

CITY OF FAIRFAX, VIRGINIA

PERMIT 4/YEAR 3 (FY2021)

MUNICIPAL SEPARATE STORM SEWER SYSTEM

(MS4) ANNUAL REPORT

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

In accordance with:
VPDES General Permit for
Small Municipal Separate Storm Sewer Systems
Permit # VAR040064



City of Fairfax, Virginia
Public Works - Stormwater
10455 Armstrong Street
Room 200
Fairfax, VA 22030

October 1, 2021



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Signed Certification per Part III K of the MS4 General Permit

"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."

Print Name: Satoshi Eto

Title: Public Works Program Manager

Signature: _____

Date: 10/1/2021

1. Background

This report is submitted by the City, MS4 General Permit Registration Number VAR040064, for the reporting period of July 1, 2020 - June 30, 2021, or Permit Four/Year Three (P4/Y3) under the Virginia Pollutant Discharge Elimination System (VPDES) MS4 General Permit (MS4 General Permit). This report covers the City's efforts to implement its MS4 Program Plan, which was most recently updated on May 1, 2019, to meet the conditions of the MS4 General Permit. The official version of the MS4 General Permit is found via the following link: [MS4 General Permit](#).

The City is required to submit an annual report to remain in compliance with the MS4 General Permit. This annual report describes the City's collective efforts in stormwater management and updates the progress toward meeting the Best Management Practices (BMPs) for each of the 6 Minimum Control Measures (MCMs) and Total Maximum Daily Load (TMDL) requirements identified in the MS4 General Permit.

The City's May 2019 MS4 Program Plan is found via the following link:
<https://www.fairfaxva.gov/government/public-works/stormwater-and-floodplain-management/municipal-separate-storm-sewer-system-ms4>.

2. Self-Evaluation of MS4 Program Implementation

Based on an internal review of our current program, the City of Fairfax is confident that the Minimum Control Measures (MCMs) and BMPs being implemented under our 2018-2023 MS4 Program Plan are appropriate, effective, and meet the requirements of the MS4 General Permit. As such, we do not anticipate the need to make any changes to the City's MS4 Program Plan at this time. The City will continue to monitor the status, appropriateness, and effectiveness of each BMP as part of our iterative process to reduce pollutant loadings and protect water quality to the maximum extent practicable as the implementation of our program continues.

3. Compliance with Minimum Control Measures (MCMs)

The 6 MCMs in the MS4 General Permit form its backbone and make up the basics of what is required in the City's MS4 Program and MS4 Program Plan. Each MCM requires the City to address several specific requirements throughout the MS4 General Permit cycle. Section 4 contains a summary of activities completed during the reporting period for each of the following 6 MCMs:

- Minimum Control Measure #1 - Public Education and Outreach
- Minimum Control Measure #2 - Public Involvement and Participation
- Minimum Control Measure #3 - Illicit Discharge Detection and Elimination
- Minimum Control Measure #4 - Construction Site Stormwater Runoff Control
- Minimum Control Measure #5 - Post-Construction Stormwater Management for New Development and Development on Prior Developed Lands
- Minimum Control Measure #6 - Pollution Prevention/Good Housekeeping for Facilities Within the MS4 Area Owned and Operated by the Permittee

3.1. Minimum Control Measure #1 – Public Education and Outreach

MCM #1 details the expectations and requirements of the City's efforts to increase public knowledge and awareness regarding stormwater pollution, anthropogenic impacts to water quality, and local water quality concerns.

3.1.1. High-Priority Stormwater Issues

The MS4 General Permit requires that the City identify no less than 3 high-priority stormwater issues to meet the goals associated with MCM #1. The following is a list of the high-priority stormwater issues that the City continues to address in its public education and outreach program during P4/Y3:

1. Bacteria pollution
2. Nutrient pollution
3. Illicit discharge of chemical contaminants

3.1.2. Communication Strategies

The 2018 MS4 General Permit further requires the City to annually employ 2 or more of the outreach strategies identified in Table 1 of the MS4 General Permit for each stormwater issue selected. As outlined below, the City used a variety of strategies to communicate each high-priority stormwater issue to the intended audience.

The City chose to employ the communication strategies below in P4/Y3. A summary of the activities/program is provided in the following section (Section 4.1.3). Documentation for each activity is available upon request.

Table 1. Summary of Communication Strategies Utilized in P4/Y3

High-Priority Stormwater Issues	Selected Communication Strategies
Bacteria Pollution	Traditional Written Materials <ul style="list-style-type: none"> • Cityscene Newsletter (9/20, 11/20, 12/20, 1/21, 2/21, 3/21, 4/21, 5/21, 6/21)
	Media Materials <ul style="list-style-type: none"> • NVCWP Twitter – 43 original “Scoop the Poop” tweets • City of Fairfax’s Office of Sustainability Facebook and Twitter
Nutrient Pollution	Traditional Written Materials <ul style="list-style-type: none"> • A Virginian’s Year-Round Guide to Yard Care
	Media Materials <ul style="list-style-type: none"> • Tusico Branch Stream Restoration webpage and video (https://engage.fairfaxva.gov/tusico-branch-stream-restoration-phase-2) • Stafford Drive Stream Restoration webpage and video (https://engage.fairfaxva.gov/stafford-drive-stream-restoration) • NVCWP Twitter – at least monthly original “Reduce Fertilizer Pollution” tweets • City of Fairfax’s Office of Sustainability Facebook and Twitter
Illicit Discharge of Chemical Contaminants	Signage <ul style="list-style-type: none"> • Storm Drain Marking Program
	Media Materials <ul style="list-style-type: none"> • NVCWP Twitter – monthly original “Only Rain” and spill/pollution prevention tweets • City of Fairfax’s Office of Sustainability Facebook and Twitter

3.1.3. Description of Environmental Programs Associated with Communication Strategies

Each year the City performs education and outreach activities related to stormwater and water quality. As part of the City's MS4 Program Plan, the City distributes educational materials to the community and conducts outreach activities about the impacts of stormwater discharges on water bodies and the steps that the public can take to reduce pollutants in stormwater runoff. Public education and outreach

activities conducted during the reporting year were based upon the 3 high-priority water quality issues outlined above.

The City's Department of Public Works (DPW) is the City's stormwater management implementation arm. Stormwater-related initiatives under DPW's lead include implementation of the City's stormwater, urban forestry, street sweeping and trash, recycling, and compost programs. DPW is responsible for orchestrating the public education and outreach program and certain strategies identified above. Working in partnership with the other City departments, citizen volunteers, and local/regional non-profit groups, a variety of education and outreach activities were conducted during the reporting period:

- **Cityscene Newsletter** – Cityscene is produced by the City's Communications and Marketing Office and is a monthly report to the citizens of the City. Topics include City News, City Council Updates, upcoming events and projects, and messaging including stormwater runoff and water quality education.
- **Northern Virginia Clean Water Partners (NVCWP)** – The NVCWP is a group of 19 NOVA local governments, including the City, school systems, independent water and sewer authorities, and local businesses that care about the quality of NOVA waterways. NVCWP provides uniform messaging across NOVA utilizing both radio and TV PSAs as well as social media messaging. NOVA high priority stormwater issues including pet waste, proper household hazardous waste disposal, and implementing residential good housekeeping practices. The NVCWP Annual Summary of Results is provided in **Appendix MCM 1.A**.
The City participated with other local jurisdictions as part of the NVCWP to conduct a regional advertising campaign targeting the most prevalent and controllable forms of contamination in local waterways, including pet waste, household chemicals, and disposal of waste oil. The NVCWP funded an "Only Rain Down the Drain" advertising campaign through Comcast Spotlight and covered the topics of pet waste, lawn care, and auto care. The NVCWP annual report provides information on issues of stormwater quality and the implications on water quality of improper pet waste disposal.
- **A Virginian's Year-Round Guide to Yard Care** – The City's website includes a link to A Virginia Department of Conservation & Recreation publication on tips and techniques for healthy lawns and gardens. Link to publication on the City's website:
<https://www.fairfaxva.gov/government/environment-sustainability/water-and-stormwater-resources/sustainable-landscaping>.
- **Engage Fairfax - Stream Restoration Webpages** – The City's Engage Fairfax webpage includes links to the City's two active stream restoration projects (Tusico Branch Stream Restoration, (Phase 2) and Stafford Drive Stream Restoration) to educate the public on ongoing efforts to improve water quality in the streams.
- **Storm Drain Marking Program** – Previous initiatives to mark storm drains in the city with "Only Rain" decals continue, and markers were placed by city resident volunteers on inlets within the city boundary (examples provided upon request).
- **Environmental Sustainability Council (ESC)** – The ESC advises and assists the City Council and all Boards and Commissions on policies and practices dealing with the environment and energy conservation, including sustainable community development, environment and sustainability education and outreach, habitat and soil restoration, solid waste management and stormwater management. In this capacity, the committee acts as an advocate for protecting, preserving, and enhancing the environment. The committee also provides a means for promoting discussion between the public and private sectors on issues related to the environment. The ESC is composed of City-appointed individuals and City liaisons. The ESC holds regular meetings

throughout the year as well as holds special educational and outreach events to further the environmental commitment expressed by the City.

- **City of Fairfax’s Office of Sustainability Facebook and Twitter** – The Office of Sustainability provides frequent postings to social media with information about sustainability events, activities, plans, and educational information.

3.1.4. Review of MCM #1 Effectiveness

It is the City’s opinion, the current MCM #1 activities are effective at communicating each high-priority stormwater issue to the intended audience. Therefore, the City does not anticipate the need to make any changes to this element of the City’s MS4 Program Plan at this time.

3.2. Minimum Control Measure #2 – Public Involvement and Participation

MCM #2 is designed to both keep the public informed of the City's efforts at minimizing pollutant discharge through its MS4 and to encourage public involvement and participation in pollution prevention efforts.

3.2.1. Summary of Public Input

The 2018 MS4 General Permit requires the City to implement a program designed to allow for public input on the City’s stormwater program and annually report on the input received.

During the P4/Y3 reporting period, the City received and responded to 25 stormwater-related comments and complaints. The following table provides a summary of public input and the City’s responses and resolutions. Documentation for each item below is available upon request.

Table 2. Summary of Stormwater-Related Public Input during P4/Y3

Date	Topic	Comment/Complaint Overview	City Response/Resolution
5/24/21	Drainage	Mosquito potential	Regrading
4/8/21	Drainage	Private property drainage	Consultation
4/7/21	Spills	Discolored creek	Water quality testing
4/7/21	Drainage	Private property drainage	Consultation
4/3/21	Drainage	Private property drainage	Consultation
3/29/21	Drainage	Private property drainage	Consultation
3/28/21	Land Disturbance	Construction site runoff	Controls, water quality testing
1/28/21	Drainage	Private property drainage	Consultation
1/26/21	Spills	Sediment booms in creek	Education
1/20/21	Illicit Discharge	Discolored stream	Drainage area tracking, water quality testing.
1/4/21	Drainage	Private property drainage	Consultation
12/14/20	Drainage	Private property flooding	Blocked pipe cleared
12/7/20	Drainage	Private property drainage	Consultation
12/3/20	Drainage	Private property drainage	Consultation
11/29/20	Drainage	Public property flooding	Maintenance
11/16/20	Drainage	Private property drainage	Consultation
11/15/20	Illicit Discharge	Residential discolored runoff	Site visit, permissible discharge re-routed to avoid runoff issues.
11/9/20	Land Disturbance	Construction site runoff	Controls, water quality testing
10/29/20	Drainage	Private property drainage	Outfall repair
10/21/20	Land Disturbance	Runoff and soil erosion from a construction site	Stop Work Order issued

Date	Topic	Comment/Complaint Overview	City Response/Resolution
10/5/20	Drainage	Private property drainage	Consultation
10/2/20	Drainage	Private property drainage	Education
9/28/20	Drainage	Private property drainage	Consultation
9/24/20	Drainage	Stream erosion	Education
9/14/20	Drainage	Private property drainage	Consultation

3.2.2. MS4 Program/Stormwater Website

The 2018 MS4 General Permit further requires the City to maintain a webpage dedicated to the MS4 program and stormwater pollution prevention. A link to the City’s MS4 Program/Stormwater Website can be found at:

- <https://www.fairfaxva.gov/government/public-works/stormwater-and-floodplain-management/municipal-separate-storm-sewer-system-ms4>

The City updated its stormwater website in P4/Y1 to include the items required by the 2018 MS4 General Permit. During P4/Y3, the City added updated TMDL action plans, IDDE Procedures, and the City’s P4/Y3 Annual Report to the City’s website.

3.2.3. Public Involvement Activities

The 2018 MS4 General Permit further requires the City to implement no less than four activities per year from two or more of the categories listed in Table 2 to provide an opportunity for public involvement to improve water quality and support local restoration and clean-up projects.

The City chose to employ the events below in P4/Y3 to engage the public. A description of the events follows the table below. All documentation is available upon request.

Table 3. Summary of City Sponsored Public Involvement Events in P4/Y3

Category	Event Name(s)	Number of Events Conducted	Beneficial for Improving Water Quality?
Monitoring	N/A	0	N/A
Restoration	Arbor Day	1	Yes
	Invasive Plant Removal Events	2	Yes
Educational Events	Environmental Sustainability Committee (ESC) Meetings	13	Yes
	Build your own Rain Barrel Virtual Workshop	1	Yes
	Backyard Waste Composting Virtual Workshops	1	Yes
Disposal or Collection Events	City Jobs Program (City-wide Clean-up Events)	9	Yes
	Other City Sponsored/Supported Clean-Up Events	4	Yes
Pollution Prevention	N/A	0	N/A
TOTAL		31	--

Description of Public Participation and Involvement events:

1. **Arbor Day** – On October 24, 2021, the City’s ESC taught a seedling planting workshop and provided free seedlings to participants.
2. **Invasive Plant Removal Events** – The City’s Department of Community Development and Planning held two invasive plant removal events 9/27/2020 & 10/4/2020 at Providence Park. A total of 62 volunteers participated in the 2 events with approximately 186 volunteer hours documented.

3. **City ESC Meetings** – FY21 meeting minutes including applicable stormwater-related topics and dates are available upon request.
4. **Build your own Rain Barrel Workshop** – This event, usually held at the City’s Annual Fall Festival, but was moved to a virtual platform due to SARS-COV-2.
5. **City Jobs Program** – A partnership between the City and The Lamb Center (a daytime drop-in shelter for the poor and individuals experiencing homelessness) conducted 9 litter cleanup events along streams within the City:
 - Daniel’s Run (1/28/2021)
 - Draper (1/28/2021)
 - Ranger (1/28/2021)
 - Wilcoxon (1/28/2021)
 - Van Dyck Street (1/28/2021 & 3/11/2021)
 - Hallman Street (3/2/2021)
 - Breckenridge/Sager Trail (3/2/2021)
 - Providence Street (3/11/2021)

A total of 103 trash bags were collected during these cleanup events. Work logs and photos are available upon request.

6. **Other City Sponsored/Supported Clean-Up Events** – The City also partnered with the following 3 groups, providing support for 4 trash pickup events along streams within the City:
 - Eagle Scout Cleanup (4/10/2021)
 - The City supported this project by provided bags, gloves, and trash pickers. Over 1000 lbs. of trash was collected from the stream and properly disposed of.
 - Friends of Accotink Creek Cleanups (4/17/2021 & 4/24/2021)
 - The City provided trash pickup and disposal services for both events.
 - Rodio Park Adopt-A-Spot Fairfax City Community Club 4-H Stream and Park Cleanup (4/2021)
 - The City provided trash pickup and disposal services. Over one hundred pounds of trash was collected and properly disposed of.

3.2.4. Activity Metrics

Although the metrics were affected by the SARS-COV-2 Pandemic, the City believes that its overall Public Involvement and Participation activities were effective during this permit year. The City strongly believes that these activities have a beneficial effect on local water quality.

3.2.5. Collaboration with Other MS4 Permittees

The City is part of the NVCWP and participates in the “Only Rain Down the Storm Drain” initiative. This regional advertising campaign targets the prevention of contamination in local waterways from pet waste, household chemicals, and disposal of waste oil. During the reporting year, 5 watershed placards were placed on stormdrains within the city by volunteers and residents. Photos of the newly installed placards are available upon request.

The other MS4 permittees included in the NVCWP are as follows:

Fairfax County | Loudoun County | Arlington County | Stafford County | City of Alexandria | Fairfax Water | Loudoun Water | George Mason University | City of Falls Church | Town of Herndon | City of Fairfax | Town of Vienna | Town of Leesburg | Town of Dumfries | Northern Virginia Regional

Commission | Virginia Coastal Zone Management Program | Prince William County Public Schools | Alexandria Sanitation Authority

3.2.6. Review of MCM #2 Effectiveness

It is the City’s opinion, the current MCM #2 activities are effective at engaging the public in the City’s stormwater program. Therefore, the City does not anticipate the need to make any changes to this element of the City’s MS4 Program Plan at this time.

3.3. Minimum Control Measure #3 – Illicit Discharge Detection and Elimination

MCM #3 requires the City to maintain a map of the storm sewer system owned and operated by the City, implement and enforce illicit discharge identification and elimination prohibitions and procedures including dry weather screening.

3.3.1. MS4 Map and Outfall Information Table Update Confirmation Statement

The City confirms that the MS4 map and information table have been updated to reflect any changes to the MS4 occurring on or before June 30 of the P4/Y3. The City’s current outfall map is provided in **Appendix MCM 3.A**.

The City’s contractor conducted a stream walk in an effort to refine the City’s MS4 outfall inventory and outfall information table. The outfall inventory may be expanded in P4/Y4 based on the collected data.

3.3.2. Total Number of Outfalls Screened

The City screened 50 outfalls as part of their Outfall Screening Program during P4/Y3. The results of the outfall screenings were categorized as follows:

- 49 outfalls were categorized as “clear”
- 1 outfall was categorized as “illicit”

At the time of screening, there was an obvious oil sheen downstream of the outfall. The outfall was revisited, and no oil was present. The investigation resulted in recategorization of the outfall as “clear”.

Outfall Screening Forms for screened outfalls are available upon request.

The City updated its procedures during the reporting period to address DEQ P4/Y3 annual report review comments. The revised procedures were provided to DEQ and approved during the annual reporting process.

3.3.3. List of Potential Illicit Discharges to the MS4

During this reporting period 11 instances of illicit discharges to the City’s MS4 were identified and investigated, as summarized in the table below:

Table 4. Potential Illicit Discharges to the MS4 Identified and Investigated in P4/Y3

No.	Source	Date	Identification Method	Result	Follow-Up	Closed?
1	Cooking Oil	8/3/20	Complaint	Investigation completed	None	Yes
2	Non-illicit Discharge	8/24/20	Complaint	Investigation completed	None	Yes
3	Concrete Washout	9/30/20	Complaint	Storm drains cleaned by Public Works	None	Yes
4	Hydraulic Fluid Leak	10/7/20	City-Reported	Control measures applied	None	Yes

No.	Source	Date	Identification Method	Result	Follow-Up	Closed?
5	AST Fuel Leak	1/6/21	Complaint	Notice of Violation, control measures applied	Monitoring	Yes
6	Non-illicit Discharge	1/21/21	Complaint	Investigation completed	None	Yes
7	Transmission Fluid Leak	3/5/21	Complaint	Notice of Violation, control measures applied	None	Yes
8	Non-illicit Discharge	3/19/21	Complaint	No specific source located	None	Yes
9	Non-illicit Discharge	4/8/21	Complaint	Investigation completed	None	Yes
10	AST Fuel Leak	6/28/21	Complaint	Notice of Violation, control measures applied	None	Yes
11	Non-illicit Discharge	3/30/21	Dry Weather Screening	Investigation completed	None	Yes

Documentation of the 11 illicit discharges is available upon request, including a memo documenting each incident and a summary table that indicates the status of each incident.

3.3.4. Review of MCM #3 Effectiveness

It is the City’s opinion that the current MCM #3 activities are effective at identifying and eliminating illicit discharges within the City’s jurisdiction. Therefore, the City does not anticipate the need to make any changes to this element of the City’s MS4 Program Plan at this time.

3.4. Minimum Control Measure #4 – Construction Site Stormwater Runoff Control

MCM #4 contains the MS4 General Permit conditions to address discharges to the MS4 from regulated construction site stormwater runoff.

3.4.1. Confirmation Statement

The City confirms that all land-disturbing projects that occurred during the reporting period were conducted in accordance with the City’s approved Virginia Erosion and Sediment Control Program (VESCP).

3.4.2. Total Number of VESCP Inspections Conducted

The City performed 306 VESCP inspections in P4/Y3.

3.4.3. Total Number and Type of VESCP Enforcement Actions

Three formal enforcement actions were necessary to achieve compliance. Sixty-two total sites were notified of deficiencies via the VESCP inspection reports and were found compliant after a second, or third re-inspection. Copies of formal deficiency notifications and enforcement actions are available upon request.

3.4.4. Review of MCM #4 Effectiveness

The City determined that its VESCP and VSMP programs are effective and consistent with the Virginia Stormwater Management Act and VSMP Regulations. DEQ did not review the City’s local VESCP and Virginia Stormwater Management Program (VSMP) through the agency’s periodic review and therefore did not provide any documentation for evaluation by the City. Therefore, the City does not anticipate the need to make any changes to this element of the City’s MS4 Program Plan at this time.

3.5. Minimum Control Measure #5 – Post-Construction Stormwater Management for New Development and Development on Prior Developed Lands

MCM #5 contains the MS4 General Permit conditions to address discharges to the MS4 from post-development stormwater runoff. The City implements a Virginia Stormwater Management Program (VSMP).

3.5.1. Total Number of Privately Owned SWM Facility VSMP Inspections Conducted

The City performed 377 Privately Owned SWM Facility Inspections in P4/Y3. Private BMP Inspection Forms are available upon request.

3.5.2. Total Number and Type of VSMP Enforcement Actions

Of the 377 BMPs private BMPs inspected, 105 BMPs were found to require maintenance or repair during this reporting period and the corresponding Inspection Reports were sent to property owners requiring maintenance. To-date, 66 Notices to Comply have been sent as a follow-up to the Inspection Reports. BMPs that remain non-compliant will be referred to the City Attorney. A spreadsheet of enforcement records, and examples of typical BMP Inspection Reports, Notices to Comply, Maintenance Reports, and Compliance Letters are available upon request.

3.5.3. Total Number of City-Owned/Operated SWM Facility VSMP Inspections Conducted

The City performed 38 Publicly Owned SWM Facility VSMP inspections in P4/Y3. A list of Public BMP Inspections is available upon request.

3.5.4. Description of Significant Maintenance, Repair, or Retrofit Activities Performed

The FY2021 public BMP maintenance scope summary of activity highlights is attached in **Appendix MCM 5.A**.

3.5.5. Confirmation Statement Regarding Compliance with Virginia Construction Stormwater General Permit database

The City confirms that it submitted stormwater management facility information through the Virginia Construction Stormwater General Permit database for those land-disturbing activities for which the City was required to obtain coverage under the General VPDES Permit for Discharges of Stormwater from Construction Activities.

3.5.6. Confirmation Statement Regarding Electronically Reporting BMPs Using the DEQ BMP Warehouse & Submission Date

The City confirms that it electronically reported BMPs using the DEQ BMP Warehouse in accordance with Part I E 5 g. The information was submitted in February 2021.

3.5.7. Review of MCM #5 Effectiveness

It is the City's opinion, the current MCM #5 activities are effective at addressing discharges to the MS4 from post-development stormwater runoff. Therefore, the City does not anticipate the need to make any changes to this element of the City's MS4 Program Plan at this time.

3.6. Minimum Control Measure #6 – Prevention/Good Housekeeping for Facilities Within the MS4 Area Owned and Operated by the Permittee

MCM #6 defines the MS4 General Permit’s conditions and requirements for minimizing pollutant discharge associated with City facilities and operations.

3.6.1. Summary of Any Operational Procedures Developed or Modified

The City has not developed or modified any of its operational procedures during this reporting period. The City's written procedures for the reduction or elimination of stormwater pollution or other potential water quality impairments during the execution of daily tasks and duties are implemented and adequate. No updates were required for these SOPs during the reporting period.

3.6.2. Summary of Any New SWPPPs Developed

The City did not identify any new City-owned and/or operated facilities that have a high potential for discharging pollutants; therefore, no new SWPPPs were developed during the reporting period.

3.6.3. Summary of Any Modified SWPPPs or Delisted Facilities

The City’s Property Yard facility is the only high-priority municipal facility that was determined to have a high potential of discharging pollutants. The City modified the existing Property Yard SWPPP Map to show site improvements related to pollution prevention control. In P4/Y3 the City also performed monthly inspections at the Property Yard to ensure the implementation of good housekeeping practices. The City did not delist any facilities during this reporting period. The revised SWPPP map and P4/Y3 monthly inspection reports are available upon request.

3.6.4. Summary of New Turf and Landscape Nutrient Management Plans (NMPs) Developed

The City maintains NMPs for the 6 facilities presented below. The NMP for each facility was updated during the reporting period.

Table 5. City-Maintained NMPs

Facility Name	Acreage	Previous Start Date	Updated Start Date
Kutner Park	1.68	February 2018	January 2021
Lanier Middle School	5.31	February 2018	January 2021
Providence Elementary School	4.70	February 2018	January 2021
Daniels Run Elementary School	2.96	February 2018	January 2021
Green Acres Center –	3.68	February 2018	January 2021
Pat Rodio Park	2.91	February 2018	January 2021

The City has not identified any new City-owned and/or operated lands where nutrients are applied to a contiguous area greater than one acre; therefore, no new nutrient managements plans were developed during this reporting period.

3.6.5. Training Events Conducted

The City conducted Pollution Prevention/Good Housekeeping training for the City Property Yard Staff on January 13, 2021. Eighteen City staff members were in attendance.

The following topics were presented at this training:

1. Impacts of Stormwater Pollution on the Environment
2. Virginia Pollutant Discharge Elimination System (VPDES) Program
3. Introduction to Property Yard Stormwater Pollution Prevention Plan (SWPPP) Requirements
4. Facility Overview
5. Good Housekeeping Procedures
6. Spill Prevention and Emergency Cleanup

Training documentation is available upon request.

3.6.6. Review of MCM #6 Effectiveness

It is the City's opinion, the current MCM #6 activities are effective at addressing discharges to the MS4 from City operations. Therefore, the city does not anticipate the need to make any changes to this element of the City's MS4 Program Plan at this time.

4. Compliance with Total Maximum Daily Load (TMDL) Special Conditions

EPA has approved the following 9 TMDLs, which require the City to develop and implement TMDL action plans:

- Chesapeake Bay TMDL Action Plan
- Accotink Creek Chloride TMDL Action Plan
- Accotink Creek Sediment TMDL Action Plan
- Bull Run Sediment TMDL Action Plan
- Popes Head Creek Sediment TMDL Action Plan
- Accotink Creek Fecal Coliform TMDL Action Plan
- Difficult Run Sediment TMDL Action Plan
- Difficult Run E. Coli TMDL Action Plan
- Occoquan River E. Coli TMDL Action Plan

City stormwater discharges have also been allocated a PCB wasteload in the TMDL of PCBs for Tidal Portions of the Potomac and Anacostia Rivers in the District of Columbia, Maryland, and Virginia.

Sections 4.1 and 4.2 contain a summary of activities completed and progress toward meeting required pollutant reductions for the approved TMDLs.

4.1. Chesapeake Bay TMDL Special Condition Reporting Requirements

The City operates an MS4 in the Potomac River watershed, which is a tributary to the Chesapeake Bay. As such, the MS4 General Permit Part II A, Chesapeake Bay TMDL Special Condition (CB Special Condition), applies to the City's MS4 discharges. The CB Special Condition requires that the City develop and maintain a Chesapeake Bay TMDL Action Plan that addresses pollutants of concern, or POCs, (nitrogen, phosphorus, and sediment) from the following:

- Transitional Sources
- New Sources
- Nutrient Application at defined City Facilities
- Existing Sources

The City continued with the implementation of its Phase II Chesapeake Bay TMDL Action Plan during the reporting cycle. In addition to continued implementation of its local VESCP and VSMP programs, the City progressed with pollution reduction strategies creditable towards meeting the required existing load reductions. The following is provided to meet the MS4 General Permit Chesapeake Bay Special Condition reporting requirements.

4.1.1. List of BMPs Implemented during the Reporting Period but Not Reported to the DEQ BMP Warehouse and Estimated Reduction of Pollutants of Concern Achieved by Each and Reported Pounds per Year

The City completed the first phase of construction associated with the restoration of Tusico Creek. The calculations for this phase were previously submitted as part of the City’s Chesapeake Bay TMDL Action Plan and in the previous reporting cycle’s annual report. The City will apply the credits shown in the table below towards its pollutant load reductions.

Table 6. Tusico Creek Phase I – Pollutant Reduction Credits Associated with Phase I of the Tusico Creek Restoration

Tusico Creek Phase I - Stream Restoration Pollutant Removal Efficiency Worksheet					
Stream:	NF Accotink Creek	River Basin:	Potomac	Coastal Plain:	No
Calc. Method:	Interim Rates				
		Stream Length	Rate	Total	Unit
Interim Rates for Sediment 44.88/LF		900.00	44.880	40,392.00	lbs./yr.
Interim Rate for TN		900.00	0.075	67.50	lbs./yr.
Interim Rate for TP		900.00	0.068	61.20	lbs./yr.

During the reporting period, the City also initiated an internal Chesapeake Bay TMDL compliance assessment designed to identify additional pollutant reduction efforts undertaken by the City but not previously accounted for in the Chesapeake Bay TMDL Action Plan or the City’s pollutant reduction accounting. These potentially creditable City activities, such as requiring pollutant load reductions as part of redevelopment on prior developed lands, are being reviewed for potential applicability and will be quantified in future annual reports.

4.1.2. Credits Acquired during the Reporting Period to Meet all or a Portion of the Required Reductions or Statement that Credits were Acquired

The City did acquire any nutrient credits through use of the Virginia Nutrient Credit Exchange Association during the current reporting period. The City does expect to enter into a private exchange agreement with the Noman Wastewater Treatment Facility to assure compliance in meeting nitrogen load reductions.

4.1.3. Progress, Using the Final Design Efficiency of the BMPs, toward Meeting the Required Cumulative Reductions for Total Nitrogen, Total Phosphorus, and Total Suspended Solids

Table 7 demonstrates the City’s status in meeting the pollutant reductions defined in its Phase II Chesapeake Bay TMDL Action Plan. Based on Table 7, the City has reached the following percentages of its 2023 milestones as of this reporting period:

- Nitrogen – 8%
- Phosphorus – 59%
- Sediment – 46%

The City’s apparent limited progress in meeting the 2023 milestone reductions is a direct result of DEQ’s modification of how street cleaning credits are calculated in its Guidance Memo - GM20-2003. Although the City could take credit for its street sweeping efforts during this reporting cycle, the City has chosen not to include them in order to align compliance planning as soon as possible. The City will continue to review the potential for crediting associated with street sweeping and incorporate creditable loads associated with its street cleaning program in future annual reports.

Table 7. Status of City of Fairfax in Meeting Chesapeake Bay Phase II Pollutant Reduction Requirements

POC	Compliance Assessment	Phase II Reduction Requirements, lbs. (40%)	Project		
			Daniels Branch SR, lbs.	Annual Street Sweeping, lbs. ¹	Tusico Branch SR Phase I
Nitrogen	Phase I Reduction Requirements	1,521.87	-	-	-
	Project Reduction Credit	-	57.38	0.00	67.50
	Cumulative Reduction Credits	-	57.38	57.38	124.88
	Remaining Required Reductions	1,521.87	1,464.49	1,464.49	1,396.99
Phosphorus	Phase I Reduction Requirements	193.23	-	-	-
	Project Reduction Credit	-	52.02	0.00	61.20
	Cumulative Reduction Credits	-	52.02	52.02	113.22
	Remaining Required Reductions	193.23	141.21	141.21	80.01
Sediment	Phase I Reduction Requirements	163,968.28	-	-	-
	Project Reduction Credit	-	34,333.20	0.00	40,392.00
	Cumulative Reduction Credits	-	34,333.20	34,333.20	74,725.20
	Remaining Required Reductions	163,968.28	129,635.08	129,635.08	89,243.08

4.1.4. List of BMPs Planned for Implementation During Next Reporting Period

The City anticipates completion of the following BMPs during the next reporting cycle.

1. Tusico Creek Stream Restoration, Construction Phase II

Tusico Creek stream restoration continues with the City having initiated construction on the second phase. Pollutant reduction credits are based upon the calculations utilized to prepare and submit the City's Stormwater Local Assistance Fund grant application package to DEQ and can be found in Table 8.

Table 8. Tusico Creek Construction Phase II Stream Restoration Calculated Pollutant Load Reduction Credits

Tusico Creek Phase II - Stream Restoration Pollutant Removal Efficiency Worksheet					
Stream:	NF Accotink Creek	River Basin:	Potomac	Coastal Plain:	No
Calc. Method:	Interim Rates	Stream Length	Rate	Total	Unit
Interim Rates for Sediment 44.88/LF		985	44.88	44,206.80	lbs./yr.
Interim Rate for TN		985	0.075	73.88	lbs./yr.
Interim Rate for TP		985	0.068	66.98	lbs./yr.

2. City Hall Pond Retrofit

The City anticipates completion of the City Hall Pond Retrofit during the next reporting cycle. Pollutant reduction credits are based upon the calculations utilized to prepare and submit the

¹ Per DEQ GM-20-2003, the mass loading approach previously utilized by the City to calculate annual credits associated with street sweeping efforts will no longer be applicable as of June 30, 2022. As such, the pollutant reductions associated with street sweeping were not utilized to demonstrate compliance with the 2023 milestones.

City's Stormwater Local Assistance Fund grant application package to DEQ and can be found in Table 9.

Table 9. City Hall Pond Retrofit Calculated Pollutant Load Reduction Credits

City Hall Pond Retrofit Calculations		
Methodology used was obtained from the <i>DEQ Guidance Memo No. 20-2003 - Chesapeake Bay TMDL Special Condition Guidance</i> , dated November 12, 2020.		
BMP Retrofit Type:	BMP Enhancement	
BMP Treatment Practice:	Dry Detention Pond	
Note: Classification obtained from Table V.C.1 - Chesapeake Bay Program BMPs, Established Efficiencies		
Existing Drainage Basin Parameters		
Drainage Basin Information		
Drainage Basin	Potomac River Basin	-
Nitrogen Loading Rate		
Regulate Impervious	16.86	lbs./ac./yr.
Regulate Pervious	10.07	lbs./ac./yr.
Phosphorus Loading Rate		
Regulate Impervious	1.62	lbs./ac./yr.
Regulate Pervious	0.41	lbs./ac./yr.
Total Suspend Solids Loading Rate		
Regulate Impervious	1,171.32	lbs./ac./yr.
Regulate Pervious	175.8	lbs./ac./yr.
Note: Loading rates obtained from Table 3b of the Virginia Administrative Code (9VAC25-890-40) General Permit		
BMP Drainage Basin Information		
Total Drainage Area	3.49	ac.
Impervious	1.56	ac.
Pervious	1.93	ac.
Total Pollutant Load In The BMP Drainage Basin		
Nitrogen	45.74	lbs./yr.
Phosphorus	3.32	lbs./yr.
Total Suspend Solids	2,166.55	lbs./yr.
Removal Efficiency Calculations		
Existing BMP Efficiency		
Nitrogen	5	%
Phosphorus	10	%
Total Suspend Solids	10	%
Note: Efficiencies obtained from Table V.C.1 - Chesapeake Bay Program BMPs, Established Efficiencies (Dry Detention Pond)		
Existing BMP Efficiency Modification		
Missing Forebay	10	%
Missing Micropool	10	%
Missing Length/Width	2	%
Total	22	%
Revised Existing BMP Efficiency		
Nitrogen	3.9	%
Phosphorus	7.8	%
Total Suspend Solids	7.8	%
Proposed BMP Efficiency		

City Hall Pond Retrofit Calculations		
Nitrogen	20	%
Phosphorus	20	%
Total Suspend Solids	60	%
Note: Efficiencies obtained from Table V.C.1 - Chesapeake Bay Program BMPs, Established Efficiencies (Dry Extended Detention Pond)		
Final Removal Efficiency & Pollutant Reduction		
BMP Efficiency Difference		
Nitrogen	16.1	%
Phosphorus	12.2	%
Total Suspend Solids	52.2	%
Final Pollutant Load Reduction		
Nitrogen	9.15	lbs./yr.
Phosphorus	0.66	lbs./yr.
Total Suspend Solids	1,299.93	lbs./yr.

3. Outfall Restoration Pilot Project

The City anticipates completion of the Outfall Restoration Pilot Project during the next reporting cycle. Pollutant reduction credits are based upon the calculations utilized to prepare and submit the City’s Stormwater Local Assistance Fund (SLAF) grant application package to DEQ. The SLAF grant application is provided in **Appendix Special Conditions**.

The City anticipates the following pollutant load credits upon completion of this project:

- Nitrogen – 134 lbs./yr.
- Phosphorus – 61.72 lbs./yr.
- Sediment – 117,540.33 lbs./yr.

4. Additional Pollutant Reduction Strategies

The City anticipates additional pollutant reductions as a result of redevelopment within the City. These pollutant reductions will be initiated by private investment and the City cannot estimate their pollutant removal or provide their design calculations prior to their submission and approval by the City.

4.2. Local TMDL Special Condition Reporting Requirements

The City has developed the following 9 local TMDL Action Plans to address local impairments for which the City MS4 was allocated a stormwater wasteload:

- Bacteria-Specific Action Plans
 - Accotink Creek Fecal Coliform TMDL Action Plan
 - Difficult Run E. coli TMDL Action Plan
 - Occoquan River E. coli TMDL Action Plan
- Chloride-Specific Action Plans
 - Accotink Creek Chloride TMDL Action Plan, **newly created for the 2021 reporting cycle**
- Sediment-Specific Action Plans
 - Accotink Creek Sediment TMDL Action Plan, **newly created for the 2021 reporting cycle**
 - Bull Run Sediment TMDL Action Plan
 - Difficult Run Sediment TMDL Action Plan
 - Popes Head Creek Sediment TMDL Action Plan

As described above, City stormwater discharges have also been allocated a PCB wasteload in the TMDL of PCBs for Tidal Portions of the Potomac and Anacostia Rivers in the District of Columbia, Maryland, and Virginia. The required reductions associated with the City’s PCB wasteload in the PCB TMDL is due directly to the Margin of Safety and is expected to be met by the proposed reductions in atmospheric depositions.

4.2.1. Summary of Local TMDL Action Plan Implementation Actions Conducted

The City relies heavily on pollutant reductions associated with implementation of its MS4 Program Plan. Progress in implementation of the MS4 Program Plan is documented in the main body of the Annual Report. Tables 10, 11, and 12 provide a summary of the activities completed during the reporting cycle specific to the pollutant-type and watershed.

Table 10. City Activities Completed During the Reporting Cycle Specific to Reducing Bacteria in Response to Bacteria-Related Wastewater Allocations

Activity	TMDL Action Plan BMP	Applicable TMDL Action Plan		
		Accotink Creek	Difficult Run	Occoquan River
Continued Implementation of City MS4 Program Plan	Numerous	✓	✓	✓
“Scoop the Poop” Ads in Monthly Cityscene Newsletter	Public Outreach and Community Activities	✓	✓	✓
Promotion of Sanitary Lateral Assistance Program in December 2020 Cityscene	Public Outreach and Community Activities	✓	✓	✓
“What Citizens Can Do” Webpage including Proper Disposal of Pet Wastes	Public Education Using City’s Stormwater Webpage	✓	✓	✓
Provided and Maintained Pet Waste Stations at the City Dog Park, 11000 Berry Street	Public Outreach and Community Activities	✓	✓	✓
Requirement to Remove Pet Wastes in All City Parks	Prevention of Illicit Substances into Storm Sewer System	✓	✓	✓
Continued Participation in Northern Virginia Regional Partners “Only Rain” Outreach Program	Additional Public Education Material – “Only Rain Down the Storm Drain”	✓	✓	✓
Continued Sanitary Lateral Repair and Replacement Program	Prevention of Illicit Substances into Storm Sewer System	✓	✓	✓
Continued Repair and Replacement on City Sanitary Infrastructure	Prevention of Illicit Substances into Storm Sewer System	✓	✓	✓
Continued Street Sweeping Throughout City (Suspended Due to COVID in 12/20)	Other BMPs. Street Sweeping	✓	✓	✓
Partnered with GMU to Continue Watershed Water Quality Monitoring	Implement WQ Monitoring Program	✓	Water Quality Monitoring Results are Provided in Table 13.	
	Prepare WQ Monitoring Reports			

Table 11. City Activities Completed During the Reporting Cycle Specific to Reducing Chloride in Response to Chloride-Related Wastewater Allocations

Activity	TMDL Action Plan BMP	Applicable TMDL Action Plan
		Accotink Creek
Developed Accotink Creek Chloride TMDL Action Plan	Submission of Local TMDL Action Plan to DEQ	✓
Continued Implementation of City MS4 Program Plan	Numerous	✓
Maintained City “Winter Salt Smart” Webpage	Additional Public Education Material – “Winter Smart Tips”	✓
Continued Participation in Northern Virginia Regional Partners “Only Rain” Outreach Program	Additional Public Education Material – “Only Rain Down the Storm Drain”	✓
Provided Covered Storage for Long-term Salt Storage	Prevention of Illicit substances into storm sewer system	✓
Utilized Anti-Icing (Brine) Prior to Winter Weather Events to Minimize Salt Application	Develop and Implement Salt Management Plan	✓
Provided Secondary Containment for Brine Storage	Develop and Implement Salt Management Plan	✓
Applied Pre-Wet Salt as a Deicing Agent during Winter Weather Events	Develop and Implement Salt Management Plan	✓
Employed Good Housekeeping Practices to Minimize Salt Release as a Result of Loading/Unloading	Develop and Implement Salt Management Plan	✓
Washed Salt-Contaminated Vehicles and Equipment in Sanitary Sewer Connected CUE Bus Bay	Develop and Implement Salt Management Plan	✓
Continued Street Sweeping Throughout City (Suspended Due to COVID in 12/20)	Other BMPs. Street Sweeping	✓

Table 12. City Activities Completed During the Reporting Cycle Specific to Reducing Sediment in Response to Sediment-Related Wastewater Allocations

Activity	TMDL Action Plan BMP	Applicable TMDL Action Plan			
		Accotink Creek	Bull Run	Difficult Run	Popes Head Creek
Developed Accotink Creek Sediment TMDL Action Plan	Submission of Local TMDL Action Plan to DEQ	✓			
Continued Implementation of City MS4 Program Plan	MS4 Program Plan	✓	✓	✓	✓
Continued Implementation of VESCP Program	City of Fairfax Erosion and Sediment Control (E&SC) Ordinance	✓	✓	✓	✓
Continued Implementation of VSMP Program	Implementation of VA Stormwater Management Program	✓	✓	✓	✓
Continued Implementation of Chesapeake Bay Preservation Ordinance	VSMP Permits	✓	✓	✓	✓
Continued Street Sweeping Throughout City (Suspended Due to COVID in 12/20)	Other BMPs. Street Sweeping	✓	✓	✓	✓
Completed Phase I of Tusico Creek Stream Restoration	Chesapeake Bay TMDL Action Plan	✓			
Initiated Construction on Phase II of Tusico Creek Stream Restoration	Chesapeake Bay TMDL Action Plan	✓			
Installed Streambank Stabilization in Mosby Woods	Prevention of Illicit substances into storm sewer system	✓			
Partnered with GMU to Continue Watershed Water Quality Monitoring	Implement WQ Monitoring Program	✓	Water Quality Monitoring Results are Provided in Table 13.		

Table 13. City of Fairfax/George Mason University Accotink Creek Water Quality Monitoring During the Reporting Cycle

Parameter	Monitoring Location											
	Station A Daniels Run at St Andrews Dr			Station B Middle Fork Accotink Creek off Spring Lake Terr			Station C Accotink Creek just above Old Lee Hwy			Station D Accotink Creek just below Pickett Rd		
Sample Date	10/6/20	1/19/21	4/6/21	10/6/20	1/19/21	4/6/21	10/6/20	1/19/21	4/6/21	10/6/20	1/19/21	4/6/21
Sample Time	9:08:26 AM	9:02:24 AM	9:11:41 AM	9:57:43 AM	9:44:09 AM	9:53:52 AM	9:41:25 AM	9:31:10 AM	9:40:10 AM	9:25:30 AM	9:16:41 AM	9:26:54 AM
Temperature (°C)	12.5	3.5	11.9	12.6	4.1	12.6	13.4	4	12.8	13.8	3.8	12.6
Specific Conductance (umho/cm)	269	373	361	445.3	447	585	523.8	522	642	452.5	483	561
Dissolved Oxygen (mg/L)	92	14.26	11.74	92.5	12.8	12.86	89	13.08	10.47	80.8	12.65	9.77
Dissolved Oxygen (% saturation)	9.8	107.4	108.8	9.82	98	121	9.29	100	99	8.36	96.2	92.1
pH	7.41	7.58	7.45	7.39	7.81	7.56	7.19	7.59	7.37	7.21	7.56	7.32
Turbidity (NTU)	0.21	0.8	0.6	0.67	14.3	1.3	1.37	3.7	2.1	1.81	2.2	2.2
Nitrate + nitrite (mg/L as N)	0.942	1.3	0.88	1.537	2.1	1.3	1.552	2.1	1.35	1.273	1.8	1.13
Total phosphorus (mg/L as P)	0.047	0.02	0.021	0.025	0.135	0.02	0.02	0.04	0.017	0.027	0.031	0.021
Total suspended solids (mg/L)	1.64	1.41	4.5	1.89	14.23	2.9	2.68	4.18	2.9	3.45	2.75	3.3
Volatile suspended solids (mg/L)	0.93	0.79	1.4	0.86	1.94	1.3	1.09	1.49	1.1	1.48	1.19	1.1
Escherichia coli (#/100 mL)	89	65	75	260	60	53	235	87	180	250	76	317



Appendix MCM 1.A

Northern Virginia Clean Water Partners Annual Summary of Results

July 1, 2020 – June 30, 2021



Photo: Burke Lake Park in Fairfax, VA
 Source: Fairfax County Park Authority

Northern Virginia Clean Water Partners Annual Summary of Results July 1, 2020 – June 30, 2021

www.onlyrain.org

Polluted stormwater runoff is the number one cause of poor water quality in streams and rivers in Northern Virginia. When it rains and snows, the water runs off streets, driveways, yards and parking lots and mixes with pesticides, grass clippings, fertilizer, bacteria, road salt, and oil. All this pollution enters the storm drains on the street and is discharged directly to a stream. The runoff is not filtered or sent to a wastewater treatment facility.

To reduce the impacts of stormwater pollution, the Northern Virginia Clean Water Partners came together to change peoples' behavior through a public education campaign.

About the Partnership

The Northern Virginia Clean Water Partners is composed of a group of local governments, drinking water and sanitation authorities, and businesses that share the common goals to keep Northern Virginia residents

healthy and safe by reducing the amount of pollution from stormwater runoff that reaches local creeks and rivers, and empower individuals to take action to reduce pollution. To meet these goals, the Partners work together to:

- Identify high priority water quality issues for the region.
- Identify the target audience(s) for outreach.
- Educate the region's residents on simple ways to reduce pollution around their homes.
- Monitor changes in behavior through surveys and other data collection techniques; and
- Pilot new cost-effective opportunities for public outreach and education.

Membership is voluntary and each member makes an annual contribution to fund the program. By working together, the partners can leverage their funds to develop and place bilingual educational products with

common messages and themes, thereby extending the campaign's reach.

Only Rain Down the Storm Drain is the motto of the partnership.

The 2021 campaign helped to satisfy MS4 (Municipal Separate Storm Sewer System) Phase I and Phase II permit requirements for stormwater education and documenting changes in behavior.

For more information visit www.onlyrain.org



2021 Campaign Overview and Accomplishments

In 2021, the Northern Virginia Clean Water Partners selected the following high priority water quality issues to focus on for the Campaign:

- bacteria,
- nutrients,
- salt, and
- illicit discharge (i.e., motor oil, pesticides, and hhw).

The Partners identified the target audiences for these issues as pet owners, homeowners with a lawn or garden, home mechanics and do-it-yourselfers, and members of the public who apply winter salt.

The campaign used television, print, internet advertising, Facebook, Twitter, and the [Only Rain Down the Storm Drain](#) website to distribute messages linked to specific stormwater issues, such as proper pet waste disposal, responsible fertilizer use on lawns and gardens, and proper disposal of detergents, paints, stains, and auto fluids.

In addition to the multi-media campaign, partners participated in local events to raise awareness and encourage positive behavior change in residents. The social media posts, television and internet ads featured the well-known national symbol of non-point source pollution, the rubber ducky.



771,115

Premium digital TV impressions* (cable network ads)

1,641,042

Total social media impressions (Facebook and Twitter)

48,095

Engagements with social media posts (Facebook and Twitter)

9,662

Visits to the www.onlyrain.org website

3,000

Storm drain labels distributed throughout the region

500

Survey Responses

**Impressions are the number of times an ad appeared on a single television or computer screen.*

Throughout the campaign year, the Partners made the following efforts to educate the public and promote awareness of impacts of stormwater pollution:

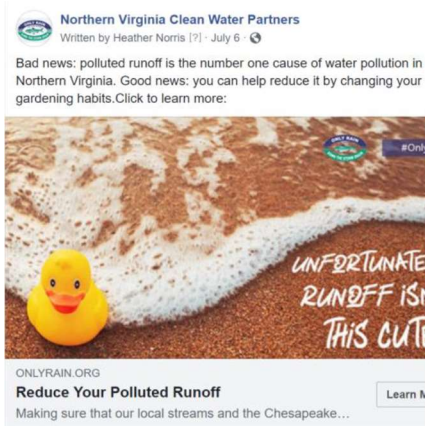
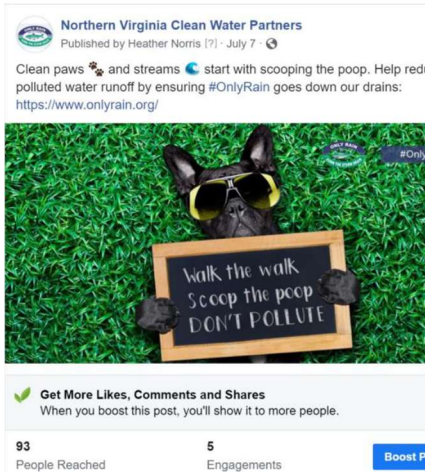
- From July 2020 through June 2021, aired four Public Service Announcements (2 in English and 2 in Spanish) on 44 English language cable TV networks, and four Spanish language networks a total of 761,756 times. The ads featured messages on the importance of picking up pet waste and general household stormwater pollution reduction measures.

As a new strategy in 2020, the Partners contracted with a digital communications firm to develop and implement a social media

campaign on Facebook and Twitter. The results so far have shown that these platforms are an effective way to engage with the target audiences.

- Since July 1, 2020, the Facebook page has gathered an additional 271 page likes and 275 fans.
- During this time there were 244 published posts, 46,875 post engagements, and 41,050 post clicks
- Facebook outreach campaigns reached 1,360,699 individuals and led to 23,820 clicks through to the website.





- Since July 1, 2020 the Clean Water Partners Twitter page has gained: 81,066 impressions, 1220 total engagements, 105 post link clicks, and 77 followers.
- We have tweeted 398 times leading to: 198 retweets and 199 likes.
- Continued to update and maintain the Northern Virginia Clean Water Partners website.



Stormwater Survey Results

The Partners conducted an online survey of 500 Northern Virginia residents to understand the general awareness of stormwater runoff, determine the effectiveness of the ads, aid in directing the future efforts of the campaign, and to reveal any changes in behavior.

General Awareness Findings:

Nearly half (47%) of respondents either don't know where storm water ends up or believes that it goes to a wastewater treatment plant. This indicates that there is a need to educate residents that stormwater drains are directly connected to local waterways.

Close to one third (29%) of respondents recalled seeing the ad on TV, Facebook, or Twitter after watching the video clip in the survey which is a statistically significant increase from 2020. This indicates that using social media to conduct outreach is an effective way to reach residents. Of those who recalled seeing the ads, 42 percent state they already take action to protect clean water, 46 percent state they now pick up their pet waste more often, 19 percent state that they now properly dispose of motor oil, and 32 percent state they plan to fertilize fewer times per year.

When shown the Only Rain Down the Storm Drain logo, 61 percent of the respondents recognized it compared to 54 percent in 2013. This increase indicates that **awareness of the logo has increased over time.**

Regardless of whether respondents have seen the ads or logo, 34 percent reported they had received information about reducing water pollution in the past 12 months. **The 2021 result was significantly higher than in 2018 (24%) and 2019 (22%).** Even though more than half of respondents feel at least somewhat confident that they would know where to report potential water pollution, only 53 percent would report water pollution if they saw it. Interestingly, 8 percent of respondents from Prince William County indicated they "definitely would not" report potential water pollution. This suggests **there is a need for education on what pollution may look like and encourage residents to report it if they see something.**

The majority (65%) of respondents indicated that they were aware their locality has a specific place to drop off household hazardous waste.

Understanding Behaviors

In addition to capturing responses to questions regarding the effectiveness of the campaign, the survey gathered information on the current behaviors and attitudes of Northern Virginia residents as they relate to pet waste management, lawn care, and motor oil disposal. Responses to these questions support the development of future messages and targeted promotion.

Interestingly, dog ownership increased significantly (14

percent) in the region since the COVID-19 pandemic began. **During this time, the percent of respondents reporting that they pick up dog waste on walks decreased by 12 percent.** This suggests that there is ample opportunity to do outreach to new pet owners about picking up waste.

The most important reason dog owners are motivated to pick up their pet's waste is because "It's what good neighbors do". The number of respondents choosing "It causes water pollution" as the main reason has fluctuated and was the fourth most common reason in 2021.

77% of lawn and garden owners fertilize their lawns at least once per year no matter what. **Among those who fertilize once a year, 19 percent fertilize in the spring and only six percent fertilize in the fall.** This suggests that there is room to educate residents of Northern Virginia that fertilizing in the fall is better for local waterways.

Among those who fertilize their lawn, only four percent of respondents indicated that they fertilize based on results of a soil test. Slightly less than one-third (29%) in 2021 leave their grass clippings on their lawn, while half (49%) bag their grass clippings for disposal indicating the need for education on "greener" lawn care practices.

After reading a description of a rain barrel, rain garden, and conservation landscaping,

respondents were asked if they had implemented these features at their home or had heard about them. **In a significant increase over 2020 (6%), eleven percent reported having a rain barrel, while five percent reported having a rain garden, and twelve percent reported having conservation landscapes in their yard.**

Additionally, the percentage of respondents that reported never hearing of all three practices has decreased and the percentage of respondents interested in getting them has increased since 2020. This implies that general awareness and interest of these practices is increasing. **There is a significant opportunity to continue to promote these practices to homeowners and build awareness of how they can reduce stormwater runoff.**

Consistent with past years, most respondents take their vehicle to a service station for oil changes (71%) or take used oil to a gas station or hazmat facility for recycling (15%). **However, approximately ten percent of Northern Virginians reported storing used motor oil in their garage, placing it in the trash or dumping it down the storm drain, sink or on the ground.**

Overall, the 2021 campaign demonstrated that using a multi-media approach that includes traditional cable TV, streaming TV, website, and social media platforms will reach a large portion of the population of Northern Virginia.

To keep moving the needle towards building a culture of water quality stewardship, there is a need to combine public outreach with community based social marketing tools.

The FY22 campaign will be utilizing additional tools such as: 1) an interactive on-line pledge to adopt a new clean water behavior, 2) new "made for social media" psa's for target audiences, 3) an e-newsletter, and 4) a Clean Water Facebook Group for people to interact with each other.

All the tools mentioned above will continue to shape a robust behavior change campaign that keeps pace with the ever-evolving ways that the people of Northern Virginia consume information.

NORTHERN VIRGINIA 2021 WATER QUALITY SURVEY

Although the entirety of the Northern Virginia region is in the Potomac River watershed, many Northern Virginians are underinformed about actions they can take to reduce pollution in stormwater runoff.



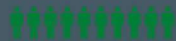
Where do you believe stormwater goes?

60%

of NoVA residents think it eventually ends up in the Potomac River or Chesapeake Bay



AND



Around 40% of NoVA residents either don't know where it goes or believe it goes to a wastewater treatment plant.



59%

of Northern Virginians feel at least somewhat confident that they would know where to report potential water pollution.

BUT ONLY

53%

are likely to report water pollution if they saw it.



About four in ten residents of Northern Virginia feel they are most prevented from taking action to protect clean water because they **DON'T KNOW WHAT TO DO.**



1/3

About **1/3** of NoVA residents have seen or received information about reducing water pollution in the past 12 months.

Although improperly disposed pet waste is a major source of bacteria in stormwater,

ONLY 14%

of dog owners in Northern Virginia believe **water pollution** is the most important reason to pick up after your pet.

77% of lawn owners in Northern Virginia **fertilize** their lawn at least once a year.

ONLY 6% fertilize once in the Fall, even though fertilizing **once a year in the fall** is better for local waterways.



71%

of car/truck owners take their vehicle to a mechanic for oil changes

15%

take used oil to a gas station or hazmat facility for disposal

10%



store used oil in their garage, put it in the trash or dump it down the storm drain, sink or on the ground.

About 1/3 of NoVA residents are **unaware** of whether their locality has a specific place to drop off



HOUSEHOLD HAZARDOUS WASTE

One in five Northern Virginians



ARE INTERESTED IN GETTING A RAIN BARREL.

Only Rain Down the Drain

www.onlyrain.org

For more information:

Corey Miles
Senior Environmental
Planner
703-642-4625
3040 Williams Drive, Suite
200
Fairfax, VA 22031
cmiles@novaregion.org

2021 Northern Virginia Clean Water Partners

Fairfax County | Arlington County | Loudoun County | Fairfax Water |
City of Alexandria | City of Fairfax | City of Falls Church | City of Manassas | Town of Leesburg |
Town of Dumfries | Prince William County | Northern Virginia Regional Commission | George Mason University |
Virginia Coastal Zone Management Program | Fairfax County Public Schools | Prince William County Public
Schools | Northern Virginia Soil and Water Conservation District



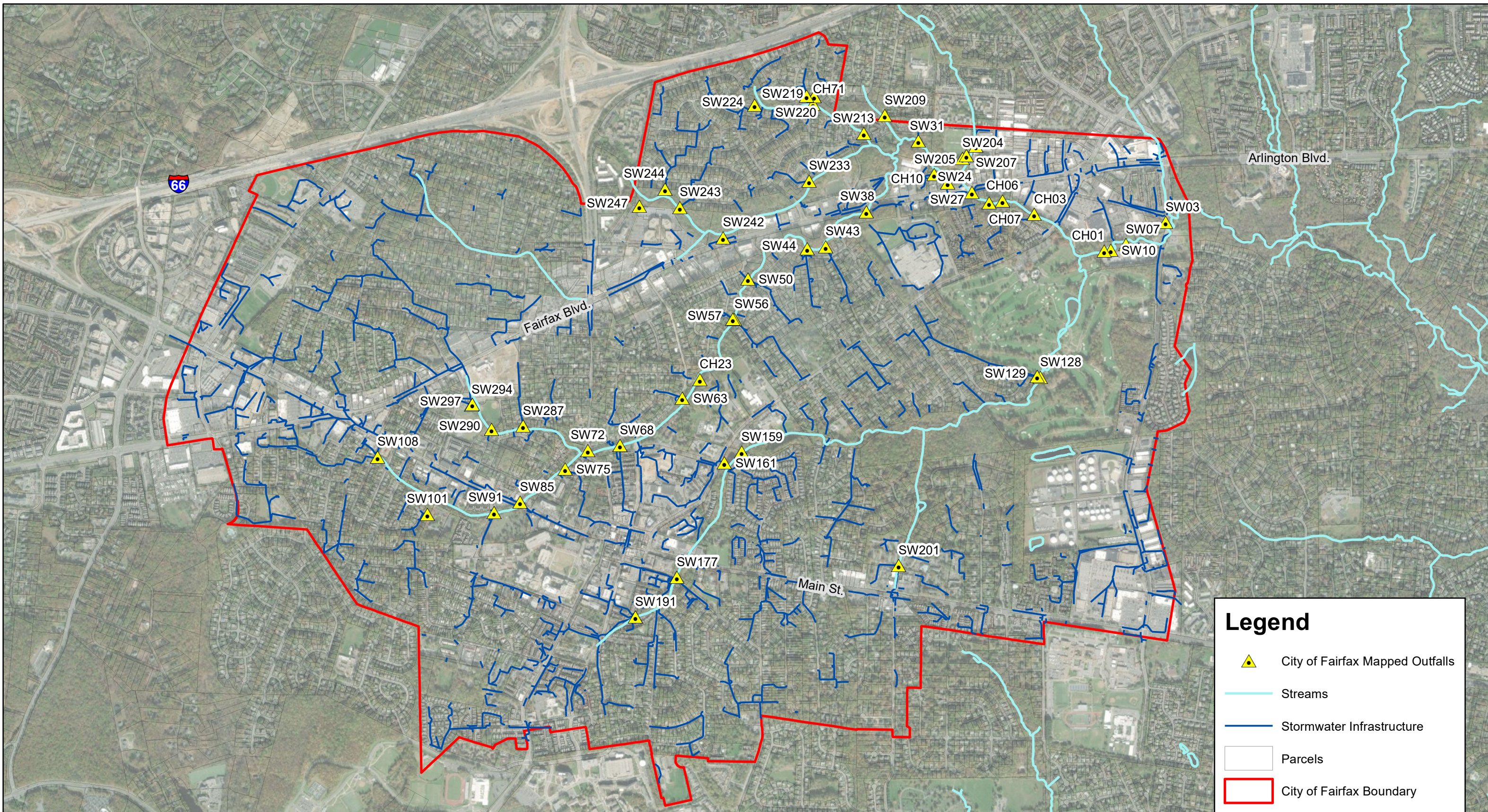
Summary prepared by NVRC on behalf of the Partners

August, 2021



Appendix MCM 3.A

City of Fairfax MS4 Outfall Map



NOTES:

1. Vertical Datum: NAVD88
2. 51 Outfalls Inspected for the 2021 Annual Report

**CITY OF FAIRFAX
MS4 OUTFALLS MAP**

0 1,500 3,000 6,000 Feet

TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.
www.timmons.com



Appendix MCM 5.A

City of Fairfax FY2021 Public BMP Maintenance Highlights

2020 City of Fairfax – Maintenance Highlights

Draper Drive Park – 9797 Beech Drive

Bioretention – 2009020166

- Remove excess/overgrown vegetation.
- Remove sediment, debris, litter, and weeds.
- Repair any erosion and reseed bare areas as needed.
- Replenish mulch layer as needed to provide 3" layer of mulch on the surface.



Fairfax Boulevard Parcel/ Fairfax Blvd West of Rebel Run

Detention Pond – 2005050141

- Remove excess/overgrown vegetation.
- Remove sediment, debris, litter, and weeds.
- Repair any erosion and reseed bare areas as needed.
- Clear the low flow orifice, trash rack, and control structure as needed.



Fairfax City Hall – 10455 Armstrong Street

Bioretention – 2005030135

- Remove excess/overgrown vegetation.
- Remove sediment, debris, litter, and weeds from bioretention area and inflows at edge of pavement.
- Check plantings, provide replacement list as needed.
- Replenish mulch layer as needed to provide 3" layer of mulch on the surface.



Fairfax City Hall – 10455 Armstrong Street

Filterras – 2005030136 & 137

- Remove accumulated sediment, debris, and deteriorated mulch from the Filterra and replenish the mulch layer as necessary.
- Conduct maintenance per Contech guidelines.



Fairfax Police Station – 3730 Old Lee Hwy

Detention Pond – 2007050154

- Remove excess/overgrown vegetation.
- Remove sediment, debris, litter, and weeds.
- Repair any erosion and reseed bare areas as needed.
- Clear the low flow orifice, trash rack, and control structure as needed.



Burke Station – 4016 Burke Station Road

BayFilter – 20191333285

- Potential orifice blockage
- Clear manifolds and drain down module. Correct standing water in facility. Drain down module should not allow standing water to remain.

Old Town Square – 10386 Main Street

Pervious Pavers – 2015107241 & 137

- Vacuum accumulated sediment and debris from the permeable pavement. Replace #68 stone between pavers as necessary to bring to grade.

Providence Park – 10615 Canfield Street

Bioretention – 2010010174

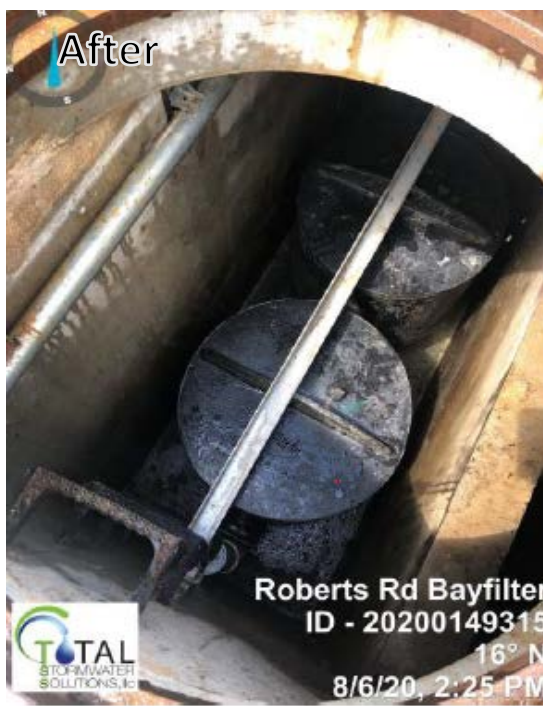
- Remove excess/overgrown vegetation.
- Remove sediment, debris, litter, and weeds.
- Check plantings, provide replacement list as needed.
- Repair any erosion and reseed bare areas as needed.
- Replenish mulch layer as needed to provide 3" layer of mulch on the surface.
- Clear the low flow orifice, trash rack, and control structure as needed.



Roberts Road Streetscape – 4040 Roberts Road

BayFilter – 2020149315

- Potential orifice blockage
- Clear manifolds and drain down module. Correct standing water in facility. Drain down module should not allow standing water to remain.



Fairfax High School – 3501 Rebel Run

StormFilter – 2005050140

- Repair bilco doors to allow access and future maintenance
- Flush facility to remove sediment and debris



Historic Blenheim House – 3610 Old Lee Highway

Bioretention – 2007050155

- Remove excess/overgrown vegetation.
- Remove sediment, debris, litter, and weeds.
- Check plantings, provide replacement list as needed.
- Repair any erosion and reseed bare areas as needed.
- Replenish mulch layer as needed to provide 3" layer of mulch on the surface.



Historic Blenheim House – 3610 Old Lee Highway

Detention Pond – 2007050154

- Remove excess/overgrown vegetation
- Remove sediment, debris, litter, and weeds.
- Repair any erosion and reseed bare areas as needed.
- Clear the low flow orifice, trash rack, and control structure as needed.



Pickett Road Trail Underpass – 3410 Pickett Road

Bioretention – 2018172278

- Remove excess/overgrown vegetation.
- Remove sediment, debris, litter, and weeds.
- Check plantings, provide replacement list as needed.
- Repair any erosion and reseed bare areas as needed.
- Replenish mulch layer as needed to provide 3" layer of mulch on the surface.



Stacy C Sherwood Community Center – 3407 Old Lee Highway

Bioretention – 2010109243

- Remove excess/overgrown vegetation.
- Remove sediment, debris, litter, and weeds.
- Check plantings, provide replacement list as needed.
- Repair any erosion and reseed bare areas as needed.
- Replenish mulch layer as needed to provide 3" layer of mulch on the surface.
- Clear the low flow orifice, trash rack, and control structure as needed.



Stafford Drive Park – 3300 Stafford Drive

Bioretention – 2007010152

- Remove excess/overgrown vegetation.
- Remove sediment, debris, litter, and weeds.
- Check plantings, provide replacement list as needed.
- Repair any erosion and reseed bare areas as needed.
- Replenish mulch layer as needed to provide 3" layer of mulch on the surface.
- Clear the low flow orifice, trash rack, and control structure as needed.





Appendix Special Conditions

City of Fairfax Outfall and Gully Stabilization Projects (OGSP) Stormwater Local Assistance Fund (SLAF) Grant Application Project



Pollution Reduction Calculation Methodology narrative

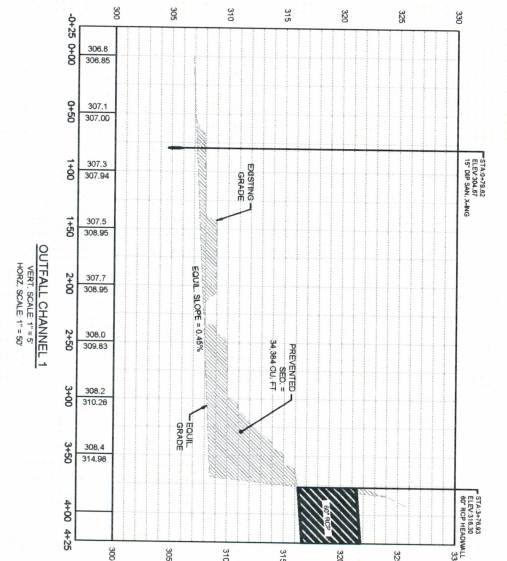
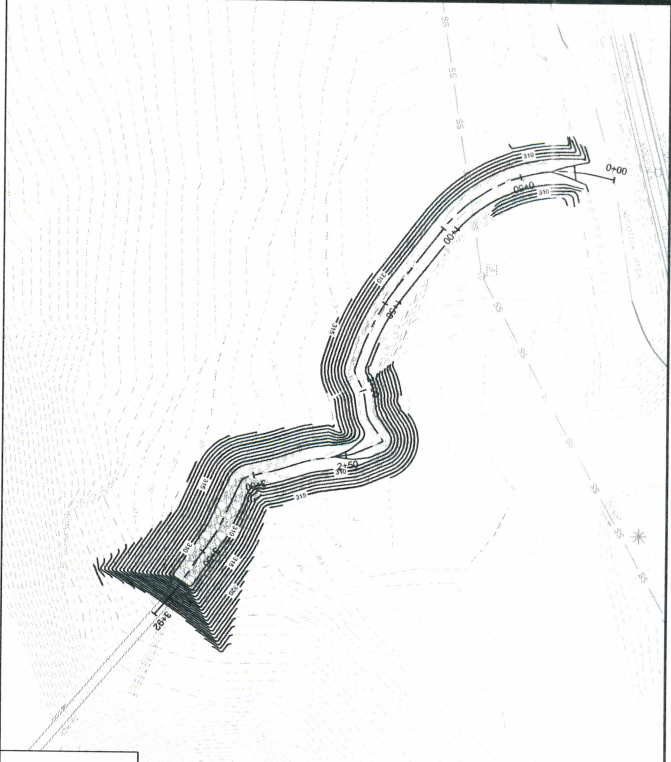
Crediting for the City of Fairfax - Outfall and Gully Stabilization Projects (OGSP) was performed utilizing the methodologies outlined in Protocol 5 (*Recommendations for Crediting Outfall and Gully Stabilization Projects in the Chesapeake Bay Watershed*). Calculation methodologies and preliminary crediting for the outfall restoration can be found in the Plan Set Assembly located in the Section F Appendix. Table 1 outlines the Pollutant of Concern (POC) Reduction summary for the potential restoration of the five (5) outfalls.

Table 1. City of Fairfax – Outfall and Gully Stabilization Projects – Pollutant of Concern Reduction Summary

Outfall-ID	Outfall Length (ft.)	Outfall Drainage Area (Ac.)	Estimated Phosphorous Reduction Provided (lbs./yr.)	Estimated Nitrogen Reduction Provided (lbs./yr.)	Estimated TSS Reduction Provided (lbs./yr.)
OTFL-1	376.93	56.80	25.36	55.06	48,296.36
OTFL-2	90.66	2.21	11.68	25.35	22,241.12
OTFL-3	48.57	1.15	4.08	8.86	7,769.70
OTFL-5	150.00	15.98	6.37	13.84	12,136.00
OTFL-10	245.12	28.77	14.23	30.89	27,097.04
			61.72	134.00	117,540.22

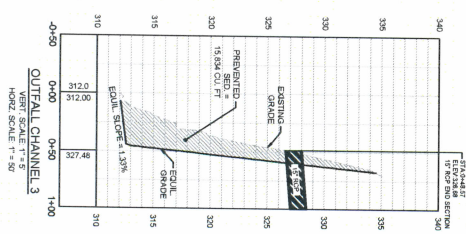
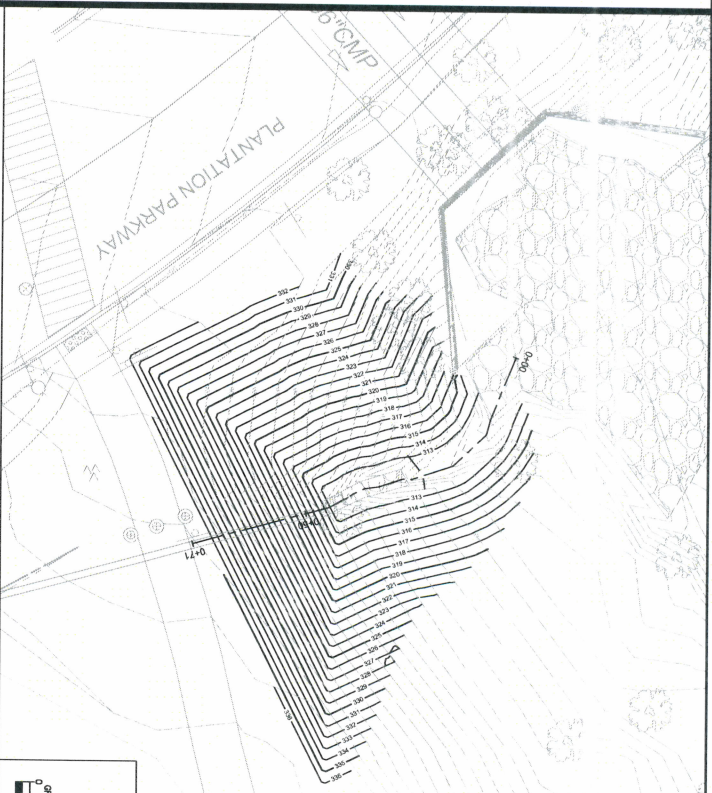


Existing Outfall Channel Condition Parameters	
Drainage Area (A _d) =	56.8 ac
Drainage Area (A _d) =	0.2300 km ²
Mean Flow Depth =	3.500 ft
Bulk Density (Field) =	0 lb/ft ³
Step 1 - Define the Existing Channel Conditions	
Length of Proposed Reach =	376.53 ft
Channel Slope =	0.025 ft/ft
Bank Height =	5.36 ft
Bottom Width =	9.63 ft
Top Width =	27.23 ft
Bulk Density (Estimate) =	84 lb/ft ³
Step 2 - Define the Equilibrium Channel Conditions	
Is there a pipe outfall or other defining infrastructure present upstream of the restoration site?	
Upstream limit L _{max} = 133A _d ^{0.316}	
Maximum Upstream Channel Length (L _{max}) =	Not Applicable
Choose Bed Condition =	Equilibrium Bed Slope
Bed Condition 1 =	Bed Condition 1
Bed Condition 2 =	Sand and Fine Gravel (0.15-mm particle size)
Bed Condition 3 =	Beds Coarser than Sand (>5mm particle size)
Equilibrium Slope (S _{eq}) =	S _{eq} = 0.00264 ^{-0.316}
Equilibrium Slope (S _{eq}) =	Sand and Fine Gravel S _{eq} = 0.05 / (V ^{0.316} * 62.43)
Equilibrium Slope (S _{eq}) =	Not Applicable
Equilibrium Slope (S _{eq}) =	Bed Coarser than Sand
Bank Slopes =	Equilibrium Bank Slopes
Bottom Width =	Future bottom width (est) 10 ft
Step 3 - Calculate the Total Prevented Sediment	
Volume of Prevented Sediment = Existing Channel Condition - Equilibrium Channel Condition	
Volume of Prevented Sediment (S _p) =	1,273.47 cu. yd.
Volume of Prevented Sediment (S _p) =	34,368.69 cu. ft.
Step 4 - Convert the Total Sediment Volume to Annual Prevented Sediment Load	
Adjust for Reduction in Efficiency and Timescale S _p = 0.515 / (.30)	
Annual Volume of Prevented Sediment (S _p) =	573.06 cu. ft. / year
Adjust for Soils Bulk Density	
Annual Prevented Sediment Load (Estimate) =	Annual Volume of Prevented Sediment * Bulk Density
Annual Prevented Sediment Load (Field) =	Missing Field Bulk Density Sample
Step 5: Determine the Annual Prevented Nutrients	
Conversion Factors	
1.05 lb. of Phosphorus (P) =	1 ton of sediment
2.28 lb. of Nitrogen (N) =	1 ton of sediment
Estimated Phosphorus (P) =	25.36 lbs./year
Actual Phosphorus (P) =	55.06 lbs./year
Actual Nitrogen (N) =	Missing Field Bulk Density Sample
Estimated Pollutant of Concern (POC) Crediting Summary	
Phosphorus (P) Removal Rate =	48,296.36 lbs./year
Nitrogen (N) Removal Rate =	25.36 lbs./year
	55.06 lbs./year

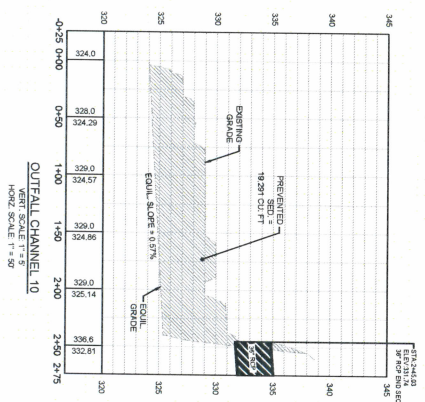
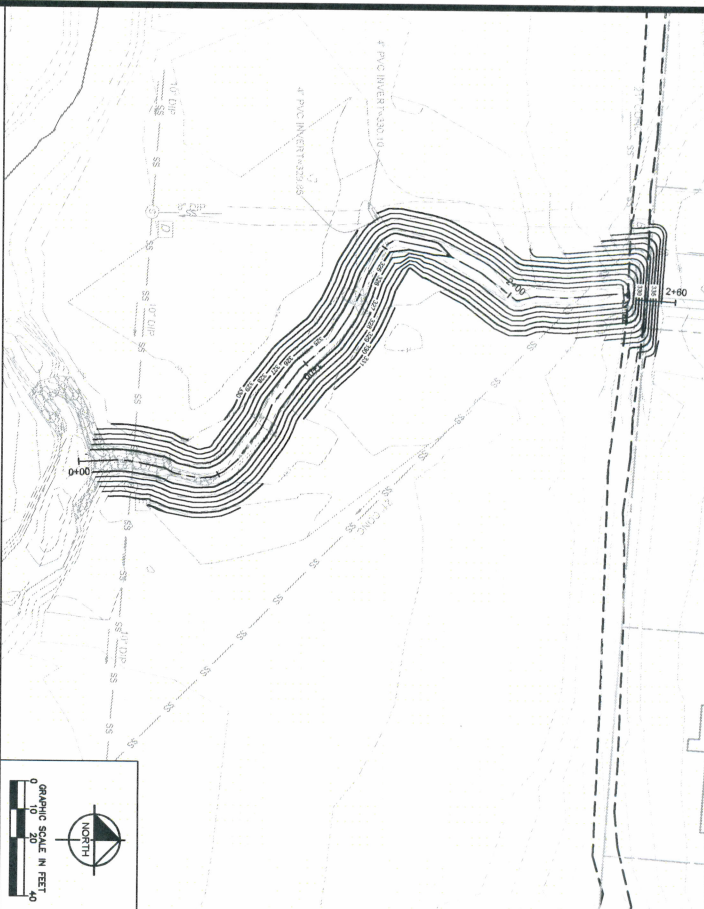


SHEET NUMBER 22	POC CREDITING SUMMARY (OUTFALL 1) OUTFALL AND GULLY RESTORATION PREPARED FOR CITY OF FAIRFAX PUBLIC WORKS	KHA PROJECT 116557004			Kimley-Horn 11600 COMMERCE PARK DR., SUITE 400, RESTON, VA 20191 PHONE: 703-476-1300 FAX: 703-476-1300 WWW.KIMLEY-HORN.COM	LICENSED PROFESSIONAL No. _____ DATE _____ BY _____
		SCALE AS SHOWN DESIGNED BY J.A.C. DRAWN BY J.A.C. CHECKED BY J.P.D.				

Existing Outfall Channel Condition Parameters	
Drainage Area (A _d) =	1.15 ac
Drainage Area (A _d) =	0.0047 km ²
Mean Flow Depth =	0.533 ft
Bulk Density (field) =	0 lb/ft ³
Step 1 - Define the Existing Channel Conditions	
Length of Proposed Reach =	48.57 ft
Channel Slope =	0.277 ft/ft
Bank Height =	2.40 ft
Bottom Width =	2.70 ft
Top Width =	6.87 ft
Bulk Density (estimate) =	84.2778 lb/ft ³
Step 2 - Define the Equilibrium Channel Conditions	
Is there a pipe outfall or other defining infrastructure present upstream of the restoration site?	Yes
Upstream limit	
Maximum Upstream Channel Length (L _{max}) =	Not Applicable
Equilibrium Bed Slope =	Not Applicable
Choose Bed Condition =	Bed Condition 1
Bed Condition 1 =	Cohesive Bed
Bed Condition 2 =	Sand and Fine Gravel (0.15-mm particle size)
Bed Condition 3 =	Beds Coarser than Sand (5-mm particle size)
Bed Condition 1: Cohesive Bed	
S _{eq1} = 0.00284 @ 10	
Equilibrium Slope (S _{eq1}) =	0.0085 ft/ft
Sand and Fine Gravel	
S _{eq2} = 0.051 (V = 62.43)	
Equilibrium Slope (S _{eq2}) =	Not Applicable ft/ft
Bed Coarser than Sand	
Equilibrium Slope (S _{eq3}) =	Not Applicable ft/ft
Bank Slopes =	Equilibrium Bank Slopes
Bottom Width =	Future Bottom Width (est) 3 ft
Step 3: Calculate the Total Prevented Sediment	
Volume of Prevented Sediment - Existing Channel Condition - Equilibrium Channel Condition	
Volume of Prevented Sediment (S _p) =	204.87 Cu. Yd.
Volume of Prevented Sediment (S _p) =	5,531.49 Cu. Ft.
Step 4: Convert the Total Sediment Volume to Annual Prevented Sediment Load	
<i>Adjust for reduction in Efficiency and Timescale</i>	
Annual Volume of Prevented Sediment (S _a) =	92.19 Cu. Ft./year
<i>Adjust for Soils Bulk Density</i>	
Annual Prevented Sediment Load = Annual Volume of Prevented Sediment * Bulk Density	
Annual Prevented Sediment Load (Estimate) =	7,769.70 lb/year
Annual Prevented Sediment Load (field) =	Missing Field Bulk Density Sample lb/year
Step 5: Determine the Annual Prevented Nutrients	
Conversion Factors	
1.05 lb. of Phosphorus (P) =	1 ton of sediment
2.28 lb. of Nitrogen (N) =	1 ton of sediment
Estimated Phosphorus (P) =	4.08 lbs./year
Estimated Nitrogen (N) =	8.86 lbs./year
Actual Phosphorus (P) =	Missing Field Bulk Density Sample lbs./year
Actual Nitrogen (N) =	Missing Field Bulk Density Sample lbs./year
Estimated Pollutant of Concern (POC) Crediting Summary	
Total Suspended Solids (TSS) Removal Rate =	7,769.70 lbs./year
Phosphorus (P) Removal Rate =	4.08 lbs./year
Nitrogen (N) Removal Rate =	8.86 lbs./year



Existing Outfall Channel Condition Parameters			
Drainage Area (A _d) =	28.77	ac	
Drainage Area (A _u) =	0.1165	km ²	
Mean flow depth =	1.933	ft	
Bulk Density (γ _{sed}) =	0	lb _m /ft ³	
Step 1: Define the Existing Channel Conditions			
Length of Proposed Reach =	246.12	ft	
Channel Slope =	0.032	ft/ft	
Bank Height =	2.46	ft	
Bottom Width =	7.60	ft	
Top Width =	30.10	ft	
Bulk Density (Estimate) =	84	lb _m /ft ³	
Step 2: Define the Equilibrium Channel Conditions			
Is there a pipe outfall or other defining infrastructure present upstream of the restoration site? Yes			
Upstream Limit L _{up} = 153A _d ^{0.15}			
Maximum Upstream Channel Length (L _{max}) =	Not Applicable	ft	
Choose Bed Condition = Equilibrium Bed Slope			
Bed Condition 1 =	Cohesive Bed	Bed Condition 1	
Bed Condition 2 =	Sand and Fine Gravel (0.1-5mm particle size)	Bed Condition 2	
Bed Condition 3 =	Beds Coarser than Sand (>5mm particle size)	Bed Condition 3	
Equilibrium Slope (S _{eq}) =	S _{eq} = 0.00284 (0.23)	ft/ft	
Equilibrium Slope (S _{eq}) =	Sand and Fine Gravel	ft/ft	
Equilibrium Slope (S _{eq}) =	S _{eq} = 0.06 / (V ^{0.43}) = 62.43)	ft/ft	
Equilibrium Slope (S _{eq}) =	Bed Coarser than Sand	ft/ft	
Equilibrium Slope (S _{eq}) =	Equilibrium Bank Slopes	ft/ft	
Bank Slopes =	Future Bottom Width (ft)	ft	
Bottom Width =	4.5	ft	
Step 3: Calculate the Total Prevented Sediment			
Volume of Prevented Sediment = Existing Channel Condition - Equilibrium Channel Condition			
Volume of Prevented Sediment (S _p) =	714.49	Cu. Yd	
Volume of Prevented Sediment (S _p) =	19,291.23	Cu. Ft.	
Step 4: Convert the Total Sediment Volume to Annual Prevented Sediment Load			
Adjust for Reduction in Efficiency and Timescale S _p = 0.5 (S _p / 30)			
Annual Volume of Prevented Sediment (S _a) =	321.52	Cu. Ft./Year	
Adjust for Solids Bulk Density			
Annual Prevented Sediment Load = Annual Volume of Prevented Sediment * Bulk Density			
Annual Prevented Sediment Load (Estimate) =	27,697.04	lb./Year	
Annual Prevented Sediment Load (Field) =	Missing Field Bulk Density Sample	lb./Year	
Step 5: Determine the Annual Prevented Nutrients			
Conversion Factors			
1.05 lb. of Phosphorus (P) =	1 ton of sediment	lbs./year	
2.28 lb. of Nitrogen (N) =	1 ton of sediment	lbs./year	
Estimated Phosphorus (P) =	14.23	lbs./year	
Actual Phosphorus (P) =	30.89	lbs./year	
Actual Nitrogen (N) =	Missing Field Bulk Density Sample	lbs./year	
Actual Nitrogen (N) =	Missing Field Bulk Density Sample	lbs./year	
Estimated Pollutant of Concern (POC) Crediting Summary			
Total Suspended Solids (TSS) Removal Rate =	27,697.04	lbs./year	
Phosphorus (P) Removal Rate =	14.23	lbs./year	
Nitrogen (N) Removal Rate =	30.89	lbs./year	



POC CREDITING SUMMARY (OUTFALL 10) OUTFALL AND GULLY RESTORATION PREPARED FOR CITY OF FAIRFAX PUBLIC WORKS	KHA PROJECT 110557004 DATE 07/20/2021 SCALE AS SHOWN DESIGNED BY JAC DRAWN BY JAC CHECKED BY JLD		1140 COMMERCE PARK DR., SUITE 400, RESTON, VA 20191 PHONE: 703-674-1300 FAX: 703-674-1300 WWW.KIMLEY-HORN.COM © 2021 KIMLEY-HORN AND ASSOCIATES, INC.	LISTED REVISIONS NO. REVISIONS DATE BY
	POC CREDITING SUMMARY (OUTFALL 10) OUTFALL CHANNEL 10 VERT SCALE 1" = 5' HORIZ SCALE 1" = 50' SHEET NUMBER 26			