_ZZZ26A00	No	Yes
RF0047	FCPS0104	Public	9/25/2019	REFORESTATION	0.0000	0.5400	38.767946	-77.074045	FY21	6925 University Dr.	Alexandria, VA 22307	YES	PL28	Paul Springs Branch	VAN-A14R_PAU01A04	Yes	No
RF0048	FCPS0104	Public	9/25/2019	REFORESTATION	0.0000	0.1600	38.767608	-77.072861	FY21	6925 University Dr.	Alexandria, VA 22307	YES	PL28	Paul Springs Branch	VAN-A14R_PAU01A04	Yes	No
RF0049	FCPS0107	Public	11/27/2019	REFORESTATION	0.0000	0.4900	38.953269	-77.16657	FY21	6520 Georgetown Pi.	McLean, VA 22101	YES	PL23	Turkey Run	VAN-A11R_TUY01A06	Yes	Yes
SF0278	FCPS0004	Public	8/5/2019	FILTERING PRACTICE/DELAWARE SAND FILTER	0.4000	0.0000	38.822908	-77.216453	12/5/2019	7825 Heritage Dr.	Annandale, VA 22003	NO	PL30	Accotink Creek	VAN-A15R_ACO02A00	Yes	Yes
ST0003	FCPS0107	Public	11/27/2019	FILTERING PRACTICE/SYNTHETIC TURF	0.9500	1.8300	38.951725	-77.166153	FY21	6520 Georgetown Pl.	McLean, VA 22101	NO	PL23	Turkey Run	VAN-A11R_TUY01A06	Yes	Yes

Facility ID	Site ID	Maintained By	Date Installed	BMP Name	Impervious Acres Treated (ac)	Pervious Acres Treated (ac)	Latitude	Longitude	Inspection Date/Year	Facility Address	Facility City/State/Zip	PMA	HUC6	Receiving Water Name	Receiving Water ID	Receiving Water Impaired	Facility Discharges to Fairfax County's MS4?
TF0466	FCPS0063	Public	7/18/2019	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.1900	0.0000	38.726953	-77.118163	FY21	8505 Highland Ln.	Alexandria, VA 22309	YES	PL27	Dogue Creek	VAN-A14R_ZZZ27A00	No	No
TF0467	FCPS0095	Public	7/19/2019	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.3000	0.0600	38.803611	-77.224067	FY21	5411 Nutting Dr.	Springfield, VA 22151	YES	PL30	Accotink Creek	VAN-A15R_ACO02A00	Yes	No
TF0468	FCPS0095	Public	7/19/2019	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.1900	0.0000	38.802476	-77.223252	FY21	5411 Nutting Dr.	Springfield, VA 22151	YES	PL30	Accotink Creek	VAN-A15L_ACO01A10	Yes	Yes
TF0469	FCPS0095	Public	7/19/2019	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.1200	0.0900	38.803085	-77.223927	FY21	5411 Nutting Dr.	Springfield, VA 22151	YES	PL30	Accotink Creek	VAN-A15R_ACO02A00	Yes	No
TF0470	FCPS0095	Public	7/19/2019	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.2200	0.1100	38.803898	-77.224029	FY21	5411 Nutting Dr.	Springfield, VA 22151	YES	PL30	Accotink Creek	VAN-A15R_ACO02A00	Yes	No
TF0471	FCPS0097	Public	8/5/2019	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.3700	0.0700	38.80155	-77.20883	FY21	7602 Heming Ct.	Springfield, VA 22151	YES	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	No
TF0472	FCPS0097	Public	8/6/2019	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.0900	0.0200	38.801462	-77.208348	FY21	7602 Heming Ct.	Springfield, VA 22151	YES	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	No
TF0473	FCPS0097	Public	8/6/2019	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.0850	0.0150	38.8015	-77.208306	FY21	7602 Heming Ct.	Springfield, VA 22151	YES	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	No
TF0474	FCPS0054	Public	9/24/2019	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.1500	0.0900	38.725266	-77.055231	FY21	1205 Waynewood Bv.	Alexandria, VA 22308	YES	PL28	Potomac River	VAN-A14E_POT01A08	Yes	Yes
TF0475	FCPS0054	Public	9/24/2019	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.1200	0.1000	38.724742	-77.056459	FY21	1205 Waynewood Bv.	Alexandria, VA 22308	YES	PL28	Potomac River	VAN-A14E_POT01A08	Yes	Yes
TF0476	FCPS0098	Public	9/24/2019	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.1200	0.0800	38.937434	-77.343545	FY21	11411 Ridge Heights Rd.	Reston, VA 20191	YES	PL22	Difficult Run	VAN-A11R_ZZZ22A00	No	Yes
TF0477	FCPS0098	Public	9/24/2019	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.1200	0.0800	38.937429	-77.343457	FY21	11411 Ridge Heights Rd.	Reston, VA 20191	YES	PL22	Difficult Run	VAN-A11R_ZZZ22A00	No	Yes
TF0478	FCPS0098	Public	9/24/2019	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.1200	0.0800	38.936854	-77.343259	FY21	11411 Ridge Heights Rd.	Reston, VA 20191	YES	PL22	Difficult Run	VAN-A11R_ZZZ22A00	No	Yes
TF0479	FCPS0098	Public	9/24/2019	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.1200	0.0800	38.936898	-77.34332	FY21	11411 Ridge Heights Rd.	Reston, VA 20191	YES	PL22	Difficult Run	VAN-A11R_ZZZ22A00	No	Yes
TF0480	FCPS0099	Public	10/10/2019	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.1600	0.0300	38.816787	-77.16861	FY21	6560 Braddock Rd.	Alexandria, VA 22312	YES	PL26	Indian Run	VAN-A13R_INA01A06	Yes	No
TF0481	FCPS0099	Public	10/10/2019	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.1500	0.0500	38.817124	-77.168834	FY21	6560 Braddock Rd.	Alexandria, VA 22312	YES	PL26	Indian Run	VAN-A13R_INA01A06	Yes	No
TF0482	FCPS0099	Public	10/10/2019	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.2600	0.1800	38.816981	-77.168148	FY21	6560 Braddock Rd.	Alexandria, VA 22312	YES	PL26	Indian Run	VAN-A13R_INA01A06	Yes	No
TF0483	FCPS0099	Public	10/10/2019	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.1400	0.0700	38.817645	-77.168116	FY21	6560 Braddock Rd.	Alexandria, VA 22312	YES	PL26	Indian Run	VAN-A13R_INA01A06	Yes	Yes
TF0484	FCPS0099	Public	10/10/2019	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.1200	0.0600	38.8177	-77.16806	FY21	6560 Braddock Rd.	Alexandria, VA 22312	YES	PL26	Indian Run	VAN-A13R_INA01A06	Yes	Yes
TF0485	FCPS0099	Public	10/11/2019	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.1650	0.0150	38.818189	-77.167577	FY21	6560 Braddock Rd.	Alexandria, VA 22312	YES	PL26	Indian Run	VAN-A13R_INA01A06	Yes	Yes
TF0486	FCPS0099	Public	10/10/2019	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.3200	0.0300	38.818194	-77.167316	FY21	6560 Braddock Rd.	Alexandria, VA 22312	YES	PL26	Indian Run	VAN-A13R_INA01A06	Yes	Yes
TF0487	FCPS0099	Public	10/10/2019	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.1450	0.0150	38.818262	-77.167266	FY21	6560 Braddock Rd.	Alexandria, VA 22312	YES	PL26	Indian Run	VAN-A13R_INA01A06	Yes	Yes
TF0488	FCPS0099	Public	10/10/2019	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.3100	0.0300	38.818662	-77.167144	FY21	6560 Braddock Rd.	Alexandria, VA 22312	YES	PL26	Indian Run	VAN-A13R_INA01A06	Yes	Yes
TF0489	FCPS0099	Public	10/10/2019	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.3300	0.1100	38.81935	-77.168108	FY21	6560 Braddock Rd.	Alexandria, VA 22312	YES	PL26	Indian Run	VAN-A13R_INA01A06	Yes	Yes
TF0490	FCPS0099	Public	10/10/2019	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.3650	0.0350	38.819102	-77.170054	FY21	6560 Braddock Rd.	Alexandria, VA 22312	YES	PL26	Indian Run	VAN-A13R_INA01A06	Yes	No
TF0491	FCPS0099	Public	10/10/2019	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.3950	0.0350	38.819656	-77.169415	FY21	6560 Braddock Rd.	Alexandria, VA 22312	YES	PL26	Indian Run	VAN-A13R_INA01A06	Yes	No
TF0492	FCPS0099	Public	10/10/2019	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.2000	0.1000	38.819031	-77.167231	FY21	6560 Braddock Rd.	Alexandria, VA 22312	YES	PL26	Indian Run	VAN-A13R_INA01A06	Yes	Yes
TF0493	FCPS0099	Public	10/10/2019	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.1350	0.1350	38.819149	-77.167063	FY21	6560 Braddock Rd.	Alexandria, VA 22312	YES	PL26	Indian Run	VAN-A13R_INA01A06	Yes	Yes
TF0494	FCPS0099	Public	10/10/2019	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.2150	0.2150	38.819703	-77.167261	FY21	6560 Braddock Rd.	Alexandria, VA 22312	YES	PL26	Indian Run	VAN-A13R_INA01A06	Yes	Yes
TF0495	FCPS0099	Public	10/10/2019	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.3200	0.0300	38.82051	-77.167532	FY21	6560 Braddock Rd.	Alexandria, VA 22312	YES	PL26	Indian Run	VAN-A13R_INA01A06	Yes	Yes
TF0496	FCPS0099	Public	10/10/2019	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.2500	0.0200	38.82232	-77.166634	FY21	6560 Braddock Rd.	Alexandria, VA 22312	YES	PL26	Cameron Run	VAN-A13R_ZZZ26A00	No	Yes
TF0497	FCPS0099	Public	10/10/2019	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.1550	0.0150	38.822367	-77.166813	FY21	6560 Braddock Rd.	Alexandria, VA 22312	YES	PL26	Cameron Run	VAN-A13R_ZZZ26A00	No	Yes
TF0498	FCPS0099	Public	10/10/2019	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.1400	0.0100	38.820531	-77.167314	FY21	6560 Braddock Rd.	Alexandria, VA 22312	YES	PL26	Indian Run	VAN-A13R_INA01A06	Yes	Yes
TF0499	FCPS0099	Public	10/11/2019	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.1900	0.0500	38.821851	-77.167013	FY21	6560 Braddock Rd.	Alexandria, VA 22312	YES	PL26	Cameron Run	VAN-A13R_ZZZ26A00	No	Yes
TF0500	FCPS0099	Public	10/10/2019	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.1850	0.0350	38.819318	-77.170046	FY21	6560 Braddock Rd.	Alexandria, VA 22312	YES	PL26	Indian Run	VAN-A13R_INA01A06	Yes	No
TF0501	FCPS0099	Public	10/10/2019	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.2800	0.0000	38.817603	-77.169443	FY21	6560 Braddock Rd.	Alexandria, VA 22312	YES	PL26	Indian Run	VAN-A13R_INA01A06	Yes	No
TF0502	FCPS0100	Public	10/4/2019	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.4400	0.0000	38.728948	-77.068512	FY21	8484 Riverside Rd.	Alexandria, VA 22308	YES	PL28	Potomac River/Little Hunting Creek	VAN-A14R_ZZZ28A00	No	No
TF0503	FCPS0100	Public	10/4/2019	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.4000	0.0400	38.728882	-77.068254	FY21	8484 Riverside Rd.	Alexandria, VA 22308	YES	PL28	Potomac River/Little Hunting Creek	VAN-A14R_ZZZ28A00	No	No
TF0504	FCPS0100	Public	10/4/2019	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.1900	0.0300	38.728491	-77.067949	FY21	8484 Riverside Rd.	Alexandria, VA 22308	YES	PL28	Potomac River/Little Hunting Creek	VAN-A14R_ZZZ28A00	No	Yes
TF0505	FCPS0100	Public	10/4/2019	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.0700	0.0200	38.728385	-77.068055	FY21	8484 Riverside Rd.	Alexandria, VA 22308	YES	PL28	Potomac River/Little Hunting Creek	VAN-A14R_ZZZ28A00	No	Yes
TF0506	FCPS0100	Public	10/4/2019	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.1800	0.1300	38.728161	-77.068063	FY21	8484 Riverside Rd.	Alexandria, VA 22308	YES	PL28	Potomac River/Little Hunting Creek	VAN-A14R_ZZZ28A00	No	Yes
TF0507	FCPS0104	Public	9/25/2019	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.3900	0.0400	38.76668	-77.07349	FY21	6925 University Dr.	Alexandria, VA 22307	YES	PL28	Paul Springs Branch	VAN-A14R_PAU01A04	Yes	No
TF0508	FCPS0104	Public	9/25/2019	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.1200	0.0200	38.766397	-77.073403	FY21	6925 University Dr.	Alexandria, VA 22307	YES	PL28	Paul Springs Branch	VAN-A14R_PAU01A04	Yes	No
TF0509	FCPS0104	Public	9/25/2019	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.3300	0.0000	38.767667	-77.074394	FY21	6925 University Dr.	Alexandria, VA 22307	YES	PL28	Paul Springs Branch	VAN-A14R_PAU01A04	Yes	No
TF0510	FCPS0104	Public	9/25/2019	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.2950	0.0250	38.767525	-77.074495	FY21	6925 University Dr.	Alexandria, VA 22307	YES	PL28	Paul Springs Branch	VAN-A14R_PAU01A04	Yes	No
TF0511	FCPS0104	Public	9/25/2019	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.1100	0.1400	38.766306	-77.074575	FY21	6925 University Dr.	Alexandria, VA 22307	YES	PL28	Paul Springs Branch	VAN-A14R_PAU01A04	Yes	No
TF0513	FCPS0106	Public	11/5/2019	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.1600	0.0300	38.749688	-77.071357	FY21	2310 Nordok Pl.	Alexandria, VA 22306	YES	PL28	Potomac River/Little Hunting Creek	VAN-A14R_ZZZ28A00	No	Yes
TF0514	FCPS0106	Public	11/5/2019	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.1000	0.3400	38.750059	-77.07039	FY21	2310 Nordok Pl.	Alexandria, VA 22306	YES	PL28	Potomac River/Little Hunting Creek	VAN-A14R_ZZZ28A00	No	Yes
TF0515	FCPS0106	Public	11/5/2019	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.0900	0.2900	38.750411	-77.070579	FY21	2310 Nordok Pl.	Alexandria, VA 22306	YES	PL28	Potomac River/Little Hunting Creek	VAN-A14R_ZZZ28A00	No	Yes
TF0520	FCPS0109	Public	2/5/2020	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.4100	0.1800	38.93229	-77.341771	FY21	11400 South Lake Dr.	Reston, VA 20191	NO	PL22	Difficult Run	VAN-A11R_ZZZ22A00	No	Yes
TF0521	FCPS0109	Public	2/5/2020	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.1600	0.0100	38.932103	-77.341993	FY21	11400 South Lake Dr.	Reston, VA 20191	NO	PL22	Difficult Run	VAN-A11R_ZZZ22A00	No	Yes
TF0522	FCPS0109	Public	2/5/2020	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.1600	0.0300	38.931742	-77.341956	FY21	11400 South Lake Dr.	Reston, VA 20191	NO	PL22	Difficult Run	VAN-A11R_ZZZ22A00	No	Yes
TF0523	FCPS0109	Public	2/5/2020	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.1850	0.0350	38.931743	-77.341555	FY21	11400 South Lake Dr.	Reston, VA 20191	NO	PL22	Difficult Run	VAN-A11R_ZZZ22A00	No	Yes
TF0524	FCPS0109	Public	2/5/2020	MANUFACTURED BMP (PROPRIETARY)/FILTERRA	0.2500	0.0100	38.931735	-77.341192	FY21	11400 South Lake Dr.	Reston, VA 20191	NO	PL22	Difficult Run	VAN-A11R_ZZZ22A00	No	No
TR1618	FCPS0096	Public	7/26/2019	INFILTRATION PRACTICE	2.2800	0.7700	38.919714	-77.20587	11/11/2019	7500 Magarity Rd.	Falls Church, VA 22043	YES	PL23	Potomac River/Nichols Run/Scott Run	VAN-A11R_ZZZ23A00	No	Yes

Facility ID	Site ID	Maintained By	Date Installed	BMP Name	Impervious Acres Treated (ac)	Pervious Acres Treated (ac)	Latitude	Longitude	Inspection Date/Year	Facility Address	Facility City/State/Zip	PMA	HUC6	Receiving Water Name	Receiving Water ID	Receiving Water Impaired	Facility Discharges to Fairfax County's MS4?
TR1652	FCPA0130	Public	10/4/2019	INFILTRATION PRACTICE	0.3800	0.1200	38.841397	-77.194244	FY21	behind 3813 Kendale Rd.	Annandale, VA 22003	NO	PL26	Cameron Run	VAN-A13R_ZZZ26A00	No	Yes
TR1656	FCPS0099	Public	10/11/2019	INFILTRATION PRACTICE	0.2300	0.0000	38.821191	-77.168875	FY21	6560 Braddock Rd.	Alexandria, VA 22312	YES	PL26	Indian Run	VAN-A13R_INA01A06	Yes	Yes
TR1657	FCPS0099	Public	10/11/2019	INFILTRATION PRACTICE	0.2300	0.0000	38.821716	-77.168734	FY21	6560 Braddock Rd.	Alexandria, VA 22312	YES	PL26	Indian Run	VAN-A13R_INA01A06	Yes	Yes
TR1658	FCPS0103	Public	9/24/2019	INFILTRATION PRACTICE	1.0000	1.7200	38.939879	-77.318965	FY21	10824 Cross School Rd.	Reston, VA 20191	YES	PL22	Snakeden Branch	VAN-A11R_SNA01A02	Yes	No
TR1706	FCPA0133	Public	5/19/2020	INFILTRATION PRACTICE	0.5150	0.0000	38.876905	-77.170598	FY21	6559 Maine Bv.	Falls Church, VA 22042	YES	PL26	Tripps Run	VAN-A13R_TRI01A00	Yes	Yes
TR1707	FCPA0133	Public	5/19/2020	INFILTRATION PRACTICE	0.5150	0.0000	38.876868	-77.170316	FY21	6559 Maine Bv.	Falls Church, VA 22042	YES	PL26	Tripps Run	VAN-A13R_TRI01A00	Yes	Yes
TR1708	FCPA0133	Public	5/19/2020	INFILTRATION PRACTICE	0.5130	0.0000	38.876816	-77.169892	FY21	6559 Maine Bv.	Falls Church, VA 22042	YES	PL26	Tripps Run	VAN-A13R_TRI01A00	Yes	Yes
UG0742	FCPS0095	Public	7/19/2019	UNDERGROUND DETENTION	0.7800	0.0100	38.802523	-77.223509	12/12/2019	5411 Nutting Dr.	Springfield, VA 22151	YES	PL30	Accotink Creek	VAN-A15L_ACO01A10	Yes	Yes
UG0743	FCPS0004	Public	8/5/2019	UNDERGROUND DETENTION	1.8700	0.7800	38.821847	-77.215712	12/5/2019	7825 Heritage Dr.	Annandale, VA 22003	NO	PL30	Accotink Creek	VAN-A15R_ACO02A00	Yes	Yes
UG0744	FCPS0098	Public	9/24/2019	UNDERGROUND DETENTION	1.6000	0.6800	38.936615	-77.343702	FY21	11411 Ridge Heights Rd.	Reston, VA 20191	YES	PL22	Difficult Run	VAN-A11R_ZZZ22A00	No	Yes
UG0745	FCPS0098	Public	9/24/2019	UNDERGROUND DETENTION	1.4500	0.5200	38.935718	-77.342542	FY21	11411 Ridge Heights Rd.	Reston, VA 20191	YES	PL22	Difficult Run	VAN-A11R_ZZZ22A00	No	No
UG0746	FCPS0099	Public	10/11/2019	UNDERGROUND DETENTION	2.2000	0.4100	38.817641	-77.167996	FY21	6560 Braddock Rd.	Alexandria, VA 22312	YES	PL26	Indian Run	VAN-A13R_INA01A06	Yes	Yes
UG0747	FCPS0100	Public	10/4/2019	UNDERGROUND DETENTION	2.7300	3.2900	38.728302	-77.067996	FY21	8484 Riverside Rd.	Alexandria, VA 22308	YES	PL28	Potomac River/Little Hunting Creek	VAN-A14R_ZZZ28A00	No	Yes
UG0748	FCPS0101	Public	10/7/2019	UNDERGROUND DETENTION	2.1700	0.5800	38.739126	-77.239225	FY21	8001 Newington Forest Av.	Springfield, VA 22153	YES	PL29	Pohick Creek	VAN-A16R_ZZZ29A00	No	Yes
UG0749	FCPS0102	Public	10/9/2019	UNDERGROUND DETENTION	1.9500	1.8400	38.768199	-77.283231	FY21	9732 Ironmaster Dr.	Burke, VA 22015	YES	PL29	Pohick Creek	VAN-A16R_ZZZ29A00	No	Yes
UG0750	FCPS0103	Public	9/24/2019	UNDERGROUND DETENTION	1.0100	0.7300	38.93979	-77.319683	FY21	10824 Cross School Rd.	Reston, VA 20191	YES	PL22	Snakeden Branch	VAN-A11R_SNA01A02	Yes	Yes
UG0751	FCPS0106	Public	11/5/2019	UNDERGROUND DETENTION	0.1200	1.3800	38.751019	-77.072865	FY21	2310 Nordok Pl.	Alexandria, VA 22306	NO	PL28	Potomac River/Little Hunting Creek	VAN-A14R_ZZZ28A00	No	No
UG0752	FCPS0106	Public	11/5/2019	UNDERGROUND DETENTION	2.0600	1.6500	38.74971	-77.071404	FY21	2310 Nordok Pl.	Alexandria, VA 22306	YES	PL28	Potomac River/Little Hunting Creek	VAN-A14R_ZZZ28A00	No	Yes
UG0753	FCPS0107	Public	11/27/2019	UNDERGROUND DETENTION	4.8500	3.3500	38.95079	-77.166246	FY21	6520 Georgetown Pi.	McLean, VA 22101	YES	PL23	Turkey Run	VAN-A11R_TUY01A06	Yes	Yes
UG0754	FCPS0064	Public	11/4/2019	UNDERGROUND DETENTION	4.9400	1.8200	38.779572	-77.134126	FY21	5801 Franconia Rd.	Alexandria, VA 22310	YES	PL27	Dogue Creek	VAN-A14R_ZZZ27A00	No	No
VS0044	FCPS0103	Public	9/24/2019	VEGETATED SWALE	0.1900	0.1400	38.941135	-77.320051	FY21	10824 Cross School Rd.	Reston, VA 20191	YES	PL22	Snakeden Branch	VAN-A11R_SNA01A02	Yes	Yes
WP0456	FCPA0129	Public	8/28/2019	WET POND	84.0000	254.0000	38.828152	-77.163808	FY22	near 6431 Elmdale Rd.	Alexandria, VA 22312	NO	PL26	Cameron Run	VAN-A13R_ZZZ26A00	No	Yes
WP0457	FCPA0129	Public	8/28/2019	WET POND	36.4500	50.5500	38.825852	-77.160357	FY22	6431 Elmdale Rd.	Alexandria, VA 22312	NO	PL26	Cameron Run	VAN-A13R_ZZZ26A00	No	No
WP0460	FCPS0108	Public	12/2/2019	WET POND	30.3000	36.7100	38.716402	-77.240019	FY22	8400 Lorton Rd.	Lorton, VA 22079	YES	PL48	Occoquan River/Belmont Bay	VAN-A25R_ZZZ48A00	No	Yes

Fairfax County 2020 MS4 Program Plan and Annual Report

Appendix R16

Chesapeake Bay TMDL Action Plan
Implementation Updates

VSMP Permit Number VA0088587
9-30-2020

Summary Table showing Cumulative Progress Towards Action Plan Pollutant Reductions

	Reductions Proposed from Approved Action Plan			Reductions Completed from Approved Action Plan				Remaining Reductions to Complete from Approved Action Plan			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)**	**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	-47.86	-1.63	-479.87					**6,906.81**	**664.52**	**772,500.27**
				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			
				Total	**5,779.64**	**554.36**	**682,376.15**				**Total**	**1,127.17**	**110.16**	**90,124.12**			
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	-362.65	-1.73	-2,217.50					**35,665.30**	**11,015.50**	**3,420,425.95**
				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			
				Total	**18,561.40**	**5,921.40**	**1,804,468.34**				**Total**	**17,103.90**	**5,094.10**	**1,615,957.61**			
All Structural Facilities 2006-2009	5,705.48	670.27	577,628.02	Action Plan	5,705.48	670.27	577,628.02	0.00	0.00	0.00					**5,705.48**	**670.27**	**577,628.02**
Redevelopment	0.00	0.00	0.00	Action Plan	0.00	0.00	0.00	0.00	0.00	0.00	2019 Annual Report	83.79	11.35	6,034.03	**177.30**	**24.61**	**13,751.44**
											2020 Annual Report	93.51	13.26	7,717.41			
											Total	**177.30**	**24.61**	**13,751.44**			
More Stringent Single Family Residential Standards	135.32	22.09	11,977.54	Action Plan	135.32	22.09	11,977.54	0.00	0.00	0.00	2017 Annual Report	106.35	16.16	8,132.78	**979.13**	**103.95**	**27,231.76**
											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			
											Total	**843.81**	**81.86**	**15,254.22**			
In-Lake Forebay Retrofits	6,615.89	391.88	156,038.24	Action Plan	4,289.43	254.50	99,156.00	0.00	0.00	0.00					**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	0.00	0.00	0.00	2017 Annual Report	201.60	0.00	0.00	**2,148.33**	**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			
											Total	**341.48**	**0.00**	**0.00**			
Off-Site Pollutant Reduction Credits	0.00	0.00	0.00	Action Plan	0.00	0.00	0.00	0.00	0.00	0.00	2020 Annual Report - Wastewater Credit Transfer[b]	**17,276.00**	**1,361.00**	**0.00**	**17,276.00**	**1361.00**	**0.00**

	Reductions Proposed from Approved Action Plan			Reductions Completed from Approved Action Plan				Remaining Reductions to Complete from Approved Action Plan			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)**	**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	0.00	0.00	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	0.00	0.00	0.00	2017 Annual Report	13.65	0.48	167.53	**202.16**	**12.15**	**5,645.84**
											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			
											Total	**141.86**	**8.98**	**3,899.27**			
Additional Means and Measures	0.00	0.00	0.00	Action Plan	0.00	0.00	0.00	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**	**-410.51**	**-3.36**	**-2,697.37**		**37,011.52**	**6,680.71**	**1,738,986.66**	**75,765.98**	**14,245.70**	**4,973,221.52**
											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 (April 1, 2020 - March 31, 2025)				**73,065.21**	**14,145.01**	**4,819,463.55**

[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 2019 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 # VA 0088587

Credits Transferred

Compliance Year: 2019

Delivered Total Nitrogen Credits: 17,276 lbs/yr

Delivered Total Phosphorus Credits: 1,361 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	Heather Ambrose
Typed or Printed Name	Typed or Printed Name
Charles P Boepple	Heather Ambrose
Signature	Signature
703-830-2200	703-324-5816
Phone Number	Phone Number
March 6, 2020	3/9/20
Date	Date

UPPER OCCOQUAN SERVICE AUTHORITY

WATER QUALITY CREDIT EXCHANGE AGREEMENT

ATTACHMENT A

Annual Water Quality Credit Transfer Form

Instructions: To be completed and executed by UOSA and delivered to Jurisdictions of this Agreement on or before each April 1 immediately following the calendar year of credit generation by UOSA

By execution and delivery of this Annual Credit Transfer Form, UOSA transfers the following water quality credits in the amounts specified to the Jurisdiction in accordance with, and for the specific and limited purposes of, the Upper Occoquan Service Authority Water Quality Credit Exchange Agreement.

Transferor: Upper Occoquan Service Authority

Transferee (MS4): See Below

Calendar Year Credits Generated: 2019

Date Credits Transfer: March 6, 2020

MS4	TN (lbs/yr)	TP (lbs/yr)	TSS (lbs/yr)
City of Manassas	0	0	0
City of Manassas Park	2,278	179	0
Prince William County	15,475	1,219	0
Fairfax County	17,276	1,361	0

Signed (for Transferor): Charles P Boepple

Name (Print): Charles P. Boepple

Title: UOSA Executive Director

Structural Retrofits for TMDL Compliance July 1, 2018 - June 30, 2019

Updated: 9/14/2020

Structural Retrofits

All Action Plan Projects were completed by June 30, 2017 as reported in the 2017 Annual Report

Projects in Addition to Those Reported in the Chesapeake Bay TMDL Action Plan Completed July 1, 2019 to June 30, 2020 (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																			
Bailey's Shelter Vegetated Roof	10/31/2019	-77.129159	38.849110	Vegetated Roof	0.03	0.03	-	$59,598	0.34	0.04	29.83	CBP Retrofits Expert Panel, RR curve, for 3.1 in runoff treated	100%	0.05	0.01	7.03	0.29	0.03	22.80
Lorton Athletic Fields @ Lower Potomac Ballpark	3/1/2020	-77.210964	38.698586	Constructed Wetland	29.50	8.20	21.30	$824,000	71.41	7.00	5,406.08	CBP Retrofits Expert Panel, ST curve, for 0.3 in runoff treated	2%	0.28	0.02	12.18	71.13	6.98	5,393.90
Luther Jackson IS	12/6/2019	-77.230507	38.868246	Infiltration	0.45	0.41	0.04	$149,300	5.85	0.58	462.91	CBEE Infiltration w/o sand	0%	-	-	-	5.85	0.58	462.91
		-77.231643	38.866938	Extended Detention Pond	43.39	34.93	8.46	$873,500	209.81	29.37	26,395.83	CBP Retrofits Expert Panel, ST curve, for 0.7 inches runoff	0%	-	-	-	209.81	29.37	26,395.83
Nottoway Park Phase 2	3/16/2020	-77.274818	38.885919	Dry Swale	3.98	0.42	3.56	$67,766	30.05	1.61	894.24	CBEE Dry Swale	100%	2.79	0.21	153.14	27.26	1.40	741.10
		-77.274906	38.884787	Bioretention	1.23	0.51	0.72	$17,800	20.11	1.24	758.01	CBEE Bioretention A/B soils, underdrain	100%	1.21	0.15	130.53	18.90	1.09	627.48
		-77.273892	38.885178	Dry Swale	0.69	0.05	0.64	$107,185	5.10	0.26	136.86	CBEE Dry Swale	100%	0.46	0.03	21.56	4.64	0.23	115.30
		-77.274973	38.885071	Dry Swale	1.58	0.64	0.94	$23,623	14.18	1.07	731.92	CBEE Dry Swale	100%	1.54	0.19	164.36	12.64	0.88	567.56
		-77.274906	38.884787	Bioretention	1.27	0.07	1.20	$65,857	9.28	0.45	234.36	CBEE Bioretention A/B soils, underdrain	100%	0.83	0.05	34.85	8.45	0.40	199.51
		-77.274254	38.884998	Constructed Wetland	28.58	1.87	26.71	$233,315	93.91	6.87	4,304.32	CBP Retrofits Expert Panel, ST curve, for 0.7 inches of runoff	92%	16.35	1.14	774.18	77.56	5.73	3,530.14
		-77.272714	38.885142	Bioretention	0.96	0.35	0.61	$13,553	8.43	0.61	413.76	CBEE Bioretention A/B soils, underdrain	100%	0.90	0.11	91.36	7.53	0.50	322.40
		-77.273789	38.884902	Dry Swale	0.35	0.11	0.24	$18,707	2.99	0.21	136.83	CBEE Dry Swale	100%	0.31	0.04	29.46	2.68	0.17	107.37
		-77.272805	38.88491	Dry Swale	0.35	0.10	0.25	$14,221	2.94	0.20	128.87	CBEE Dry Swale	100%	0.30	0.03	27.27	2.64	0.17	101.60
Langston Hughes MS	6/30/2020	-77.338308	38.934725	Infiltration	2.00	1.90	0.10	$294,000	26.43	2.65	2,130.93	CBEE Infiltration w/o sand	0%	-	-	-	26.43	2.65	2,130.93
Willow Springs ES	8/16/2019	-77.378390	38.831059	Filtering Practices	7.36	1.24	6.12	$534,000	33.01	2.71	2,022.67	CBEE Filtering Practices	100%	5.58	0.50	384.58	27.43	2.21	1,638.09
				Subtotal:	**121.72**	**50.83**	**70.89**	**$3,296,425**	**533.84**	**54.87**	**44,187.42**			**30.60**	**2.48**	**1,830.50**	**503.24**	**52.39**	**42,356.92**
																Fairfax Credit	**92.3%**	**464.49**	**48.36**	**39,095.44**
																Herndon Credit	4.2%	21.14	2.20	1,778.99
																Vienna Credit	3.5%	17.61	1.83	1,482.49

Control Measures Expected to be Implemented During the Next Reporting Period (July 1, 2020 - June 30, 2021):

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 at Ben Franklin Park and Gunston Corner at Laurel; rainwater harvesting at the Herrity Concrete Fountain Replacement and Hollin Meadows; bioretention at the Herrity fountain; and filtering practices at Leigh Meadows and Towlston.

Stream Restoration July 1, 2018 - June 30, 2019

Updated: 9/14/2020

Stream Restoration

Projects in Addition to Those Reported in the Chesapeake Bay TMDL Action Plan Completed July 1, 2019 to June 30, 2020 (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																				
Pike Branch Tributary @ Ridgeview Park	3/1/2020	-77.097927	38.785388	Urban Stream Restoration	451.61	149.00	302.6	$3,960,000	3,136	1,564.81	415.28	51,494.10	CBP Urban Stream Restoration Expert Panel: Protocol 1 -BANCS Sediment Load Estimate: 791 tons/yr, Average Stream Bank Height: 6.6 ft , Protocol 2 - Restored Length 2843 lf, Average Stream Bank Width: 9.29 ft, Sediment Delivery Ratio: 0.0651	26.2%	86.90	7.64	5,773.61	1,477.91	407.64	45,720.49
Indian Run @ Indian Run Court	11/8/2019	-77.17744	38.822846	Urban Stream Restoration	509.16	202.45	306.7	$2,065,000	1,499	388.29	80.18	27,642.32	CBP Urban Stream Restoration Expert Panel: Protocol 1 -BANCS Sediment Load Estimate: 152.72 tons/yr, Average Stream Bank Height: 6.2 ft , Protocol 2 - Restored Length 1197 lf, Average Stream Bank Width: 4.8 ft, Sediment Delivery Ratio: 0.181	44.5%	172.85	29.44	12,305.05	215.44	50.74	15,337.27
Indian Run @ Columbia Road	11/8/2019	-77.176211	38.821069	Urban Stream Restoration	516.35	175.69	340.7	$1,148,000	430	105.72	19.43	6,697.00	CBP Urban Stream Restoration Expert Panel: Protocol 1 -BANCS Sediment Load Estimate: 37 tons/yr, Average Stream Bank Height: 4.25 ft , Protocol 2 - Restored Length 430 lf, Average Stream Bank Width: 5.4 ft, Sediment Delivery Ratio: 0.181	45.2%	47.83	8.79	3,030.01	57.89	10.64	3,666.99
Difficult Run Tributary @ Brittenford Drive	3/1/2020	-77.297957	38.943905	Urban Stream Restoration	459.20	112.42	346.8	$4,781,000	5,402	4,472.27	1,830.85	631,206.73	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	36.4%	127.01	9.96	7,168.76	4,345.26	1,820.89	624,037.97
Brevity Drive Outfall	11/27/2019	-77.30877	38.98328	Outfall Restoration	88.90	14.20	74.7	$622,839	540	98.62	45.42	15,657.95	CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 540 LF, Average Stream Bank Height: 6 ft, Sediment Delivery Ratio: 0.181	77.1%	55.80	4.53	3,309.82	42.82	40.89	12,348.13
Four Stairs Court & Sandy Folly Court Outfall	11/8/2019	-77.32923	38.809097	Outfall Restoration	27.60	4.80	22.8	$572,842	1,070	149.75	68.97	23,776.88	CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 1070 LF, Average Stream Bank Height: 4.5 ft, Sediment Delivery Ratio: 0.181	89.1%	17.62	1.48	1,102.71	132.14	67.48	22,674.18
Lorton Athletic Fields @ Lower Potomac Ballpark	3/1/2020	-77.210964	38.698586	Outfall Restoration	29.50	8.20	21.3	$812,000	150	15.98	7.36	2,537.17	CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 150 LF, Average Stream Bank Height: 6 ft, Sediment Delivery Ratio: 0.181	0.0%	-	-	-	15.98	7.36	2,537.17
Reseca Lane Outfall	11/27/2019	-77.247155	38.790435	Outfall Restoration	22.90	9.60	13.3	$354,389	475	86.75	39.95	13,773.20	CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 475 LF, Average Stream Bank Height: 6 ft, Sediment Delivery Ratio: 0.181	21.5%	4.01	0.44	358.21	82.74	39.51	13,414.98
Cork County Court Outfall	5/31/2020	-77.249277	38.775766	Outfall Restoration	323.00	129.00	194.0	$549,282	336	61.36	28.26	9,742.72	CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 336 LF, Average Stream Bank Height: 6 ft, Sediment Delivery Ratio: 0.181	21.6%	13.27	4.32	2,106.46	48.10	23.94	7,636.26
Deerfield Pond Court Outfall	5/31/2020	-77.288055	39.003044	Outfall Restoration	103.75	22.80	81.0	$248,043	225	27.39	12.62	4,349.43	CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 225 LF, Average Stream Bank Height: 4 ft, Sediment Delivery Ratio: 0.181	1.8%	0.49	0.14	77.95	26.90	12.48	4,271.48
Flatlick PhIII	4/10/2020	-77.448606	38.878373	Urban Stream Restoration	3,989.40	1,333.50	2,655.9	$3,154,231	3,895	1,644.36	228.38	78,735.00	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	36.9%	606.11	84.18	29,021.71	1,038.25	144.20	49,713.29
				Subtotal:	**6,521.37**	**2,161.66**	**4,359.71**	**$18,267,626**	**17158**	**8,615.30**	**2,776.70**	**865,612.50**			**1,131.89**	**150.92**	**64,254.29**	**7,483.43**	**2,625.77**	**801,358.21**
																	Fairfax Credit	**92.3%**	**6,907.21**	**2,423.59**	**739,653.63**
																	Herndon Credit	4.2%	314.30	110.28	33,657.04
																	Vienna Credit	3.5%	261.92	91.90	28,047.54

Control Measures Expected to be Implemented During the Next Reporting Period (July 1, 2020 - June 30, 2021):

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: Old Courthouse Spring Branch, Flag Run at Elgar St, Gillings Road Outfall and Snakeden Branch Tributary at Lake Audubon..

Single Family Residential Development July 1, 2018 to June 30, 2019

Structural BMP reductions for single family residential development under one acre from July 1, 2019 through June 30, 2020 (on parcels intersecting the 2020 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
000020-INF -024-2	WESTMORE GARDENS SEC 2 LOT 66 PT 65 (DR)	10/22/2019	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	0.04	0.04	0.43	0.04	25.77
000076-INF-008-2	CHAINBRIDGEWOODSLOT10(DR)	09/06/2019	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	0.02	0.02	0.22	0.02	12.88
000427-INF-021-2	BROYHILLSMCLEANESTATESSEC2LOT125(DR)	07/15/2019	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.	0.09	0.05	1.15	0.09	62.32
000981-INF-007-1	FRANKLINFORESTLOT49SEC3(DR)	08/26/2019	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
001603-INF -007-1	MARLBORO ESTATES SEC 3 LOT 42 (DR)	02/13/2020	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.	0.0543	0.04	0.73	0.06	44.06
001603-INF -010-1	MARLBORO ESTATES LOT 58 SEC 3 (DR)	01/14/2020	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	0.03	0.56	0.05	35.05
001610-INF -029-2	CHESTERBROOK GARDENS SECTION 2 LOT 80 (DR)	11/15/2019	INFILTRATION PRACTICES LEVEL 1 (PRACTICE 8)	0.80	0.85	0.95	CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.06	0.06	0.81	0.08	66.77
001610-INF-043-1	CHESTERBROOKGARDENSSEC4LOT85(DR)	09/19/2019	INFILTRATION PRACTICES LEVEL 1 (PRACTICE 8)	0.80	0.85	0.95	CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.2	0.10	2.15	0.17	127.98
002043-INF -017-1	WESTMORELAND PARK LOT 66 SEC 2 (DR)	10/10/2019	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.	0.09	0.04	1.08	0.08	52.86
002043-INF -019-1	WESTMORELAND PARK SEC 2 LOT 69 (DR)	01/14/2020	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	0.08	0.03	0.65	0.04	24.16
002043-INF-015-2	WESTMORELANDPARKSEC2LOT35(DR)	07/15/2019	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.	0.0286	0.03	0.44	0.04	31.82
002138-INF -006-1	WEST MCLEAN BLK 7 LOTS 39 40 41 (DR)	10/23/2019	CONVENTNL INFILTRATN-1 (20,000-100,000 SQ FT) DRAINAGE	0.80	0.85	0.95	CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.12	0.06	1.29	0.10	76.79
002138-INF-008-2	WESTMCLEANBLOCK7LOTS45,46,AND47(DR)	09/23/2019	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
002479-INF -005-2	POPLAR HEIGHTS SEC 5 LOT 98 (PR)	04/12/2020	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	0.016	0.02	0.17	0.01	10.31
002479-INF -005-2	POPLAR HEIGHTS SEC 5 LOT 98 (PR)	04/12/2020	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	0.009	0.01	0.10	0.01	5.80
002479-INF -005-2	POPLAR HEIGHTS SEC 5 LOT 98 (PR)	04/12/2020	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	0.009	0.01	0.10	0.01	5.80
002479-INF -005-2	POPLAR HEIGHTS SEC 5 LOT 98 (PR)	04/12/2020	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	0.012	0.01	0.13	0.01	7.73
002479-INF -005-2	POPLAR HEIGHTS SEC 5 LOT 98 (PR)	04/12/2020	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	0.012	0.012	0.13	0.01	7.73
003314-INF -002-2	CHESTERBROOK SEC 3 LOT 5 (DR)	01/14/2020	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	0.024	0.024	0.26	0.02	15.46
003766-INF -007-4	OAK VALLEY ESTATES LOT 13 (PR)	04/12/2020	INFILTRATION PRACTICES LEVEL 1 (PRACTICE 8)	0.80	0.85	0.95	CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.18	0.05	1.72	0.11	77.35
004061-INF -001-1	COUNTRYSIDE LT 12 [DR]	10/01/2019	INFILTRATION PRACTICES LEVEL 1 (PRACTICE 8)	0.80	0.85	0.95	CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.46	0.3	5.34	0.47	360.55
004285-INF-020-2	MCLEANMANORLOT46SEC1/6803DILLONAVE(DR)	09/17/2019	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	0.06	0.04	0.56	0.04	27.70
004814-INF -003-3	SECOND ADDN HOLMES RUN HEIGHTS-7803 RIDGEWOOD DR (	11/18/2019	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	0.06	0.05	0.85	0.08	33.18
005134-INF -173-2	MICKLERS ADDN TO PIMMIT HILLS LOT 26 (DR)	10/04/2019	INFILTRATION PRACTICES LEVEL 1 (PRACTICE 8)	0.80	0.85	0.95	CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.14	0.06	1.45	0.11	80.13
005134-INF-168-1	PIMMITTHILLSLOT243SEC6(DR)	08/05/2019	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.	0.0763	0.049	1.01	0.08	59.08
005314-INF-019-2	PIMMITHILLSSECTION2BLOCKLLOT6(DR)	08/28/2019	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	0.0656	0.0556	0.66	0.05	36.79

Single Family Residential Development July 1, 2018 to June 30, 2019

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
005607-INF-008-2	DPDIVINEFRANKLINPARKPTLT1(DR)	08/22/2019	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.	0.49	0.42	7.16	0.66	479.05
005607-INF-008-2	DPDIVINEFRANKLINPARKPTLT1(DR)	08/22/2019	INFILTRATION PRACTICES LEVEL 1 (PRACTICE 8)	0.80	0.85	0.95	CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.21	0.1	2.23	0.18	129.65
005770-INF -031-4	MERRELL PARK LOT 29 (DR)	10/08/2019	INFILTRATION PRACTICES LEVEL 1 (PRACTICE 8)	0.80	0.85	0.95	CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.18	0.04	1.67	0.10	67.89
005770-INF -032-1	MERRELL PARK LOT 19 / 6609 QUINTEN ST (DR)	01/07/2020	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	0.06	0.05	0.85	0.08	33.18
006665-INF -002-1	BROYHILL GLEN GARY PARK LOT 22 SEC 1 (DR)	01/06/2020	INFILTRATION PRACTICES LEVEL 1 (PRACTICE 8)	0.80	0.85	0.95	CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.12	0.03	1.13	0.07	48.41
006828-INF-026-1	SMOOTSADDITIONTOCHESTERBROOKWOODSLT13(DR)	09/25/2019	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	0.06	0.96	0.06	43.39
007784-INF -010-1	SIGMONA PARK LOT 48 - 2145 EMILYS LANE (DR)	10/30/2019	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	0.02	0.02	0.22	0.02	12.88
008585-INF -003-2	COUNTRY CLUB VIEW LT41 SEC 2 (BR)	02/13/2020	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	0.14	0.09	1.29	0.09	62.81
008754-INF-002-2	NORTHIDYLWOODLT10-2301PROVIDENCEST(PR)	08/08/2019	INFILTRATION TRENCH - DESIGN 1	0.80	0.85	0.95	CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.24	0.09	2.42	0.18	125.20
009219-INF -004-1	LEONARD LOT 22 (DR)	10/10/2019	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.	0.09	0.03	1.02	0.07	43.40
009954-INF -003-1	WALTER HEIGHTS LOTS 26 & 27 SEC B (DR)	12/11/2019	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
013041-INF-019-1	DEVONPARKSEC2LOT119(DR)	09/25/2019	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.	0.03	0.03	0.47	0.05	33.38
013308-INF -006-1	KENT GARDENS SEC 1 LOT 12 (DR)	01/07/2020	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	0.06	0.06	0.65	0.05	38.65
013857-INF-023-1	BROYHILLLANGLEYESTATESLOT106SEC1(DR)	08/14/2019	INFILTRATION PRACTICES LEVEL 1 (PRACTICE 8)	0.80	0.85	0.95	CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.14	0.1	1.67	0.15	117.96
021868-INF -003-1	CHESTERBROOK SEC 1 LOT 11(DR)	10/31/2019	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
024808-INF -009-1	DEVON PARK, SECTION 3, LOT 72 (DR)	10/02/2019	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	0.053	1.54	0.11	71.84
024828-INF-002-1	LEWINSVILLEHEIGHTSSEC2LOT78(DR)	07/15/2019	MICRO INFILTRATION LEVEL 1 (250-2500 SQ FT)	0.80	0.85	0.95	CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.0671	0.0671	0.91	0.09	74.67
024835-INF-005-2	SOUTHRIDGELOT12SEC2(DR)	08/09/2019	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	0.015	0.015	0.16	0.01	9.66
024835-INF-005-2	SOUTHRIDGELOT12SEC2(DR)	08/09/2019	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	0.013	0.013	0.14	0.01	8.37
024835-INF-005-2	SOUTHRIDGELOT12SEC2(DR)	08/09/2019	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	0.036	0.036	0.39	0.03	23.19
024859-INF -024-2	LEWINSVILLE HEIGHTS SEC 2 LOT 65 (DR)	12/03/2019	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	0.06	0.06	0.65	0.05	38.65
025434-INF -002-1	BROOKHAVEN LOT 3 BLOCK 2 (DR)	11/05/2019	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.	0.03	0.03	0.47	0.05	33.38
025592-INF-006-1	PIMMITHILLSSEC6LOT189(DR)	08/28/2019	INFILTRATION PRACTICES LEVEL 1 (PRACTICE 8)	0.80	0.85	0.95	CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.044	0.044	0.59	0.06	48.96
025592-INF-006-1	PIMMITHILLSSEC6LOT189(DR)	08/28/2019	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	0.0235	0.0235	0.25	0.02	15.14
025592-INF-006-1	PIMMITHILLSSEC6LOT189(DR)	08/28/2019	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	0.0209	0.0209	0.23	0.02	13.46
025787-INF -002-3	GOLDLEAF TERRACE LOT 1 (DR)	10/22/2019	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	0.08	1.76	0.14	57.34
002267-INF -003-2	DUNLEIGH SEC 1 LOT 45A (BR)	12/11/2019	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

Single Family Residential Development July 1, 2018 to June 30, 2019

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
024725-INF -004-2	HIGHVIEW TERRACE LOT 1 (DR)	05/17/2020	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	0.067	1.32	0.11	46.35
005134-INF -150-5	PIMMIT HILLS SEC 3 LOT 88 [DR]	01/14/2020	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	0.0151	0.0151	0.16	0.01	9.73
005134-INF -161-3	PIMMIT HILLS SEC 7 LOT 259 - 1922 STORM DR (DR)	11/13/2019	SIMPLE DISCONNECTION	0.25	0.25	-	VA BMP Clearinghouse for TP & TN	0.1	0.1	0.42	0.04	-
005134-INF -178-1	PIMMIT HILLS SEC 7 LT 261 (DR)	10/23/2019	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	0.013	0.013	0.14	0.01	8.37
005134-INF -178-1	PIMMIT HILLS SEC 7 LT 261 (DR)	10/23/2019	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	0.018	0.018	0.19	0.02	11.60
008622-INF -038-1	BROYHILL LANGLEY ESTATES SEC 1 LOT 81 (DR)	12/11/2019	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.	0.11	0.08	1.52	0.13	94.03
009716-INF -025-1	GRASS RIDGE SEC 4 BLK 8 LOT 29 (DR)	01/15/2020	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.	0.0369	0.0299	0.53	0.05	34.44
013041-INF -021-2	DEVON PARK SEC 2 LOT 88 (DR)	01/28/2020	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	0.0593	0.0593	0.64	0.05	38.20
024859-INF -023-1	LEWINSVILLE HEIGHTS SECT 2 LOT 49 (DR)	01/21/2020	MICRO INFILTRATION LEVEL 1 (250-2500 SQ FT)	0.80	0.85	0.95	CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.0207	0.012	0.23	0.02	14.81
000508-INF -021-3	RIVER OAKS LOT 3 SEC 1 (DR)	03/05/2020	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
000703-INF -002-2	MCNEIR MANOR SECTION 4 LOT 3 (DR)	02/05/2020	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	0.06	1.67	0.12	80.13
000804-INF -029-2	HANSBOROUGH LOT 63 (DR)	02/06/2020	STORMTECH ISOLATOR ROW	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	0.0997	0.0609	0.35	0.05	39.86
000804-INF -029-2	HANSBOROUGH LOT 63 (DR)	02/06/2020	BIORETENTION FILTERS LEVEL 2 WITH UNDERDRAIN	0.90	0.90	0.55	VA BMP Clearinghouse for TP & TN; CBP Established Efficiencies - Bioretention C/D soils, underdrain for TSS	0.0982	0.0515	1.20	0.09	37.69
001298-INF-017-1	ROSEMONTSEC2LOT6(DR)	09/25/2019	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	0.08	0.03	0.91	0.06	24.16
001603-INF -012-2	MARLBORO ESTATES SEC 3 LOT 28 (DR)	03/17/2020	INFILTRATION PRACTICES LEVEL 1 (PRACTICE 8)	0.80	0.85	0.95	CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.1537	0.058	1.55	0.11	80.52
001610-INF -047-2	CHESTERFIELD LT 34A SEC1 (DR)	02/28/2020	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	0.04	0.04	0.43	0.04	25.77
002043-INF -020-1	WESTMORELAND PARK SEC 2 LOT 97 (DR)	03/10/2020	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	0.02	0.02	0.22	0.02	12.88
002138-INF-007-2	WESTMCLEANBLOCK7LOTS51-53(DR)	09/17/2019	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	0.06	1.49	0.11	76.79
002286-INF-002-1	LEELANDPARKLT9SEC2(DR)	08/26/2019	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
002908-INF -013-1	HILLSIDE MANOR LOT 21 (DR)	03/05/2020	INFILTRATION PRACTICES LEVEL 1 (PRACTICE 8)	0.80	0.85	0.95	CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.168	0.051	1.63	0.11	76.29
003447-INF -001-1	FOREST VILLA WOODS LOT 5 (DR)	03/10/2020	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.	0.06	0.06	0.93	0.09	66.77
004241-INF -014-2	DIVINES CHESTERBROOK BLK 5 LOTS 7-8-9 (DR)	03/17/2020	INFILTRATION PRACTICES LEVEL 1 (PRACTICE 8)	0.80	0.85	0.95	CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.12	0.04	1.18	0.08	57.87
004285-INF -030-2	MCLEAN MANOR SEC 3 LOT 155 (DR)	03/30/2020	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	0.06	0.05	0.85	0.08	33.18
004800-INF -025-2	EL NIDO ESTATES SEC 5 LOT 69 (DR)	02/28/2020	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
005562-INF-009-5	LANGLEYFARMSSEC1BLK3LOTS7AND8(DR)	08/02/2019	INFILTRATION TRENCH - DESIGN 1	0.80	0.85	0.95	CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.83	0.18	7.66	0.47	308.85
005770-INF -033-2	MERRELL PARK LOT 42 (DR)	03/17/2020	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.	0.03	0.03	0.47	0.05	33.38
005770-INF -034-1	MERRELL PARK LOT43 (DR)	03/30/2020	INFILTRATION PRACTICES LEVEL 1 (PRACTICE 8)	0.80	0.85	0.95	CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.1	0.05	1.08	0.09	63.99

Single Family Residential Development July 1, 2018 to June 30, 2019

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
008009-INF -049-2	HOLLIN HALL VILLAGE SEC 1 LOT 90A (MV)	03/05/2020	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	0.0193	0.0193	0.21	0.02	12.43
008009-INF -050-2	HOLLIN HALL VILLAGE SEC 1 LOT 91A (MV)	03/05/2020	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	0.019	0.019	0.21	0.02	12.24
009506-INF -001-2	SHREVE ROAD- 7903 SHREVE ROAD (PR)	03/30/2020	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.	0.024	0.024	0.37	0.04	26.71
009506-INF -001-2	SHREVE ROAD- 7903 SHREVE ROAD (PR)	03/30/2020	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.	0.013	0.013	0.20	0.02	14.47
009506-INF -001-2	SHREVE ROAD- 7903 SHREVE ROAD (PR)	03/30/2020	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.	0.0301	0.0301	0.47	0.05	33.49
009626-INF -002-1	OLIVER ESTATES LOT 68 (DR)	03/02/2020	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.	0.07	0.07	1.09	0.11	77.89
015414-INF -022-2	CHESTERBROOK GARDENS SEC 2 LOT 64 (DR)	03/05/2020	INFILTRATION PRACTICES LEVEL 1 (PRACTICE 8)	0.80	0.85	0.95	CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.1	0.05	1.08	0.09	63.99
016138-INF -001-2	EDWARD J IRVIN ET UX PROPERTY LOT 1 (DR)	03/30/2020	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.	0.02	0.02	0.31	0.03	22.26
024808-INF -010-3	DEVON PARK SEC 3 LOT 47 (DR)	03/13/2020	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
024975-INF -010-3	CHESTERBROOK GARDENS SEC 5 LT 129 (DR)	02/05/2020	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	0.0256	0.0256	0.28	0.02	16.49
024975-INF -010-3	CHESTERBROOK GARDENS SEC 5 LT 129 (DR)	02/05/2020	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	0.0322	0.0322	0.35	0.03	20.74
025272-INF -003-2	BREEZEWOOD LOT 1 (DR)	12/16/2019	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	0.0379	0.0379	0.41	0.03	24.42
025738-INF -002-1	WEST GRASS RIDGE SEC 3 BLK 3 LOT 18 (DR)	02/25/2020	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	0.04	0.62	0.06	44.51
025799-INF -006-1	SOUTHRIDGE SEC 3 LOT 96 (DR)	12/18/2019	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	0.12	0.06	1.45	0.11	44.45
001756-INF -001-2	WOLF TRAP GREEN SEC 1 LOT 14 (DR)	05/26/2020	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.	0.052	0.036	0.71	0.06	42.73
001771-INF -019-1	OLD DOMINION GARDENS LOT 61 (DR)	04/12/2020	INFILTRATION PRACTICES LEVEL 1 (PRACTICE 8)	0.80	0.85	0.95	CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.23	0.07	2.23	0.15	104.61
002017-INF -003-2	2ND BRYN MAWR LOT 7 - 6803 TENNYSON DR (DR)	05/26/2020	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.	0.099	0.05	1.23	0.09	63.82
002338-INF -020-3	CHURCHILL LOT 10 BLK B SEC 1 (DR)	05/03/2020	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	0.03	0.93	0.06	41.73
003658-INF -012-2	WESTMORELAND HEIGHTS SEC 2 LOT 19 (DR)	06/22/2020	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
004061-INF -002-4	COUNTRYSIDE LT 9 (DR)	05/03/2020	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
004285-INF -029-2	MCLEAN MANOR SEC 4 LOT 94 (DR)	04/17/2020	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	0.07	0.05	0.94	0.08	34.15
004342-INF -022-1	BROOKHAVEN BLK 2 LOT 6 (DR)	05/26/2020	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.	0.14	0.09	1.86	0.15	108.50
005253-INF -051-1	SALONA VILLAGE SEC 4 LOT 15 (DR)	04/12/2020	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.	0.25	0.13	3.13	0.24	164.70
005253-INF -052-1	SALONA VILLAGE LT4 SEC 3 (DR)	04/12/2020	INFILTRATION PRACTICES LEVEL 1 (PRACTICE 8)	0.80	0.85	0.95	CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.03	0.02	0.35	0.03	23.93
006834-INF -011-1	DUNN LORING WOODS SEC 5 BLK J LOT 12 (PR)	04/17/2020	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.	0.0324	0.023	0.44	0.04	27.16
006925-INF -003-1	POTOMAC HILLS SEC 4 LT 128 (DR)	05/11/2020	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	0.05	0.05	0.54	0.04	32.21
008592-INF -001-2	WALTER R REYNOLDS 3RD ADDN - CLUB MANORS LOT 63 (D	06/22/2020	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	0.11	0.04	1.24	0.08	32.54

Single Family Residential Development July 1, 2018 to June 30, 2019

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
009597-INF -001-1	CINNAMON CREEK LT 6 (DR)	06/12/2020	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	0.12	0.07	1.52	0.12	49.93
013041-INF -022-1	DEVON PARK SEC 1 LOT 34 (DR)	04/17/2020	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	0.07	0.04	0.62	0.04	28.67
015014-INF -002-1	MARLBORO ESTATE LT 61 SEC3 (DR)	06/12/2020	INFILTRATION PRACTICES LEVEL 1 (PRACTICE 8)	0.80	0.85	0.95	CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.1349	0.0386	1.30	0.09	59.04
024881-INF -008-2	ROSEMONT LOT 58 SEC 5 (DR)	05/17/2020	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	0.1274	0.115	1.86	0.17	75.28
025158-INF -009-2	ROSEMONT SEC 4 LOT 23 (DR)	05/04/2020	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
000898-INF -002-3	FARR AND MCCANDLISH LOT 30A (MA)	05/26/2020	INFILTRATION PRACTICES LEVEL 1 (PRACTICE 8)	0.80	0.85	0.95	CBP Established Efficiencies - Infiltration Practices w/o Sand, Veg.	0.12	0.03	1.13	0.07	48.41
000898-INF -002-3	FARR AND MCCANDLISH LOT 30A (MA)	05/26/2020	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
							2020 Single Family Credit for Structural BMPs:			**114.46**	**9.15**	**6,177.25**
							2020 Single Family Credit for Nutrient Credit Purchases:			**183.86**	**14.88**	-
							Total 2020 Credit for Single Family < 1 acre:			**298.32**	**24.03**	**6,177.25**

Single Family Residential Development < 1 Acre: Nutrient Credit Purchases Identifed by County July 1, 2019 - June 30, 2020 (on parcels intersecting 2020 MS4)

NCA_ID	PLAN NAME	PLAN NUMBER	DISTURBED ACRES	PHOSPHORUS CREDITS PURCHASED	NITROGEN CREDITS PURCHASED	EFFECTIVE_DATE	PARCEL_PIN	ADDRESS
NCA0589	Hillside Manor, Lot 34	2908-INF-16-1	0.23	0.33	5.16	1/24/2019	0304 20 0034	6712 VAN FLEET DR
NCA0590	River Oaks Sec 5, Lot 28A	3072-INF-13-1	0.20	0.05	0.37	2/1/2019	0212 03 0028A	6907 LUPINE LN
NCA0592	Dunn Loring Woods Sec 6, Blk G, Lot 11	6834-INF-12-1	0.20	0.06	0.56	6/15/2018	0491 09G 0011	2542 VILLANOVA CT
NCA0593	Falls Hill, Lot 13	2991-INF-06-4	0.53	0.09	1.44	1/22/2019	0403 05 0013	7306 GORDONS RD
NCA0599	Saddlebrook Farms, Lot 2	5916-INF-02-2	0.14	0.11	0.82	1/23/2019	0283 27 0002	1903 BALLYCOR DR
NCA0602	6413 Maplewood Drive	24640-INF-06-2	0.23	0.11	1.72	6/9/2015	0613 11 0051	6413 MAPLEWOOD DR
NCA0603	Lincoln Park Sec 1, Lot 18	2816-INF-12-1	0.33	0.16	2.57	3/21/2019	0723 10 0018	6309 7TH ST
NCA0611	Reynolds Third Potomac Hills, Lot 32	5212-INF-04-3	0.22	0.08	1.28	2/8/2019	0313 19 0032	6206 Mori St, Mclean, VA, 22101
NCA0614	Lewinsville Heights Sec 1, Lot 23	24859-INF-17-1	0.34	0.09	0.00	6/30/2017	0304 19 0023	1719 Macon St, Mclean, VA, 22101
NCA0615	Collingwood Manor, Blk A, Lot 18	2366-INF-02-4	0.18	0.10	0.00	3/6/2017	1022 14A 0018	1119 Arcturus Ln, Alexandria, VA, 22308
NCA0617	Langley Forest Sec 3, Lot 23	7096-INF-44-2	0.30	0.08	1.26	4/17/2019	0213 02 0023	7029 Benjamin St, Mclean, VA, 22101
NCA0621	Dunn Loring Blk 23, Lot 39B	2830-INF-02-2	0.44	0.14	2.25	12/21/2018	0394 01 0039B	8039 Iliff Dr, Dunn Loring, VA, 22027
NCA0622	Willam A and Julie S Roberts Property	8366-INF-01-3	0.28	0.39	6.10	10/3/2018	0614 01 0164A	3616 Boat Dock Dr, Falls Church, VA, 22041
NCA0624	Lake Barcroft Sec 9, Lot 900	6351-INF-03-2	0.11	0.09	1.41	1/16/2019	0611 11 0900	3516 Duff Dr, Falls Church, VA, 22041
NCA0627	Weber Property, Lot 12C	6691-INF-05-2	0.85	0.17	2.73	2/8/2019	0472 34 0012B	3007 Weber Pl, Oakton, VA, 22124
NCA0628	Weber Property, Lot 12B	6691-INF-04-2	0.82	0.06	0.96	2/8/2019	0472 34 0012B	3007 A Weber Pl, Oakton, VA, 22124
NCA0629	Hoopers Chesterbrook Sec 4, Lot 21A	7182-INF-08-2	0.40	0.11	1.72	2/11/2019	0312 09 0021A	6005 Copely Ln, Mclean, VA, 22101
NCA0630	Lewinsville	6100-INF-04-2	0.32	0.16	1.19	1/10/2019	0282 04 0001	8832 Lewinsville Rd, Mclean, VA, 22102
NCA0633	Kiels Garden, Lot 12	9088-INF-04-3	0.70	0.24	2.40	2/28/2019	0562 05 0002	4415 Forest Hill Dr, Fairfax, VA, 22030
NCA0634	Dunn Loring Woods Sec 6, Blk G, Lot 27	6834-INF-13-1	0.23	0.10	1.60	2/27/2019	0491 09G 0027	8309 Colby St, Vienna, VA, 22180
NCA0637	Broyhill Langley Estates Sec 1, Lot 15	23141-INF-08-2	0.38	0.08	0.76	1/11/2019	0214 13 0015	6901 Bright Ave, Mclean, VA, 22101
NCA0638	Ox Road, Lot 19	8219-INF-04-3	0.76	0.39	4.49	4/24/2019	0452 01 0019	3610 West Ox Rd, Fairfax, VA, 22033
NCA0639	Woodside Estates, Lot 43A2	4923-INF-30-1	0.24	0.15	1.83	5/2/2019	0291 05 0043A2	8756 Lewinsville Rd, Mclean, VA, 22102
NCA0641	Westmore Gardens Sec 2, Lot 66 and part of Lot 65	0020-INF-24-2	0.25	0.03	0.45	4/16/2019	0404 11 0066	6512 32Nd St, Falls Church, VA, 22046
NCA0642	Lewinsville Heights Sec 2, Lot 65	24859-INF-24-2	0.35	0.01	0.15	4/16/2019	0304 27 0065	6812 Broyhill St, Mclean, VA, 22101
NCA0643	Chesterfield Sec 1, Lot 34A	1610-INF-47-2	0.22	0.04	0.40	2/14/2019	0304 09 0034A	6620 Tucker Ave, Mclean, VA, 22101
NCA0644	Keyes Second Addition to Lincolnia Park, Lot 1	3395-INF-01-2	0.43	0.28	2.80	12/20/2018	0723 20 0001	6351 Evangeline Ln, Alexandria, VA, 22312
NCA0645	Langley Forest Sec 5, Lot 17	7096-INF-43-2	0.43	0.11	1.27	3/28/2019	0212 04 0017	6815 Wemberly Way, Mclean, VA, 22101
NCA0646	Broyhills Estates Sec 3, Lot 224	3890-INF-14-1	0.06	0.26	1.93	3/20/2019	0301 12 0224	1411 Mayflower Dr, Mclean, VA, 22101
NCA0647	Fairfax Station, Parcel 23A-2	2345-INF-07-1	0.30	0.15	2.41	3/20/2019	0771 01 0023C	5610 Gobind Ln, Fairfax Station, VA, 22039
NCA0649	7905 Shreve Road	9506-INF-02-2	0.48	0.11	1.76	4/16/2019	0492 01 0137	7905 Shreve Rd, Falls Church, VA, 22043
NCA0652	Beverly Manor, Lot 23	6257-INF-03-1	0.31	0.08	1.25	5/7/2019	0603 25 0023	7309 Beverly Manor Dr, Annandale, VA, 22003
NCA0655	Pimmit Hills Sec 2, Blk L, Lot 1	5134-INF-162-1	0.22	0.04	0.46	4/23/2019	0401 05L 0001	7334 Paxton Rd, Falls Church, VA, 22043
NCA0658	Salona Village Sec 7, Lot 29	7428-INF-09-2	0.36	0.07	1.09	4/25/2019	0311 07 0029	6503 Smoot Dr, Mclean, VA, 22101
NCA0662	Broyhill Langley Estates Sec 3, Lot 85	8622-INF-42-2	0.28	0.15	1.73	5/16/2019	0213 11 0085	1005 Dead Run Dr, Mclean, VA, 22101
NCA0663	Chesterfield Sec 1, Lot 33A	1610-INF-49-2	0.23	0.05	0.78	6/28/2019	0304 09 0033A	6618 Tucker Ave, Mclean, VA, 22101
NCA0665	Hollin Hall Village Sec 1, Lot 91A	8009-INF-50-2	0.15	0.03	0.30	6/13/2019	1022 03 0091A	8034 Washington Rd, Alexandria, VA, 22308
NCA0667	Pimmit Hills Sec 6, Lot 2	5134-INF-184-2	0.20	0.07	1.09	5/2/2019	0401 03 0205	1835 Peabody Dr, Falls Church, VA, 22043
NCA0668	Woodhaven Sec 3, Lot 9	1358-INF-06-3	0.64	0.14	1.71	5/1/2019	0203 12 0009	8501 Brook Rd, Mclean, VA, 22102
NCA0670	Marlboro Estates Sec 2, Lot 9	1603-INF-11-3	0.22	0.17	2.66	6/26/2019	0402 25 0009	7004 Poppy Dr, Mclean, VA, 22101
NCA0672	Oak Valley Estates, Lot 9	3766-INF-06-3	0.34	0.15	1.91	6/7/2019	0383 07 0009	9928 Clearfield Ave, Vienna, VA, 22181
NCA0673	Oak Valley Estates, Lot 9	7094-INF-04-2	0.17	0.07	0.86	4/24/2019	0291 22 0007	1204 Hunters Grove Ct, Mclean, VA, 22102

Single Family Residential Development < 1 Acre: Nutrient Credit Purchases (2014-2019)

NCA_ID	PLAN NAME	PLAN NUMBER	DISTURBED ACRES	PHOSPHORUS CREDITS PURCHASED	NITROGEN CREDITS PURCHASED	EFFECTIVE_DATE	PARCEL_PIN	ADDRESS
NCA0674	Timber Lake Property Sec 2, Lot 20	5319-INF-08-2	0.19	0.11	1.04	4/24/2019	0362 14 0020	11421 Meadow Lake Ct, Oakton, VA, 22124
NCA0679	Kings Park, Lot 699	1658-INF-02-1	0.20	0.11	1.72	5/17/2019	0791 06 0699	5631 Southampton Dr, Springfield, VA, 22151
NCA0682	Broyhill Glen Gary Park Sec 2, Lot 23	25769-INF-03-2	0.35	0.04	0.63	7/29/2019	0304 34 0023	1636 Dempsey St, Mclean, VA, 22101
NCA0683	Poplar Heights Sec 3, Lots 90 and 91	20334-INF-07-2	0.23	0.06	0.94	7/29/2019	0501 02 0091	7401 Tower St, Falls Church, VA, 22046
NCA0687	Homewood Sec 3, Lot 3	3727-INF-04-2	0.20	0.13	2.03	7/12/2019	0782 03 0037	5827 Fitzhugh St, Burke, VA, 22015
NCA0691	Symphony Hill West Sec 1, Lot 47	25292-INF-03-2	0.22	0.03	0.35	7/5/2019	0283 08 0047	9637 Percussion Way, Vienna, VA, 22182
NCA0693	Pimmit Hills Sec 6, Lot 428	5134-INF-192-2	0.20	0.09	1.41	8/6/2019	0401 03 0428	7505 Lisle Ave, Falls Church, VA, 22043
NCA0694	Westmoreland Park Sec 2, Lot 97	2043-INF-20-1	0.21	0.03	0.47	8/12/2019	0404 06 0097	2212 Primrose Dr, Falls Church, VA, 22046
NCA0698	Pimmit Hills Sec 6, Lot 130	5134-INF-191-2	0.24	0.06	0.94	8/1/2019	0392 06 0130	2015 Nordlie Pl, Falls Church, VA, 22043
NCA0702	Oliver Estates Lot 73	9626-INF-03-1	0.52	0.07	0.81	7/30/2019	0131 03 0073	904 Walker Rd, Great Falls, VA, 22066
NCA0703	Kiels Gardens, Lot 46	9088-INF-05-4	0.48	0.14	1.40	3/29/2019	0562 05 0046	4420 Forest Hill Dr, Fairfax, VA, 22030
NCA0704	Pimmit Hills Sec 2, Lot 204	5134-INF-187-2	0.19	0.07	1.09	8/6/2019	0401 03 0204	1837 Peabody Dr, Falls Church, VA, 22043
NCA0706	Westmoreland Heights Sec 1, Lot 13	3658-INF-13-1	0.18	0.06	0.94	8/15/2019	0402 19 0013	6601 Orland St, Falls Church, VA, 22043
NCA0709	Lake Bancroft Sec 3, Lot 390	0626-INF-02-3	0.28	0.11	1.72	8/27/2019	0604 13 0390	6524 Lakeview Dr, Falls Church, VA, 22041
NCA0710	Reddifield, Lot 12	2166-INF-04-2	0.31	0.06	0.94	8/6/2019	0403 21 0012	7319 Reddfield Ct, Falls Church, VA, 22043
NCA0714	Nantucket, Lot 46	1365-INF-02-2	0.23	0.07	0.00	1/15/2018	0402 27 0045	2004 Wellfleet Ct, Falls Church, VA, 22043
NCA0717	Mclean Manor, Sec 4, Lot 90	4285-INF-31-1	0.24	0.09	1.41	9/6/2019	0304 28040013	1647 Wrightson Dr, Mclean, VA, 22101
NCA0719	Grass Ridge, Sec 1, Blk 1, Lot 9	9716-INF-18-3	0.22	0.09	1.41	4/30/2017	0304 08010009	6511 Beverly Ave, Mclean, VA, 22101
NCA0720	Lewinsville Heights Sec 2, Lot 66	24859-INF-22-2	0.27	0.02	0.00	5/1/2018	0304 27 0066	6810 Broyhill St, Mclean, VA, 22101
NCA0724	Riverwood, Sec 3, Lot 322	4289-INF-04-4	0.34	0.17	2.66	9/19/2019	1104 05 0322	9324 Old Mansion Rd, Alexandria, VA, 22309
NCA0725	Westhampton Sec 2, Lot 100	7321-INF-11-1	0.23	0.10	0.00	7/10/2018	0402 02 0100	2125 Grayson Pl, Falls Church, VA, 22043
NCA0727	Grass Ridge, Sec 1, blk 1, Lot 2	9716-INF-22-1	0.28	0.03	0.00	6/19/2018	0313 04010002	1818 Birch Rd, Mclean, VA, 22101
NCA0728	Lewinsville Heights Sec 1, Lot 5	24859-INF-21-1	0.22	0.09	1.41	1/5/2018	0304 19 0005	6809 Lumsden St, Mclean, VA, 22101
NCA0730	Fairdale Block A, Lot 6	7514-INF-03-2	0.23	0.08	1.25	9/24/2019	0711 07A 0006	7210 Sipes Ln, Annandale, VA, 22003
NCA0732	McLean Hamlet, Sec 2, Lot 206	9937-INF-10-3	0.30	0.06	0.76	9/26/2019	0292 03 0206	1361 Macbeth St, Mclean, VA, 22102
NCA0733	Reynolds 2nd Addn to Potomac Mills, Lot 44	5212-INF-05-2	0.27	0.08	1.25	9/30/2019	0313 19 0044	1507 Walden Dr, Mclean, VA, 22101
NCA0737	Oak Valley Estates, Lot 12	3766-INF-05-3	0.33	0.12	1.14	8/12/2019	0383 07 0012	2615 Oak VAlley Dr, Vienna, VA, 22181
NCA0739	Wakefield Forest, Sec 3, Lot 178	7611-INF-16-2	0.30	0.05	0.78	8/27/2019	0701 02 0178	8609 Raleigh Ave, Annandale, VA, 22003
NCA0740	Huntington Creek	7995-INF-02-3	0.25	0.09	1.41	9/10/2019	0831 01 0077	5825 Foley St, Alexandria, VA, 22303
NCA0743	Beverly Manor, Blk B Lots 47 & 48	12784-INF-05-2	0.16	0.11	1.27	7/30/2019	0302 04B 0045	1257 Beverly Rd, Mclean, VA, 22101
NCA0744	West McLean Block, Blk 5 Lot 29	3847-INF-29-1	0.24	0.08	0.92	9/13/2019	0302 07050029	1422 Cedar Ave, Mclean, VA, 22101
NCA0748	Keyes 2nd Addition to Lincolnia Park Lot 1	3395-INF-01-2	0.43	0.03	0.47	10/11/2019	0723 20 0001	6351 Evangeline Ln, Alexandria, VA, 22312
NCA0754	Pimmit Hills, Sec 3, Lot 94	5134-INF-189-1	0.19	0.08	1.25	9/12/2019	0401 02 0080	7423 Bethune St, Falls Church, VA, 22043
NCA0758	Grimm Property, Lot 1	11577-INF-04-2	0.15	0.09	1.42	8/27/2019	0202 01 0028	7728 Georgetown Pike, Mclean, VA, 22102
NCA0760	Little Vienna Estates Sec 3, Lot 43	2102-INF-22-2	0.35	0.15	0.00	9/20/2018	0372 09 0043	2316 Trott Ave, Vienna, VA, 22181
NCA0761	Mill Creek Sec 1A, Lot 27	6843-INF-09-3	0.34	0.22	0.00	2/12/2019	0594 02 0027	3910 Lake Blvd, Annandale, VA, 22003
NCA0762	McLean Manor, Sec 4, Lot 95	4285-INF-27-1	0.22	0.06	0.94	6/22/2018	0304 17 0095	1607 Wrightson Dr, Mclean, VA, 22101
NCA0764	Pimmit Hills Sec 6, Lot 186	5134-INF-199-2	0.17	0.04	0.63	10/10/2019	0401 03 0186	7509 Fisher Dr, Falls Church, VA, 22043
NCA0765	Pimmit Hills Sec 6, Lot 186	5134-INF-198-2	0.23	0.05	0.79	10/10/2019	0401 16 0110	1905 Gilson St, Falls Church, VA, 22043
NCA0766	Pimmit Hills Sec 6, Lot 186	5134-INF-194-2	0.25	0.07	1.04	10/10/2019	0401 16 0281	1920 Anderson Rd, Falls Church, VA, 22043
NCA0768	Westmore Gardens Lot 12B, Sec 2	0020-INF-23-1	0.29	0.10	0.00	1/28/2019	0404 11 0012B	6603 Gordon Ave, Falls Church, VA, 22046
NCA0769	Hilltop Lot 13	2893-INF-02-2	0.02	0.11	0.00	4/18/2018	0393 10 0013	2301 High Dr, Vienna, VA, 22182
NCA0772	Kathmoor, Lot 20A	25886-INF-02-2	0.35	0.04	0.63	11/14/2019	0814 02 0020A	6031 Kathmoor Dr, Alexandria, VA, 22310
NCA0774	Langley Farms, Sec 1, Blk 3, Lots 11-13	5562-INF-12-2	0.47	0.04	0.46	11/12/2019	0223 03030011	1132 Langley Ln, Mclean, VA, 22101

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NCA0776	River Oaks, Sec 1, Lot 1	0508-INF-22-1	0.51	0.06	0.69	6/21/2019	0214 11 0013	6904 Arbor Ln, Mclean, VA, 22101
NCA0780	Plymouth Haven, Sec 2, Blk 4, Lot 2	0080-INF-06-2	0.40	0.15	2.35	43717	1112 04040002	1206 Alden Rd, Alexandria, VA, 22308
NCA0781	Broyhll Park, Sec 9, Lot 95	1749-INF-07-7	0.19	0.10	1.56	11/1/2019	0503 02 0095	7411 Marc Dr, Falls Church, VA, 22042
NCA0782	Rosemont, Sec 4, Lot 48	25158-INF-10-3	0.27	0.07	1.10	9/12/2019	0304 29 0048	1615 Rosemont Ct, Mclean, VA, 22101
NCA0783	Westmoreland Park, Sec 2, Lot 65	2043-INF-21-3	0.26	0.05	0.78	11/6/2019	0404 06 0065	2212 Orchid Dr, Falls Church, VA, 22046
NCA0784	McLean Manor, Lot 49, Sec 1	4285-INF-26-1	0.17	0.09	0.00	6/21/2018	0304 17 0049	6809 Dillon Ave, Mclean, VA, 22101
NCA0793	Ada Grove Lot 5	25318-INF-02-2	0.33	0.06	0.91	11/6/2019	0402 33 0005	2120 Veranda Ct, Falls Church, VA, 22043
NCA0796	Georgetown Ridge, Lot 9	1694-INF-03-3	0.33	0.35	4.46	12/12/2019	0202 15 0009	909 Georgetown Ridge Ct, Mclean, VA, 22102
NCA0798	Westmore Gardens Sec 2, part of Lot 65 & Lot 66	0020-INF-24-2	0.25	0.03	0.00	3/29/2019	0404 11 0066	6512 32Nd St, Falls Church, VA, 22046
NCA0800	Occoquan Overlook Sec 1, Lot 17	1811-INF-04-2	0.28	0.15	2.35	10/15/2019	1063 08 0017	9525 Peniwill Dr, Lorton, VA, 22079
NCA0802	Symphony Hill West Sec 1, Lot 44A	25292-INF-04-3	0.18	0.10	0.95	12/19/2019	0283 08 0044A	9631 Percussion Way, Vienna, VA, 22182
NCA0804	Pimmit Hills Sec 6, Lot 269	5134-INF-202-2	0.20	0.11	1.72	12/9/2019	0401 03 0269	7605 Leonard Dr, Falls Church, VA, 22043
NCA0806	Jeremiah Stokes Estate, Parcel E	7402-INF-02-4	0.21	0.23	3.60	12/1/2019	0931 11 E	2301 Stokes Ln, Alexandria, VA, 22307
NCA0807	Salona Village Sec 3, Lot 4	5253-INF-52-1	0.35	0.02	0.31	12/9/2019	0302 17 0004	1410 Kurtz Rd, Mclean, VA, 22101
NCA0808	Poplar Heights Sec 7, Lot 11	25913-INF-04-2	0.23	0.08	1.25	12/3/2019	0501 17 0011	7305 Hughes Ct, Falls Church, VA, 22046
NCA0811	Broyhill Glen Gary Park Sec 2, Lot 11	25769-INF-04-2	0.20	0.08	1.25	12/5/2019	0304 34 0011	1637 Dempsey St, Mclean, VA, 22101
NCA0812	Sigmona Park, Lot 48	7784-INF-10-1	0.19	0.05	0.00	4/13/2018	0413 04 0048	2145 Emilys Ln, Falls Church, VA, 22043
NCA0815	Edgewater Sec 1 Lot 17	7190-INF-05-3	0.21	0.17	2.68	12/30/2019	0872 09 0017	10328 Regency Station Dr, Fairfax Station, VA, 22039
NCA0816	Dail Park Lot 7A2	2712-INF-06-2	0.25	0.09	1.41	1/2/2020	0811 03 0007A2	6175 Howells Rd, Alexandria, VA, 22310
NCA0817	Windsor Estates Sec 1 Lot 39	7706-INF-18-2	0.33	0.14	2.18	1/16/2020	0911 03 0039	7029 Barbara Rd, Alexandria, VA, 22315
NCA0819	Poplar Heights Sec 3 Lot 53	2479-INF-06-2	0.22	0.07	1.10	1/23/2020	0501 02 0053	2515 Buckelew Dr, Falls Church, VA, 22046
NCA0820	Chesterbrook Sec 3, Lot 5	3314-INF-02-2	0.25	0.06	0.00	5/22/2019	0411 10 0005	1849 Macarthur Dr, Mclean, VA, 22101
NCA0824	West McLean, Blk Lot 58-61	2138-INF-09-2	0.26	0.05	0.64	1/29/2020	0302 07070058	1473 Pathfinder Ln, Mclean, VA, 22101
NCA0825	Orchard View, Lot 54	6904-INF-28-2	0.46	0.21	1.56	12/18/2019	0383 05 0054	2516 Rambling Rd, Vienna, VA, 22181
NCA0828	Grass Ridge Sec 2, Blk 3, Lot 8	9716-INF-26-2	0.25	0.07	1.10	2/10/2020	0304 08030008	6527 Byrnes Dr, Mclean, VA, 22101
NCA0829	Briggs-Hoopers Addition to Chesterbrook Woods, Lot 2	25762-INF-06-2	0.32	0.11	1.72	1/28/2020	0314 26 0002	1704 Woodman Dr, Mclean, VA, 22101
NCA0835	Poplar Heights Sec 6 Lot 117	2479-INF-07-2	0.19	0.05	0.78	12/27/2019	0501 13 0152	7514 Allan Ave, Falls Church, VA, 22046
NCA0836	McLean Manor Sec 1 Lot 50	4285-INF-35-2	0.16	0.05	0.78	3/4/2020	0304 17 0050	6811 Dillon Ave, Mclean, VA, 22101
NCA0839	Clearview Manor Sec 2 Lot 5	2822-INF-07-4	0.75	0.17	2.73	3/27/2019	0312 05 0005	1217 Merchant Ln, Mclean, VA, 22101
NCA0841	Statecrest Woods Lot 8	9475-INF-01-2	0.32	0.10	1.56	2/21/2020	0601 40 0008	7303 Ivycrest Pl, Annandale, VA, 22003
NCA0843	Z B Groves Lot 15	25286-INF-06-3	0.28	0.08	1.26	1/24/2020	0404 04 0015	6637 Osborn St, Falls Church, VA, 22046
NCA0844	McLean Hamlet Sec 1 Lot 5	8502-INF-01-1	0.27	0.08	0.92	9/4/2019	0292 03 0005	1309 Elsinore Ave, Mclean, VA, 22102
NCA0845	Simpson & Mays 1st Addition	7913-INF-09-2	0.39	0.06	0.60	9/20/2019	0314 10 0036	6013 Oakdale Rd, Mclean, VA, 22101
NCA0848	Kenbargan Lot 31	5735-INF-14-2	0.26	0.12	1.87	1/9/2020	0411 24 0031	1925 Macarthur Dr, Mclean, VA, 22101
NCA0854	Pincrest Sec 2 Lot 169	5487-INF-19-2	0.68	0.18	2.82	3/19/2020	0721 06 0169	4322 Woodway St, Alexandria, VA, 22312
NCA0859	Mantua Sec 5 Lot 11	4547-INF-07-2	0.28	0.03	0.47	3/11/2020	0582 13 0011	3615 Glenbrook Rd, Fairfax, VA, 22031
NCA0862	Haywood, Lot 17	1926-INF-09-3	0.33	0.08	1.25	3/6/2020	0584 12 0017	4031 Goss Rd, Fairfax, VA, 22032
NCA0863	Chesterfield Sec 1, Lot 29A	1610-INF-46-2	0.21	0.07	0.00	1/7/2019	0304 09 0029A	6610 Tucker Ave, Mclean, VA, 22101
NCA0865	Alexandria Estates, Lot 2	0702-INF-01-2	0.20	0.13	1.14	3/26/2020	0461 34 0002	3525 Frostleaf Ct, Fairfax, VA, 22033
NCA0867	FRANKLIN FOREST SEC 2, LOT 24	4520-INF-11-3	0.33	0.12	1.88	3/20/2020	0411 07 0024	2012 Franklin Ave, Mclean, VA, 22101
NCA0869	Kent Gardens Sec 1, Lot 12	13308-INF-06-1	0.26	0.02	0.00	3/26/2019	0402 09 0012	6639 Kirkley Ave, Mclean, VA, 22101
NCA0870	West McLean, Lot 60A	2908-INF-14-3	0.19	0.13	1.75	4/16/2020	0302 07030060A	1437 Cedar Ave, Mclean, VA, 22101
NCA0872	Waples Mill, Lot 13	7941-INF-03-3	0.23	0.17	1.33	4/6/2020	0464 22 0013	11590 Embree Ct, Oakton, VA, 22124
NCA0873	Pimmit Hills Sec6, Lot 203	5134-INF-214-1	0.22	0.10	1.56	3/3/2020	0303 03 0412	1800 Peabody Dr, Falls Church, VA, 22043

Single Family Residential Development < 1 Acre: Nutrient Credit Purchases (2014-2019)

NCA_ID	PLAN NAME	PLAN NUMBER	DISTURBED ACRES	PHOSPHORUS CREDITS PURCHASED	NITROGEN CREDITS PURCHASED	EFFECTIVE_DATE	PARCEL_PIN	ADDRESS
NCA0874	Summerwood Sec 2, Lot 5	2706-INF-02-2	0.62	0.11	1.20	3/20/2020	0291 09 0005	1304 Daviswood Dr, Mclean, VA, 22102
NCA0875	West McLean, Lot 61A	2908-INF-15-3	0.18	0.04	0.54	4/24/2020	0302 07030061A	1439 Cedar Ave, Mclean, VA, 22101
NCA0876	Occoquan Park, Lot 3	1657-INF-06-2	0.44	0.25	3.95	4/21/2020	1064 08 0003	9105 Mariah Jefferson Ct, Lorton, VA, 22079
NCA0877	West McLean, Blk 3 Lot 77	2028-INF-03-2	0.08	0.01	0.10	3/13/2020	0302 07030077	1473 Cedar Ave, Mclean, VA, 22101
NCA0878	Lexington Estates Sec 2, Lot 157	1129-INF-06-2	0.49	0.21	2.30	5/17/2019	0122 10 0157	905 Cantle Ln, Great Falls, VA, 22066
NCA0879	Oxford Lot, 18A	5615-INF-03-3	0.43	0.22	3.44	3/12/2020	1103 13 0018A	9513 Lynnhall Pl, Alexandria, VA, 22309
NCA0880	Georgetown Pike Lot 5	7931-INF-04-5	0.83	0.49	4.90	1/30/2020	0223 08 0005	1004 Dogue Hill Ln, Mclean, VA, 22101
NCA0881	Lord Fairfax Manors, Lot 42	9736-INF-02-3	0.08	0.05	0.44	5/8/2020	0391 43 0042	8293 Elm Shade Ct, Vienna, VA, 22182
NCA0882	Rolling Valley West Sec 3, Lot 213	24612-INF-03-5	0.13	0.08	1.27	5/12/2020	0891 06 0213	6723 Greenview Ln, Springfield, VA, 22152
		Total Credits Purchased		**14.88**	**183.86**			

Septic Conversions from July 1, 2019 to June 30, 2020 (or previously unreported)

List includes parcels that intersect the FY20 MS4 Service Area

PIN	Street Name	Street Type	Address Number	Status Change	Type (Residential or Commercial)
0302 20A 0005A	MARION	AVE	1204	5/6/2020	R
0311 03 0023	DARNALL	DR	1321	5/26/2020	R
0214 01 0029	PINE HILL	RD	1023	5/29/2020	R
0212 06 0045A	LUPINE	LN	6809	6/3/2020	R
0481 01 0137A	BLAKE	LN	9908	6/16/2020	R

Reduction from Residential Septic Conversions:

TN Edge of Stream Loading (lbs/year/person):	3.6
Average number of people per household for Fairfax County (2010 Census):	2.8
Number of residential conversions:	5

Residential TN reduction (lbs/year) = 50.40

Land Use Changes July 1, 2017 - June 30, 2018

Updated: 9/14/2020

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																				
Luther Jackson I.S.	12/6/2019	-77.232364	38.868179	Land Use Change	Pervious	Forest	18,957	$ 37,150	3.12	0.17	57.86	0	0	0	-	-	-	3.12	0.17	57.86
WQ FCPA @ Churchill Road	12/24/2019	-77.190522	38.949604	Land Use Change	Pervious	Forest	103,229	$ 120,800	16.97	0.90	315.09	4.5	0.03	4.47	10.71	0.86	383.63	27.68	1.76	698.72
WQ FCPA @ Olney	12/24/2019	-77.193613	38.915585	Land Use Change	Pervious	Forest	20,609	$ 22,600	3.39	0.18	62.91	0.95	0.2	0.75	2.27	0.26	163.93	5.66	0.44	226.83
WQ FCPA @ Lewinsville	12/24/2019	-77.189302	38.929283	Land Use Change	Pervious	Forest	64,815	$ 82,200	10.65	0.57	197.84	1.42	0	1.42	3.35	0.27	115.95	14.01	0.83	313.79
WQ FCPA @ Rock Hill	12/24/2019	-77.473033	38.876334	Land Use Change	Pervious	Forest	154,649	$ 170,600	25.42	1.35	472.04	7.1	0.22	6.88	17.11	1.45	686.74	42.53	2.80	1,158.78
WQ FCPA @ Silas Burke	12/24/2019	-77.268319	38.793500	Land Use Change	Pervious	Forest	92,600	$ 87,500	15.22	0.81	282.65	4.25	0.39	3.86	9.62	0.9	498.03	24.84	1.71	780.67
						Total:	**454,859**	**$ 520,850**	**74.77**	**3.98**	**1,388.39**	**18.22**	**0.84**	**17.38**	**43.06**	**3.74**	**1848.28**	**117.84**	**7.71**	**3,236.65**

Redevelopment July 1, 2018 - June 30, 2019

Updated: 9/14/2020

Redevelopment and Oversized Facility Credit (all pollutant loads in lb/yr)
Projects identified in the July 1, 2019 to June 30, 2020 reporting period (on parcels intersecting 2020 MS4)
Calculation process based on Appendix V.E of Guidance Memo 15-2005

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]
0020-INF-12-1	0.02	0.08	0.1	0.66	7.a. Infiltration #1 (Spec #8)	0.11	0.05	0.05	0.09	0.14	0.16	0.02	0.04	25.00%	20.00%	0.13	0.13	0.26	2.50	95%	71.32	14.26	14.26	28.53
0109-MSP-02-1	0.08	2.83	2.71	19.41	3.b. Permeable Pavement #2 (Spec #7)	3.34	0	1.54	0.00	1.54	3.34	-	0.08	2.83%	0.00%	0.00	0.55	0.55	1.10	77%	1,201.95	0.00	33.98	33.98
0437-INF-04-2	0.06	0.22	0.27	1.9	7.b. Infiltration #2 (Spec #8)	0.22	0.08	0.10	0.13	0.23	0.30	0.05	0.11	27.27%	18.52%	0.35	0.42	0.77	2.50	95%	133.72	24.76	29.72	54.48
1247-SP-02-2	0.32	0.48	0.53	3.5	7.a. Infiltration #1 (Spec #8)	0.8	0.05	0.37	0.09	0.46	0.85	0.05	0.37	66.67%	9.43%	0.33	2.11	2.44	1.24	95%	378.88	35.74	228.76	264.50
1298-INF-13-1	0.02	0.12	0.14	1.01	7.b. Infiltration #2 (Spec #8)	0.13	0.02	0.07	0.01	0.08	0.15	0.02	0.04	16.67%	14.29%	0.14	0.14	0.29	1.26	95%	66.86	9.55	9.55	19.10
1298-INF-14-2	0.02	0.11	0.11	0.81	6.b. Bioretention #2 (Spec #9)	0.075	0.045	0.05	0.03	0.08	0.12	-	0.02	18.18%	0.00%	0.00	0.15	0.15	2.00	84%	47.18	0.00	8.58	8.58
1463-MSP-07-2	1.58	1.95	2.95	22.79	StormTech® Isolator Row™, StormTech -A Division of Advanced Drainage Systems, Inc.	4.64	2.73	2.95	0.00	2.95	7.37	1.00	2.58	81.03%	33.90%	7.73	12.21	19.93	0.50	56%	1,927.69	653.46	1,032.46	1,685.92
15414-INF-18-1	0.02	0.06	0.08	0.52	7.a. Infiltration #1 (Spec #8)	0.03	0.1	0.03	0.11	0.14	0.13	0.02	0.04	33.33%	25.00%	0.13	0.13	0.26	2.50	95%	57.95	14.49	14.49	28.97
15414-INF-19-2	0.02	0.07	0.09	0.59	7.a. Infiltration #1 (Spec #8)	0.054	0.086	0.05	0.08	0.13	0.14	0.02	0.04	28.57%	22.22%	0.13	0.13	0.26	2.50	95%	62.40	13.87	13.87	27.73
1815-SP-01-3	0.11	0.11	0.56	4.66	2.f. To Rain Garden #1 (Micro-Bioretention #1) (Spec #9)	1.02	0	0.47	0.00	0.47	1.02	0.45	0.56	100.00%	80.36%	3.74	0.92	4.66	1.00	55%	263.22	211.52	51.70	263.22
2013-INF-12-1	0.02	0.12	0.13	0.92	6.b. Bioretention #2 (Spec #9)	0.078	0.062	0.05	0.04	0.10	0.14	0.01	0.03	16.67%	7.69%	0.07	0.14	0.21	2.29	85%	56.06	4.31	8.62	12.94
20328-INF-02-4	0.07	0.53	0.53	3.84	6.b. Bioretention #2 (Spec #9)	0.41	0.17	0.24	0.00	0.24	0.58	-	0.07	13.21%	0.00%	0.00	0.51	0.51	0.00	79%	214.20	0.00	28.29	28.29
2043-INF-16-1	0.02	0.06	0.06	0.42	7.b. Infiltration #2 (Spec #8)	0.06	0	0.03	0.00	0.03	0.06	-	0.02	33.33%	0.00%	0.00	0.14	0.14	1.10	95%	26.74	0.00	8.91	8.91
2043-INF-18-2	0.02	0.06	0.07	0.45	7.a. Infiltration #1 (Spec #8)	0.03	0.08	0.03	0.08	0.11	0.11	0.01	0.03	33.33%	14.29%	0.06	0.13	0.19	2.50	95%	49.03	7.00	14.01	21.01
24497-INF-01-1	0.04	0.32	0.34	2.38	7.b. Infiltration #2 (Spec #8)	0.3	0.06	0.16	0.03	0.19	0.36	0.02	0.06	12.50%	5.88%	0.14	0.28	0.42	1.31	95%	160.47	9.44	18.88	28.32
24497-INF-03-2	0.03	0.19	0.19	1.35	7.b. Infiltration #2 (Spec #8)	0.17	0.04	0.09	0.02	0.11	0.21	-	0.03	15.79%	0.00%	0.00	0.21	0.21	1.34	95%	93.61	0.00	14.78	14.78
24835-INF-06-1	0.03	0.05	0.05	0.36	7.a. Infiltration #1 (Spec #8)	0.038	0.052	0.03	0.04	0.07	0.09	-	0.03	60.00%	0.00%	0.00	0.22	0.22	2.33	95%	40.12	0.00	24.07	24.07
25783-INF-02-3	0.04	0.15	0.15	1.09	7.b. Infiltration #2 (Spec #8)	0.053	0.117	0.05	0.11	0.16	0.17	-	0.04	26.67%	0.00%	0.00	0.29	0.29	2.50	95%	75.78	0.00	20.21	20.21
3422-INF-02-1	0.04	0.1	0.14	0.97	7.b. Infiltration #2 (Spec #8)	0.13	0.02	0.07	0.01	0.08	0.15	0.04	0.08	40.00%	28.57%	0.28	0.28	0.55	1.26	95%	66.86	19.10	19.10	38.21
3738-SP-03-2	0.65	0.65	0.68	3.47	2.i. To Stormwater Planter (Urban Bioretention) (Spec #9, Appendix A)	0.061	0	0.03	0.00	0.03	0.06	0.03	0.68	100.00%	4.41%	0.15	3.32	3.47	1.00	55%	15.74	10.41	225.58	236.00
					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			
					2.i. To Stormwater Planter (Urban Bioretention) (Spec #9, Appendix A)	0.074	0	0.03	0.00	0.03	0.07								1.00	55%	19.10			
					2.i. To Stormwater Planter (Urban Bioretention) (Spec #9, Appendix A)	0.107	0	0.05	0.00	0.05	0.11								1.00	55%	27.61			
					3.a. Permeable Pavement #1 (Spec #7)	0.05	0	0.02	0.00	0.02	0.05								1.00	75%	17.57			
					3.a. Permeable Pavement #1 (Spec #7)	0.06	0	0.05	0.00	0.05	0.06								1.00	75%	21.08			
					3.a. Permeable Pavement #1 (Spec #7)	0.137	0	0.06	0.00	0.06	0.14								1.00	75%	48.14			
					3.a. Permeable Pavement #1 (Spec #7)	0.076	0	0.04	0.00	0.04	0.08								1.00	75%	26.70			
					3.a. Permeable Pavement #1 (Spec #7)	0.076	0	0.04	0.00	0.04	0.08								1.00	75%	26.70			
					3.a. Permeable Pavement #1 (Spec #7)	0.067	0	0.03	0.00	0.03	0.07								1.00	75%	23.54			
4137-SP-03-2	7.14	7.14	7.67	53.29	The Stormwater Management StormFilter® with Phosphosorb media, Contech Engineered Solutions LLC	12.25	3.1	6.65	1.68	8.33	15.35	0.53	7.67	100.00%	6.91%	3.68	49.61	53.29	0.63	63%	4,519.94	312.33	4,207.61	4,519.94
4285-INF-28-1	0.02	0.06	0.07	0.45	7.a. Infiltration #1 (Spec #8)	0.03	0.08	0.03	0.08	0.11	0.11	0.01	0.03	33.33%	14.29%	0.06	0.13	0.19	2.50	95%	49.03	7.00	14.01	21.01
4342-INF-19-3	0.06	0.19	0.13	1.1	6.a. Bioretention #1 or Urban Bioretention (Spec #9)	0.127	0.113	0.09	0.08	0.17	0.24	-	0.06	31.58%	0.00%	0.00	0.35	0.35	1.89	83%	93.61	0.00	29.56	29.56
4638-INF-03-4	0.04	0.07	0.15	1.21	6.a. Bioretention #1 or Urban Bioretention (Spec #9)	0.16	0.11	0.07	0.19	0.26	0.27	0.08	0.12	57.14%	53.33%	0.65	0.32	0.97	2.50	85%	108.06	57.63	28.82	86.45
5134-INF-155-1	0.02	0.11	0.11	0.7	7.a. Infiltration #1 (Spec #8)	0.078	0.091	0.06	0.07	0.13	0.17	-	0.02	18.18%	0.00%	0.00	0.13	0.13	2.17	95%	75.33	0.00	13.70	13.70
5314-INF-17-1	0.02	0.09	0.19	1.33	7.b. Infiltration #2 (Spec #8)	0.09	0.11	0.07	0.09	0.16	0.20	0.10	0.12	22.22%	52.63%	0.70	0.14	0.84	2.50	95%	89.15	46.92	9.38	56.30
5694-SP-02-2	0.07	0.07	0.08	0.55	3.a. Permeable Pavement #1 (Spec #7)	0.13	0	0.06	0.00	0.06	0.13	0.01	0.08	100.00%	12.50%	0.07	0.48	0.55	1.00	75%	45.68	5.71	39.97	45.68
5863-MSP-01-1	0.07	1.35	1.36	9.98	6.b. Bioretention #2 (Spec #9)		1.52	0.73	0.13	0.86	1.52	0.01	0.08	5.19%	0.74%	0.07	0.51	0.59	1.47	81%	575.33	4.23	29.61	33.84
6650-INF-08-2	0.018	0.0937	0.0946	0.6696	7.b. Infiltration #2 (Spec #8)	0.0693	0.033	0.04	0.02	0.06	0.10	0.00	0.02	19.21%	0.95%	0.01	0.13	0.13	1.62	95%	45.60	0.43	8.68	9.11
6828-INF-27-3	0.04	0.09	0.08	0.59	7.b. Infiltration #2 (Spec #8)	0.09	0	0.04	0.00	0.04	0.09	-	0.04	44.44%	0.00%	0.00	0.26	0.26	1.10	95%	40.12	0.00	17.83	17.83
9754-MSP-01-2	0.05	0.46	0.48	2.94	Jellyfish® Filter, Contech Engineered Solutions LLC	0.95	0	0.44	0.00	0.44	0.95	0.02	0.07	10.87%	4.17%	0.12	0.31	0.43	0.50	56%	248.48	10.35	25.88	36.24
													Total TP Credit	**13.26**			**Total TN Credit**	**93.51**					**Total TSS Credit**	**7,717.41**

[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 2020 MS4 Program Plan and Annual Report

Appendix R17

TMDL Action Plan Implementation Updates Other Than Chesapeake Bay

VSMP Permit Number VA0088587
9-30-2020

Appendix R17 - Local TMDL Action Plan Implementation FY2020

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: • Herrity Concrete Fountain Replacement (rainwater harvesting & bioretention) in the Difficult Run watershed • Old Courthouse Spring Branch Phase 1 stream restoration in the Difficult Run watershed
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	Bull Run: The County has completed the Flatlick Phase I project from Appendix P2.

Implementation Item	Description	Implementation Status
	Appendix P2 of the County's 2016 MS4 Program Plan and Annual Report.	Difficult Run: The County has completed the Penderbrook 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 worked with regional partners to create educational materialsencouraging proper disposal ofmaterials 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	234,466.18	
Bull Run	18,484.11	
Cub Run	164,082.44	
Johnny Moore Creek		
Little Rocky Run	8,863.82	
Popes Head Creek	43,035.81	
Under Construction	-	
Bull Run	-	
Cub Run	-	
Johnny Moore Creek		
Little Rocky Run		
Popes Head Creek	-	
Total	234,466.18	Credit Sharing
Fairfax	234,466.18	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	Credit Sharing
Fairfax	1,158.78	100.0%
Herndon	-	0.0%
Vienna	-	0.0%

Bull Run Total	TSS lbs/year	
Constructed	2,833,843.63	
Bull Run	18,484.11	
Cub Run	2,588,080.94	
Johnny Moore Creek	-	
Little Rocky Run	8,863.82	
Popes Head Creek	218,414.76	
Under Construction	-	
Bull Run	-	
Cub Run	-	
Johnny Moore Creek	-	
Little Rocky Run	-	
Popes Head Creek	-	
Total	2,833,843.63	Credit Sharing
Fairfax	2,833,843.63	100.0%
Herndon	-	0.0%
Vienna	-	0.0%

Difficult Run Stream Restoration	TSS lbs/year	
Constructed	5,440,076.47	
Under Construction	-	
Total	5,440,076.47	Credit Sharing
Fairfax	4,645,825.31	85.4%
Herndon	-	0.0%
Vienna	794,251.16	14.6%

Difficult Run Structural Retrofits	TSS lbs/year	
Constructed	163,245.59	
Under Construction	-	
Total	163,245.59	Credit Sharing
Fairfax	139,411.73	85.4%
Herndon	-	0.0%
Vienna	23,833.86	14.6%

Difficult Run Total	TSS lbs/year	
Constructed	5,603,322.06	
Under Construction	-	
Total	5,603,322.06	Credit Sharing
Fairfax	4,785,237.04	85.4%
Herndon	-	0.0%
Vienna	818,085.02	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
						Subtotal:	**8,101.69**	**2,626.25**	**5,475.43**	**$17,267,082**	**17,688.00**	**943,408.44**	**5,212,201.34**		

* 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	984,653.83	5,440,076.47
Difficult Run Under Construction	-	-
Total Difficult Run	**984,653.83**	**5,440,076.47**
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	38.94065008	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	38.85455732	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	$534,000	2,022.67	CBEE Filtering Practices	Popes Head Creek
						Subtotal:	**329.28**	**132.73**	**196.54**	**$ 6,831,095**	**58,900.85**		

* Adjustments for baseline do not apply to local TMDLs

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

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	8,863.82
Little Rocky Run Under Construction	-
Total Little Rocky Run	**8,863.82**
Difficult Run Complete	163,245.59
Difficult Run Under Construction	-
Total Difficult Run	**163,245.59**
Popes Head Creek Complete	43,035.81
Popes Head Creek Under Construction	-
Total Popes Head Creek	**43,035.81**

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
							Subtotal:	**215,662**	**255,317**	**1,158.78**	

Difficult Run Complete	-
Difficult Run Under Construction	-
Total Difficult Run	**-**
Cub Run Complete	1,158.78
Cub Run Under Construction	-
Total Cub Run	**1,158.78**

Fairfax County 2020 MS4 Program Plan and Annual Report

Appendix R18

Summary of Program Effectiveness

VSMP Permit Number VA0088587
9-30-2020

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 FY19.
A.3.	Legal Authority	The county reviews its ordinances annually to determine if any changes are needed to implement the MS4 Program Plan.	Complete – Chapter 124 has been updated to promoted more effective practices from business areas. There were no changes to the content of Chapter 124, just more clarity for business areas to effectively perform their duties.
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.

MS4 Action ID	Permit Element	Description of Assessment	Outcome
B.2.b.	Retrofitting on Prior Developed Lands	This permit element is assessed by ensuring the county has completed 30 of the projects that were submitted in compliance with Part.I.B.1 of the permit.	Complete – 30 projects constructed.
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. Staff met with DEQ water permitting and enforcement to coordinate future compliance and enforcement actions for unpermitted non-contact cooling water discharges. As a preventive measure, staff conducted follow up inspections of commercial lots that had been identified in

MS4 Action ID	Permit Element	Description of Assessment	Outcome
			FY2019 where road salt had been improperly stored.
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 additional training on spill response is required.	Complete – no changes to program.
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.	The program completed the inspection requirements for IHRR facilities in this permit cycle (with each listed facility inspected at least once). The program began updating the facility list in preparation for the next inspection cycle.
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	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
		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 infrastructure additions and comments by field staff (monitoring programs and IDID) to improve the map accuracy.	
B.2.i.	County Facilities	Each SWPPP location is evaluated to ensure that the SWPPP document is up to date and that inspections and training are conducted as specified. An annual inspection is conducted by MSMD staff to ensure facilities are in compliance.	Complete – the county developed a guidance document to ensure the storm drain labels are assessed in perpetuity.
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 7,070,638 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 repeated throughout the year on an as-needed basis.
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	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

MS4 Action ID	Permit Element	Description of Assessment	Outcome
		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 is currently reviewing the data that has been collected from the program to evaluate potential modifications to the SOP.	in coordination with the IDID program. Complete – No changes were made to the wet weather SOP in the reporting year. In the next reporting year, we will begin using an updated SOP, which modifies our selection protocol, adds new constituents, and begins using more actionable criteria for our inspectors. The County will also monitor new sites for five years to better quantify magnitude and variability of pollutants entering the MS4 as well as estimate pollution loads in addition to concentrations. Any modifications will be documented in the next annual report.
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	The Floatables Monitoring Program SOP was updated to include a methodology to identify additional sites to be

MS4 Action ID	Permit Element	Description of Assessment	Outcome
		floatables from the MS4 to streams in the county.	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 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: Educational outreach materials appropriate for industrial and high risk runoff facilities are being developed in partnership with NVRC.