MS4 ANNUAL REPORT
PERMIT NUMBER VAR040106

September 2020

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Subject: GEORGE MASON UNIVERSITY MS4 ANNUAL REPORT, PERMIT NUMBER VAR040106

Dated: September 26, 2020

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.

Sincerely,

Frank Strike, P.E.
Vice President of Facilities

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Table of Contents

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ABBREVIATIONS and ACRONYMS

Abbreviation/ Acronym	Term
BMP	Best Management Practice
CWP	Clean Water Partners
DEQ	Virginia Department of Environmental Quality
EHS	George Mason University's Environmental, Health, & Safety
ESC	Erosion and Sediment Control
FM	Facilities Management
Mason LD	George Mason University Facilities Land Development Division
MS4	Municipal Separate Storm Sewer System
OoS	Office of Sustainability
SWM	Stormwater Management
TMDL	Total Maximum Daily Load
VESCL&R	Virginia Erosion and Sediment Control Law and Regulations
VESCP	Virginia Erosion and Sediment Control Plan
VPDES	Virginia Pollutant Discharge Elimination System
VSMP	Virginia Stormwater Management Program

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Introduction and Background Information

Stormwater discharges within George Mason University (Mason) are regulated under the terms of VPDES General Permit for Discharges of Stormwater from Small Municipal Separate Storm Sewer System (MS4) (General Permit No. VAR040106). This MS4 permit is issued to Mason by Virginia DEQ, consistent with the provisions of Section 402 of the Clean Water Act and the Virginia Stormwater Management Act, which authorizes the Virginia Stormwater Management Program (VSMP) regulations.

The MS4 permit was initially issued to Mason on July 9, 2008 for permit year 2008-2013. The second permit was issued on July 2, 2013 for the permit year 2013-2018. On October 31, 2018, the MS4 permit was re-issued with an effective date of November 1, 2018 and an expiration date of October 31, 2023. Since the commencement of the effective permit coverage, Mason has begun implementing permit requirements and continues to work on improving existing control measures developed to reduce the discharges of pollutants into Mason's storm sewer system.

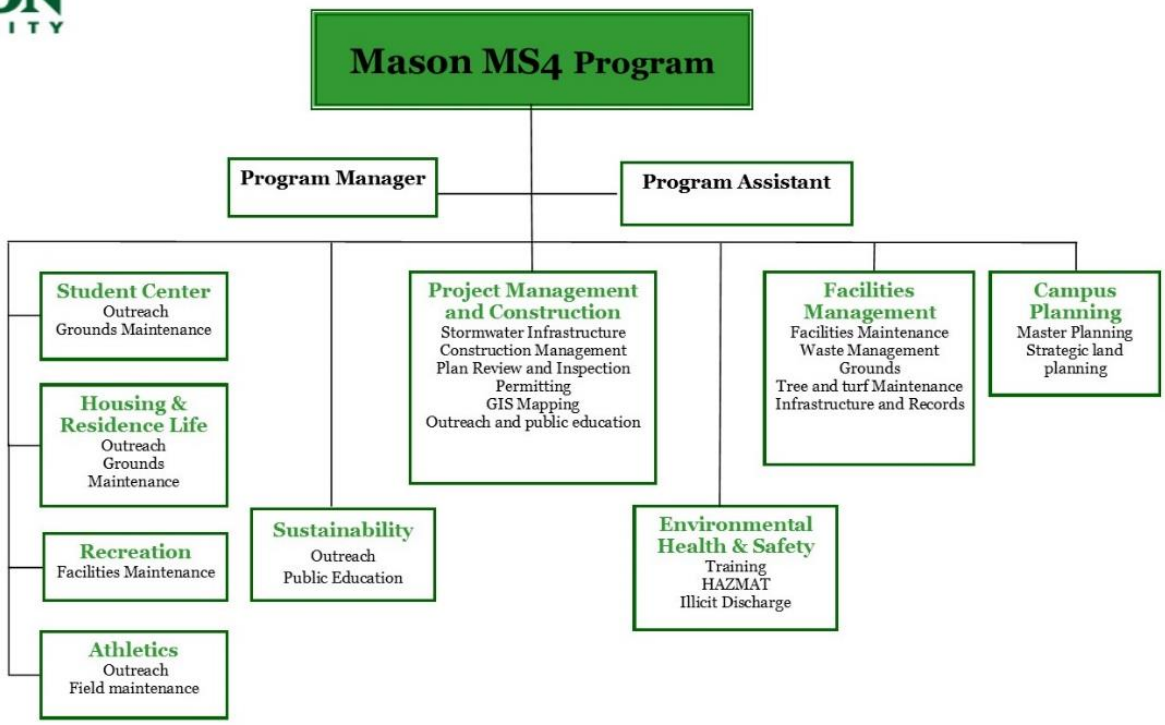
Mason's MS4 Permit covers two separate Northern Virginia campuses in Fairfax and Prince William County (Appendix A). Both are located in the Potomac watershed within the larger Chesapeake Bay watershed.

Fairfax Campus consists of approximately 585 acres of developed and undeveloped land comprised of academic buildings, research facilities, residential buildings, auxiliary buildings, and athletic facilities. Approximately 220 acres drains to Popes Head Creek. The remaining 365 acres drains to Pohick Creek. Fairfax Campus is physically interconnected to these MS4's: Fairfax County, City of Fairfax, and the Virginia Department of Transportation (VDOT) (Appendix A). The stormwater system at Fairfax Campus encompasses roughly 680 storm inlets and 16 miles of storm sewer pipes.

Science and Technology Campus is located in Prince William County and consists of approximately 135 acres of developed and undeveloped land that includes academic buildings, research facilities, auxiliary buildings, and athletic facilities. All 135 acres are within the Broad Run drainage area. Science and Technology campus is physically interconnected to other MS4s including Prince William County and VDOT. The stormwater runoff from the Science and Technology Campus is captured by roughly 50 storm inlets and transported through 2 miles of storm sewer pipes into a tributary to Cannon Branch.

Currently, over 37,000 students attend Mason with approximately 6,000 living on the Fairfax campus. The number of students living on campus has been reduced to approximately 4,500 due to the pandemic. Mason anticipates continuous growth in enrollment in the future.

While stormwater activities and functions are divided among several different departments and divisions, the Mason Land Development (Mason LD) has the primary responsibility for overall compliance with the permit requirements. MS4 permit compliance activities are coordinated with Environmental Health and Safety Office (EHS), Facility Management (FM), and other Mason units. While Mason LD is the responsible for overall program compliance, including annual report submittal, several other departments and divisions play important roles in implementing the MS4 permit requirements. These departments are shown in the following organization chart.


Mason MS4 Program
Program Manager
Program Assistant
Student Center
Outreach
Grounds Maintenance
Housing & Residence Life
Outreach
Grounds
Maintenance
Recreation
Facilities Maintenance
Athletics
Outreach
Field maintenance
Sustainability
Outreach
Public Education
Project Management and Construction
Stormwater Infrastructure
Construction Management
Plan Review and Inspection
Permitting
GIS Mapping
Outreach and public education
Environmental Health & Safety
Training
HAZMAT
Illicit Discharge
Facilities Management
Facilities Maintenance
Waste Management
Grounds
Tree and turf Maintenance
Infrastructure and Records
Campus Planning
Master Planning
Strategic land planning

Part I: Discharge Authorization and Special Conditions

SUMMARY (Part I D 2 a-2 e)

Mason LD prepared this annual report for General VPDES Permit for Discharges of Stormwater From Small Municipal Separate Storm Sewer Systems (MS4) (General Permit No. VAR040106). The Permit has the effective date of November 1, 2018 and the expiration date of October 31, 2023. This report covers the reporting period of July 1, 2019 through June 30, 2020.

Mason's MS4 Program applies to all activities undertaken by Mason, either by its internal workforce or contracted to external entities, where such activities are regulated by VSMP Permit Regulations. Compliance with the permitted MS4 Program (and all parts thereof) will be verified during inspections of Mason's land disturbing activities, whether internally or by DEQ, Environmental Protection Agency (EPA), or other applicable environmental agencies.

This MS4 permit covers the Fairfax campus and Science and Technology Campus (previously Prince William campus). Mason oversees Arlington Campus on an administrative basis. Other remote locations are included under the MS4 permits of their respective local jurisdictions.

Mason's MS4 Report is submitted to the DEQ for review and approval on an annual basis. Mason will ensure compliance with the General VPDES Permit for MS4s effective on November 1, 2018. This submittal constitutes Mason's commitment to execute all provisions contained herein on regulated land disturbing activities, land development projects, and operation and maintenance of installed stormwater management facilities. As such, this report will be made available to Mason and DEQ personnel and is available for download as a PDF file at: https://stormwater.gmu.edu.

Detailed status updates on compliance with each reporting items on Minimum Control Measures (MCMs) in Part I E are listed below. Mason remains compliant with the permit requirements.

MS4 Program Plan

Mason evaluated and updated the MS4 Program Plan in April 2019 to meet the current permit requirements. The plan establishes and defines Mason's MS4 program, and demonstrates Mason's plan to meet the permit requirements through October 31, 2023. The program plan is a living document and will be updated, through the permit cycle where necessary. The most up-to-date MS4 Program Plan is available on the website https://stormwater.gmu.edu

MCM#1: Public Education and Outreach

The Public Education and Outreach Program at Mason seeks to alert students, faculty and staff on the impacts of stormwater runoff on water quality through various communication channels. It provides guidance on how the community can help in minimizing adverse impacts of urban runoff in waterways.

Mason utilizes existing programs, organizations, boards, and committees within the community to implement public education activities. The Public Education and Outreach program at Mason uses existing forums and outreach materials established by EPA and Northern Virginia Clean Water Partners (CWP). In addition, Mason

staff develops educational brochures and materials to send specific messages to Mason students, faculty and staff. Samples of brochures and outreach materials developed by Mason LD can be found in Appendix B. These materials are widely distributed by Mason staff members at various events and meetings. As a member of CWP, Mason also participates in the CWP education campaign, which uses multi-media approach to educate the public on stormwater pollutions. Cable televisions, ads, promotional items, the Only Rain website (www.onlyrain.org), print materials, and internet banner ads are used to reach a large audience around the regions.

Part I E 1 g (1): A list of the high-priority stormwater issues the permittee addressed in the public education and outreach program

Mason and CWP have identified the high priority regional water quality issues that contribute the pollution of stormwater runoff at Mason: bacteria, nutrients, and motor oil/chemical contaminants. These high priority water quality issues are listed below along with the rationale for their selection.

High Priority Issues	Selection Rationale
Bacteria	Bacteria pollution in stormwater runoff come from leaking sanitary sewer pipes, wildlife (i.e. Canada geese), and improper disposal of pet waste. Due to the significant number of geese population and pet owners in the community, Mason chooses students, faculty, staff members and campus visitors as the target audience and the education and outreach messages focused on proper disposal of pet waste.
Nutrient	Nitrogen and phosphorus are two of the three pollutants listed in Mason's MS4 Permit requiring an action plan for the Chesapeake Bay TMDL. Over fertilization of lawns provides a direct runoff source of nitrogen and phosphorous to streams. With approximately 134 acres of turf areas in the Mason and over 5,000 residential students/faculty on campus, the public awareness of the effects on over-fertilization is important to reducing those pollutants in stormwater.
Motor Oil/Chemical Contaminants	Oils that leaks from cars onto roads and parking lots was washed into storm drains and then flow directly to a pond or stream. With 4 million square feet of parking lots and over 20,000 active parking permits, Mason chooses to target students, faculty and staff members with educational messages focused on prevention of fuel spills, illicit discharges, and improper handling of motor oils, anti-freeze and other hazardous waste.

Part I E 1 g (2): A list of strategies used to communicate each high-priority issues

In this reporting period, Mason LD implemented the following strategies on campuses to explain to Mason students, faculty and staff members the importance of the high-priority stormwater issues identified above. Through these strategies, Mason LD informed Mason students, faculty, and staff members the actions they can take to minimize the impact of the high-priority stormwater issues.

Strategies	Implementation at Mason
Traditional written materials	Mason LD developed and distributed informational brochures, posters, bookmarks, etc. on various outreach events to increase public's knowledge on stormwater pollution.
Alternative materials	Mason LD distributed dog waste bags, hand sanitizers, pens, etc. to increase public's knowledge on stormwater pollution.

Strategies	Implementation at Mason
Speaking Engagements	Mason LD presented at Civil Engineering classes to teach Mason students the importance on high-priority water quality issues and reducing waste on campus. Mason LD presented at annual Virginia Water Conference on Mason's strategy to engage students, faculty and staff members.

MCM#2: Public Involvement and Participation

Mason encourages residents and students to participate in volunteer programs hosted on campus for conservation and improvement of water resources. Projects such as Campus Stream Cleanups are conducted every year with the purpose of getting the community involved in the Mason's efforts on reducing the amount of pollutant loads in stormwater. Educational workshops and materials, offered by Mason, also provide information to the public about stormwater management practices implemented on campus and different sustainable practices that can help restore and protect surface waters.

Mason LD has developed a website dedicated to water quality and stormwater management https://stormwater.gmu.edu/. The site provides information on Mason's MS4 program, serves as a forum to distribute educational materials, and includes information on where to report potential illicit discharges. It provides water quality and pollution prevention information to the general public in an easily accessible format. It also provides public access to documents such as Mason's MS4 program plan, annual reports, and TMDL action plan.

Part I E 2 f (1): A summary of any public input on the MS4 program received (including stormwater complaints) and how the permittee responded

In this reporting period, Mason has received zero public comments in regards of Mason's MS4 program.

Part I E 2 f (2): A website address to the permittee's MS4 program and stormwater website

Mason LD has developed a website dedicated to water quality and stormwater management https://stormwater.gmu.edu/. The site provides public access to documents such as Mason's MS4 Permit, the MS4 program plan, annual reports, and TMDL action plan. It provides a mechanism for the public to report potential illicit discharge, improper disposal, spills to MS4, complaints regarding the land disturbing activities and/or other potential stormwater pollution concerns. Contact information is available online for the public to provide inputs on the MS4 program.

In this reporting period, Mason implemented an online reporting tool, which made it easier for the public to submit any comments and feedback to Mason LD. It is available at https://stormwater.gmu.edu/

Part I E 2 f (3): A description of the public involvement activities implemented by the permittee

Due to the COVID-19 outbreak, Mason switched to online learning between March 13 and August 24, 2020. Several planned outreach events had been cancelled or postponed. Despite the unexpected challenges, Mason LD was able to fulfill the permit requirements for this reporting period.

In this reporting period, Mason led one cleanup event, hosted educational booth at several events, and presented to students at several classrooms. In addition, Mason participated and presented at the annual Virginia Water Conference. These events provided hands-on opportunities for Mason students, staff, faculty members, and community visitors to learn about high priority stormwater issues and ways to protect the streams and the environment. Mason LD received positive feedbacks from the participants. The details about each activity with evaluation metrics are shown below and Appendix C.

Category	Activities	Activity details
Restoration	Piedmont-Tidewater Raingarden Cleanup	A group of student volunteers cleaned up the Piedmont-Tidewater raingarden as part of Mason Nation 9/11 Day of Service on September 11, 2019. Duties included pick up and sort trash, remove weeds, and replenish mulch.
Educational Events	Classroom Presentation	On November 14, 2019, Mason LD presented Mason MS4 program, internship and Patriot Green Fund projects to students at class CEIE 340 Water Resources Engineering.
Educational Events	Information Kiosk	On December 2, 2019, Mason LD staff handed out Mason LD brochures with facts about stormwater and information on future events to students, faculty, and staff on campus.
Educational Events	Classroom Presentation	On Feb 8, 2020, Mason LD presented Mason MS4 program, internship and Patriot Green Fund projects to students at class EVPP 442 Ecosystem and Processes. Mason LD staff also led a field visit to rain gardens and stream restoration project.
Educational Events	Classroom Presentation	On February 14, 2020, Mason LD staff presented Mason MS4 program, internship and Patriot Green Fund projects to students at class CEIE 355 Environmental Engineering and Science class.
Educational Events	Department Information Fair	As part of Mason staff appreciation day on February 27, 2020, staff and non-students wage employees had the opportunity to learn about Mason LD office functions on MS4 program, BMPs on campus and upcoming events.
Educational Events	Virginia Water Conference Presentation	On March 9-10, 2020, Mason LD presented in Virginia Water Conference with more than 400 participants from floodplain and stormwater management professional community. Presentation discussed Mason's strategy to maximize campus resources to advance the stormwater program, including Mason LD sponsored capstone project to design and build a custom-made robot to inspect Mason's storm drains.
Restoration	*Campus Cleanup	Fairfax Campus Cleanup was planned for April 15, 2020.
Educational Events	*Eco Fest	Mason LD planned to host a booth on Mason EcoFest on April 22, 2020 Earth Day to distribute information on stormwater management to students and community visitors.
Restoration	*Trashcans Enclosures Improvements	A group of student plans to improve 2 trash cans enclosures bases at Masonvale housing community. The purpose of the event is to improve the drainage area to a permeable pavement facility and distribute information on BMPs and stormwater. This event was planned for 2020 Earth month.

Category	Activities	Activity details
Pollution Prevention	Storm Drain Marking Event	Mason LD marked 40+ storm drains in Science and Technology campus.

**All campus events were cancelled between March 13 and August 24, 20202 due to COVID-19 outbreak.*

Part I E 2 f (4): A report of metric as defined for each activity and an evaluating as to whether or not the activity is beneficial to improving water quality

For each public involvement activity, Mason keeps track of participant engagement through numbers of participants, numbers of brochures and/or promotional items handed out, numbers of contact information collected, and/or weights of trash/recyclable materials collected. The metrics for the public involvement events in this reporting period are shown in the table above. Mason LD continues to receive positive feedbacks from participants at these activities and will continue to investigate additional opportunities to increase public participation.

Part I E 2 f (5): The name of other MS4 permittees with whom the permittee collaborated win the public involvement opportunities

Mason LD did not collaborate with other MS4 permittees on the activities shown above. Mason received support from Alice Ferguson Foundation and CWP who provided trash bags, gloves, and dog waste bags for the stream cleanup events.

MCM#3: Illicit Discharge Detection and Elimination

In order to detect and eliminate both direct and indirect illicit discharges, Mason has established Illicit Discharge Detection and Elimination Program (IDDE), which relies on Mason's *Illicit Discharge Detection and Elimination Policy* to prohibit any non-stormwater discharges into the sewer system or any receiving waterway. The policy is enforced by both Mason LD and EHS, who rely strongly on regular inspections and public notification. Mason encourages the community's contribution in discovering and reporting possible polluted runoff and maintains appropriate staffing to address such reported concerns. Instructions on how to report concerns or potential illicit discharges are available online at the Mason LD website.

Mason LD maintains stormwater system maps and publishes interactive stormwater maps using online GIS. The maps can be found on Mason LD website. The complete MS4 maps with outfall information table are available upon request.

Mason LD performs dry weather screening (outfall reconnaissance) twice a year on the outfalls to identify possible illicit connections and discharges, as well as, to keep track of all existing stormwater management facilities and structures within the MS4 boundary. During the outfall reconnaissance, outfalls are evaluated for structural damages or uncommon conditions that might indicate the present of pollutants. In addition, outfalls are inspected for possible maintenance necessity to avoid detrimental conditions on stream banks and bed.

Mason has interconnections with the stormwater system operated by Fairfax County, Fairfax City, Prince William County and VODT.

Part I E 3 e (1): A confirmation statement that MS4 map and information table have been updated to reflect any changes to the MS4 occurring on or before June 30 of the reporting year.

Mason's stormwater system maps and information table have been updated to reflect the current site condition including any changes to the MS4 occurring on or before June 30 of this reporting year. The maps including the information tables were submitted to DEQ on March 25, 2020.

Part I E 3 e (2): The total number of outfalls screened during the reporting period as part of the dry weather screening program

A total of number of 69 outfalls were screened during this reporting year as part of the dry weather screening program (outfall reconnaissance) and no illicit discharges were identified during the outfall reconnaissance.

Part I E 3 e (3): A list of illicit discharges to the MS4 including spills reaching the MS4 with information as follows: (a) the source of illicit discharge; (b) the dates that the discharge was observed, reported or both; (c) whether the discharge was discovered by the permittee during dry weather screening, reported by the public or other methods (describe); (d) how the investigation was resolved; (e) a description of any follow-up activities; and (f) the date the investigation was closed.

Mason received five reports for potential illicit discharge incidents from the public and Mason staff. After investigations conducted by EHS, it was determined that three of them were illicit discharges within or reaching Mason's MS4 boundary. Proper actions had been taken to remove and mitigate the illicit discharges.

MCM#4: Construction Site Stormwater Runoff

Mason has developed Annual Standards and Specifications for Erosion and Sediment Control and Stormwater Management (AS&S) in accordance with Virginia Erosion and Sediment Control law and regulations, and Virginia Stormwater Management Act and program. It is an integral component of all design, construction, maintenance, and management of Mason's facilities and campuses. It is enforced during the planning, permitting, and construction phases by Mason LD staff. Mason personnel receive training by DEQ on ESC and SWM, in order to enforce such programs. Certified staff is responsible for reviewing plans during the permitting process and conducting regular inspections on project sites during construction. Plan review and inspection procedures are implemented in accordance with state laws and regulations and Mason's AS&S. A copy of Mason's AS&S is available at Mason LD website and/or provided upon request.

Part I E 4 d (1): If the permittee implements a construction site stormwater runoff program in accordance with Part 1 E 4 a (3)

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

(b) If one or more of the land disturbing projects were not conducted with the department approved standards and specifications, an explanation as to why the projects did not conform to the approved standards and specifications

All land disturbing projects that occurred during the reporting period have been conducted in accordance with DEQ approved Annual Standards and Specifications for Erosion and Sediment Control and Stormwater

Management.

Mason strives to provide a bright and innovative environment for our growing campus community. As a result, the campuses continue to experience new construction and/or renovation projects. During the reporting period, Mason has five active construction projects in Fairfax Campus and Science and Technology Campus (Prince William County). Locations of current and future projects are also available on Mason Facilities website

For all active construction projects listed below, Mason LD staff perform regular inspections to ensure that erosion and sediment controls were properly implemented and maintained during the construction. Issues and violations observed during inspection were photographed and documented in the inspection reports. In addition, required corrective actions for each issue or violation were specified and with a date by which all corrective actions must be completed. Critical areas that require continuous inspections would be identified on the site plan, if necessary. The inspection reports were sent to the Contractor, Project Managers, Mason LD and other responsible parties with 24 hours of inspection and follow-up inspections will be performed when necessary.

Construction Project	Project Schedule	Number of Inspections in the reporting period	Enforcement actions
Hylton Performing Arts Addition	Aug 2018 to Dec 2019	31	0
Robinson Hall Replacement	Aug 2018 to Jan 2022	44	0
Utilities Distribution System	Aug 2018 to Aug 2021	48	0
Fairfax Water Tower	Dec 2018 to May 2020	33	0
Shenandoah Parking Bank Stabilization	Jan 2020 to Jan 2020	2	0

Part I E 4 d (2): Total number of inspections conducted

Total number of inspections conducted by Mason LD staff in the reporting period are shown in the table above.

Part I E 4 d (3): Total number and type of enforcement actions implemented and the type of enforcement actions

In the reporting period, Mason didn't issue any enforcement actions, such as stop-to-work order. However numerical corrective actions were conveyed to contractors and project managers through inspection reports to ensure the compliance with the approved AS&S.

MCM#5: Post-Construction Stormwater Management for New Development and Development on Prior Developed Lands

As a non-traditional small MS4, Mason has direct control over planning, design, construction and post-construction of stormwater management facilities, also called best management practices (BMPs.) The MS4 program at Mason consists of minimizing the impacts of runoff associated with land disturbance such as flooding, erosion, and water pollution. Current practices implemented by Mason in managing and controlling stormwater focus on promoting natural hydrologic processes as well as minimizing contact of pollutants with rainwater. As land disturbing activities take place, Mason incorporates measures that protect and/or improve natural areas during and after construction. In addition to the ongoing efforts to preserve the natural landscape, Mason strives to reduce impervious areas as much as possible and create more vegetated regions.

Mason has implemented a variety of non-proprietary stormwater BMPs on campuses, including rain gardens, dry swales, dry ponds and wet ponds. In addition, Mason installed a few proprietary stormwater BMPs in the recent years, including hydrodynamic units and filtering devices. Mason utilizes GIS to keep track the inventory of the BMPs. The information is available on the website: http://stormwater.gmu.edu

Mason LD implements an inspection procedure to inspect and maintain Mason's stormwater BMPs in accordance with state laws and regulations and Mason's AS&S. Inspections are performed annually to assess the quality and functionality of the stormwater BMPs.

Part I E 5 i (1): If the permittee implements a Virginia Stormwater Management Program in accordance with Part 1 E 5 a (1) and (2)

Mason is a public institution of higher education, therefore Part I E 5 a (1) and (2) does not apply to Mason.

Part I E 5 i (2): Total number of inspections conducted on stormwater management facilities owned or operated by the permittee

In this reporting period, Mason performed a total number of thirty-eight (38) inspections on stormwater management facilities owned by Mason.

Part I E 5 i (3): A description of the significant maintenance, repair, or retrofit activities performed on the stormwater management facilities owned or operated by the permittee to ensure it continues to perform as designed. This does not include routing activities such as grass mowing or trash collection

During the recent inspection, the need to restore and maintain the storage capacity of Mason Pond was recognized. Mason Pond is an in-line wet pond with approximately 135 acres drainage area in the highly urbanized campus. The pond was designed and built in late 1980s with outdated design specifications. In January 2020, a bathymetric survey was performed for Mason pond to verify the existing pond capacity. The survey results indicated that the capacity of the Mason Pond was 4.9 ac-ft, which is at 77% of its original design capacity 6.4 ac-ft. The pond has adequate capacity to settle suspended solids and meet the design function. Mason will continue to monitor the pond capacity and take proper action when needed.

Part I E 5 i (4): A confirmation statement that the permittee submitted stormwater management facility information through the Virginia Construction Stormwater General Permit database for those land disturbing activities for which the permittee was required to obtain coverage under the General VPDES Permit for Discharges of Stormwater from Construction Activities in accordance with Part 1 E 5 f or a statement that the permittee did not complete any projects requiring coverage under the General VPDES Permit for the Discharges of Stormwater from Construction Activities

During the reporting period, Mason has three land disturbing projects that obtained the Construction General Permit. They are Hylton Performing Arts Center (VAR10L469), Construction and Renovation Robinson Hall (VAR10L512) and Construction Utilities Distribution System (VAR10L452). This is to confirm that DEQ, as Mason's VSMP authority, will submit stormwater management facility information to the Virginia Construction Stormwater General Permit database on behalf of Mason.

Part I E 5 i (5): A confirmation statement that the permittee electronically reported BMPs using the DEQ BMP Warehouse in accordance with Part 1 E 5 g and the date on which the information was submitted.

During the reporting period, Mason has no stormwater management facilities installed to control post-development stormwater runoff from land disturbing activities less than one acre.

MCM#6: Pollution Prevention /Good Housekeeping for Facilities Within the MS4 Area Owned and Operated by the Permittee

The operation and maintenance program for Mason includes maintaining and implementing best management practices to ensure proper performance of facilities owned or operated by Mason. Facilities Management (FM) develops a series of standard of operation (SOP) to document the written procedures, including vehicle/equipment maintenance, vehicle wash, material storage and disposal, and parking lot maintenance. SOPs and best management practices are communicated through formal and informal training to staff members on how to minimize the pollutants in stormwater runoff from bulk storage areas, on how to prevent fuel leaks from automobiles and equipment, how to properly apply fertilizers, etc. Maintenance activities are managed by FM on a schedule basis via Maintenance Direct, which is a subsection of *School Dude Computer Software* where work orders are placed by staff member and received by FM. FM staff will take proper action to complete the maintenance request and close the work order when completed.

Part I E 6 q (1): A summary of any operational procedures developed or modified in accordance with Part 1 E 6 a during the reporting period

In this reporting period, no additional Standard of Operation (SOP) was developed.

Part I E 6 q (2): A summary of any new SWPPPs developed in accordance Part 1 E 6 c during the reporting period

Mason identified three high priority facilities that have a high potential of discharging pollutants. They are maintenance storage yard at Fairfax Campus, west campus yard, and facilities management site at Science and Technology campus. Mason has developed site specific stormwater pollution prevention plan (SWPPP) for each facility and has been performing routine inspection of the high priority facilities for compliance. The SWPPP is included in Appendix D.

Part I E 6 q (3): A summary of any SWPPPs modification in accordance with Part 1 E 6 f or the rationale of any high priority facilities delisted in accordance with Part 1 E 6 h during the reporting period

In the reporting period, Mason did not observe any unauthorized discharge, release or spill in three high priority facilities. Therefore, no SWPPP modification was made to prevent future unauthorized discharges.

Part I E 6 q (4): A summary of any new turf and landscape nutrient management plans developed that includes (a) location and the total acreage of each land area; and (b) the date of the approved nutrient management plan

Mason developed the nutrient management plans for turf/landscape areas and athletic fields. The plans apply to 210.7 acres of turf areas and 22.7 acres of athletic fields on Fairfax Campus and 29.2 acres of turf areas on Science

and Technology Campus. The approved nutrient management plans are valid through August 18, 2021 and are included on Appendix E.

Location	Acreage	Dates of approved NMPs
Fairfax Campus	210.7	8/14/2018-8/14/2021
Fairfax Campus Athletic Fields	22.7	8/14/2018-8/14/2021
Science and Tech Campus	29.2	8/14/2018-8/14/2021

Part I E 6 q (5): A list of the training events conducted in accordance with Part 1 E 6 m, including the following information: (a)the date of the training event, (b) the number of employees who attended the training event, and (c) the objective of the training event.

The operation and maintenance program incorporate a training component focusing on groups and/or departments that are likely to have significant stormwater impacts. The EHS office is responsible for training Mason personnel involved in hazardous materials and universal waste handling and storage, petroleum product handling activities, emergency responses, etc. The training activities in the reporting period are listed in Appendix F.

Part II: TMDL Special Conditions

Mason is required to reduce the discharges of total nitrogen, total phosphorus and total suspended solids (Pollutants of Concern or POC) in the Chesapeake Bay Watershed in accordance to the TMDL Special Condition. The phased approach requires Mason to establish a baseline and develop approaches to achieve a 5% reduction of the POCs in the first permit cycle (2013-2018), an additional 35% reduction in the second permit cycle (2018-2023), and an additional 60% reduction in the third permit cycle (2023-2028) for a total of 100% reduction from the baseline to be achieved by the end of the third permit cycle in 2028.

For compliance with the first permit cycle ending June 30, 2018, Mason utilized credit from existing oversized stormwater best management practices (BMPs) and implemented 320' of urban stream restoration on the Fairfax Campus. This provided reductions above and beyond the 5% requirement for the Phase 1 TMDL Action Plan. These additional reductions will be credited toward the Phase 2 TMDL Action Plan reduction requirements.

For compliance with the second permit cycle ending June 30, 2023, Mason developed the Phase 2 TMDL Action Plan. Based on the reduction credits from the first permit cycle, the focus of the Phase 2 TMDL Action Plan was on practices that primarily efficiently remove nitrogen. This was originally planned to be achieved through retrofit of an existing wet pond. In January 2020, a bathymetric survey was performed for Mason Pond and engineering analysis was done to verify the credit reduction to be achieved by retrofitting the pond. The investigation concluded that retrofitting Mason Pond would not provide adequate credit reduction to meet Phase 2 Chesapeake Bay TMDL requirement. Further cost analysis showed that it was cost prohibitive as the cost of nitrogen removal was higher than what can currently be purchased form a crediting bank. Mason therefore had evaluated several alternatives to meet the requirements and decided to perform a stream restoration upstream of Mason Pond. Stream bank assessment and field investigation confirmed that the 1,885 linear feet stream restoration project upstream of Mason Pond would provide adequate credits to meet both Phase 2 and Phase 3 Chesapeake Bay TMDL requirement.

Mason has started the stream restoration design. Due to the unprecedent challenges of COVID19 and subsequent budget cut, Mason targets to complete the design and permitting 2020-2022 and construction to start 2022-2023.

	TMDL POC Reduction (lbs/yr)		
	Nitrogen	Phosphorus	Total Suspended Solids
Phase 2 POC Required Reductions	157.73	15.93	18,104.95
Additional POC Reductions from Phase 1	21.34	16.60	32,499.84
Total Remaining POC Reductions Required for Phase 2	136.39	-0.67	-14,394.89
Phase 3 POC Required Reductions	260.57	35.85	31,042.99
Total Remaining POC Reductions Required for Phase 2 and 3	396.96	35.18	16,648.10
Estimated Reduction Achieved by the Stream Restoration	420.61	54.58	18,818.75

Part II A13 a: A List of BMPs implemented during the reporting period but not reported to the DEQ BMP Warehouse in accordance with Part 1 E 5 g and the estimated reduction of pollutants of concern achieved by each and reported in pounds per year

In this reporting period, Mason is still on planning stage for the design of stream restoration project and has not implemented any BMPs.

Part II A13 b: If the permittee acquired credits during the reporting period to meet all or a portion of the required reductions in Part II A 3 or A 5, a statement that credits were acquired

Mason didn't acquire credits during the reporting period to meet all or a portion of the required reductions.

Part II A13 c: The progress, using the final design efficiency of the BMPs, toward meeting the required cumulative reduction s for total nitrogen, total phosphorus and total suspended solids

Mason is in the planning stage for the design of stream restoration project.

Part II A 13 d: A list of BMPs that are planned to be implemented during the next reporting period.

In the next reporting period, Mason will continue to manage the design of stream restoration project.