MS4 ANNUAL REPORT
PERMIT NUMBER VAR040106

September 2014

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

Dated: September 30, 2014

I certify under penalty of law that all documents and all attachments related to the submission and updating of the GEORGE MASON UNIVERSITY MS4 ANNUAL REPORT were prepared under my direction or supervision in 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 a fine and imprisonment for knowing violations.

Sincerely,

Thomas G. Calhoun, P.E.
Vice President of Facilities

TABLE OF CONTENTS

I. ABBREVIATIONS AND ACRONYMS 3
II. SUMMARY 4-5
III. ANNUAL REPORT ADMINISTRATION 6-7
IV. APPENDICES 8-91
Appendix –A: Minimum Control Measures 8-43
1. Public Education and Outreach on Stormwater Impacts 9-16
2. Public Involvement/Participation 17-18
3. Illicit Discharge Detection and Elimination 19-23
4. Construction Site Stormwater Runoff Control 24-28
5. Post-Construction Stormwater Management 29-34
6. Pollution Prevention/Good Housekeeping for Mason Facility 35-44
Appendix –B: Water Quality Monitoring Manual 46-51
Appendix –C: Public Outreach and Education Campaigns and Activities 52-55
Appendix –D: Schedule of MS4 Program Plan Updates Required 56-58
Appendix –E: Illicit Discharge Detention and Elimination Policy 60-64
Appendix –F: MS4 Internal Outfalls 66-68
Appendix –G: Notice of Potential Interconnected MS4 70-76
Appendix –H: Current and Future Land Disturbing Projects 78-80
Appendix –I: Notice of Corrective Action 82-83
Appendix –J: Permanent Stormwater Management Facilities 84-86
Appendix –K: Nutrient Management Plan 88-91

I. ABBREVIATIONS and ACRONYMS

Abbreviation/ Acronym	Term
BMP	Best Management Practice
DEQ	Virginia Department of Environmental Quality
EHS	George Mason University's Environmental, Health, & Safety
ESC	Erosion and Sediment Control
FM	Facilities Maintenance
Mason LD	George Mason University Land Development
MS4	Municipal Separate Storm Sewer System
OoS	Office of Sustainability
SWM	Stormwater Management
VESCL&R	Virginia Erosion and Sediment Control Law and Regulations
VESCP	Virginia Erosion and Sediment Control Plan
VSMP	Virginia Stormwater Management Program

II. SUMMARY

As legislated by the Virginia Stormwater Management Program (VSMP) Permit Regulations (9VAC25-870-400 et. seq.), the Virginia Department of Conservation and Recreation (DCR) issued a VSMP General Permit (VAR040106) for small Municipal Separate Storm Sewer Systems (MS4) to George Mason University (Mason) on 09 July 2008. This permit was updated and extended effective 01 July 2013 by Virginia Department of Environmental Quality (DEQ). This permit holds Mason accountable for developing and implementing an MS4 Program. The program guides Mason's design, construction, maintenance, and management of its facilities and campuses.

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 any inspections of Mason's land disturbing activities, whether internal or by DEQ, Environmental Protection Agency (EPA), or other applicable environmental agencies. However, this MS4 permit only covers the Fairfax and Prince William campuses. The campuses are included under the MS4 permits for each 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 VSMP General Permit for MS4s issued 01 July 2013. 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 all appropriate Mason and DEQ personnel and is available for download as a PDF file at: http://facilities.gmu.edu/ProjMgmtConst/LandDevelopment/ms4.cfm. Specifics on compliance with the updated MS4 permit are included in Appendix A. Within this appendix, the general permit is broken down and a more detailed review of Mason's compliance within the permit for the reported year is provided.

Mason remains compliant with the Annual Report submitted September 2013 (Revised) in addition to this 2014 Annual Report. During the 30 June 2013 – 01 July 2014 permit cycle, Mason initiated a water quality monitoring program. Written procedures and preliminary testing were completed during this permitting period. The University will begin bi-annual water quality testing starting in fall 2014 for ten outfalls on Fairfax Campus and one outfall on Prince William Campus. Refer to Appendix B for more information about our testing procedures and manual.

Information regarding Mason's public outreach and education programs for stormwater management on campus can be found in Appendix C. A list of campaigns and activates conducted during this reporting period as well as a future list is attached.

The MS4 permit effective 01 July 2013 requires compliance on a structured timeline throughout the duration of the permit. The schedule of MS4 program plan updates can be found in Appendix D and will be further elaborated in future Annual Reports.

Mason Land Development (Mason LD) collaborates with Mason's Environmental, Health, and Safety Department (EHS) to adopt an Illicit Discharge Detection and Elimination Policy to report spills. This can be found in Appendix E. Mason LD conducts outfall reconnaissance every summer. To document the location of each outfall, Mason uses a grid system. The grid number is the first number in the outfall identifier with the second number being the numerical count of that outfall. For example, 6-3 is the third outfall located in grid 6.

Outfalls may have an 'i' at the end of its identifying number indicating that roofs drain are the source of the water discharging from that outfall. Maps depicting the outfall locations within the permitted areas are included as Appendix F.

All stormwater interconnections with outside stormwater systems are currently depicted on the MS4 maps in Appendix G for both Fairfax and Prince William Campuses. Copies of the letters sent to all potential interconnected MS4s are located within Appendix G.

Mason strives to provide a bright and innovative environment for our growing campus community. As a result our campuses continue to expand with new construction projects. A list of these projects can be found in Appendix H.

Mason issued one Notice of Corrective Action during this permit cycle. Documentation of this incident can be found in Appendix I.

There is an array of stormwater facilities on campus including structural BMPs like rain gardens, vegetative swales, pervious surfaces, and a green roof, as well as nonstructural BMPs including retention and detention ponds. A list of the University's permanent stormwater facilities can be found in Appendix J.

A Nutrient Management Plan for Mason has been prepared. More information on this plan can be found in Appendix K.

III. ANNNUAL REPORT ADMINISTRATION

3.1 *George Mason University Annual MS4 Report* submitted to DEQ includes the following background information as required by the General Permit:

3.1.1 The name and permit number of the program submitting the annual report.

This report is submitted under permit number VAR040106 by Keith Hamilton under the supervision of Thomas Calhoun, Vice President of Facilities.

3.1.2 The annual report permit year.

This Annual Report is for the year from 01 July 2013 to 30 July 2014.

3.1.3 Modifications to any operator's department's roles and responsibilities.

There are no changes in Mason LD's roles and responsibilities.

3.1.4 Number of new MS4 outfalls and associated acreage by HUC added during the permit year.

There are no new MS4 outfalls added during this reporting year. All outfalls can be found on Mason's MS4 database and internal MS4 maps. Refer to Map 2.1 and 2.2.

3.1.5 A signed certification.

Refer to Page 1 of this report.

3.1.6 The status of compliance with permit conditions, an assessment of the appropriateness of the identified BMPs and progress towards achieving the identified measureable goals for each of the minimum control measures.

George Mason University continues to implement Best Management Practices in order to meet all requirements of the general permit. A summary of BMPs implemented by George Mason University is included in Section V, Appendix J of this document. As a result of the annual program evaluation of the University's MS4, Mason LD has identified no program deficiencies or areas that need immediate improvements.

3.1.7 Results of information collected and analyzed, including monitoring data, if any, during the reporting cycle.

Mason LD has developed a quality monitoring program for surface waters within campus. Refer to Appendix A for more information on proposed BMPs associated with monitoring procedures.

3.1.8 A summary of the stormwater activities the operator plans to undertake during the next reporting cycle.

Refer to Appendix H for a list of the anticipated project expected to begin during the next reporting cycle. Each project includes a stormwater portion.

3.1.9 A change in any identified BMPs or measureable goal for any of the minimum control measures including steps to be taken to address any deficiencies.

No changes have been made during this permit year.

3.1.10 Notice that the operator is relying on another government entity to satisfy some of the permit obligations (if applicable).

Mason partners with Prince William County's government entity to satisfy some of the permit obligations. A SWM Pond owned and maintained by Prince William County satisfies some of the permit obligations as a part of a

cooperative development plan for Prince William Campus and the adjacent properties. The plans have been approved by Prince William County. Mason LD has identified several points where Mason discharges into other regulated MS4. A notification of potential interconnected stormwater system will be addressed to respective jurisdictions. Refer to Appendix G. This MS4 permit only covers the Fairfax and Prince William campuses. Since the permit does not cover the other campuses or properties owned by George Mason University, these areas are automatically included under the local jurisdictions' MS4s and no additional notifications are necessary (9VAC25-870-400-D.7.c.5).

3.1.11 The approval status of any programs pursuant to Section II C (if appropriate), or the progress towards achieving full approval of these programs.

There are no programs waiting for approval.

3.1.12 Information required pursuant to Section I B 9.

No TMDL or WLA are calculated for this permit duration. More information is intended to be provided as the revised program develops.

3.1.13 The number of illicit discharges identified and the narrative on how they were controlled or eliminated pursuant to Section II B 3 f.

EHS has responded to a total of 2 incidents this calendar year 2014 with no potential to impact the environment. No incident required EHS to notify Virginia DEQ of the incident, and no incident required EHS to supplement its response with contractor assistance. No incident required EHS to notify Virginia Department of Environmental Quality (Northern Regional Office) or the incident, and no incident required EHS to supplement its response with contractor assistance.

3.1.14 Regulated land-disturbing activities data tracked under Section II 4 c.

Refer to Appendix H for the table of tracked land-disturbing activities.

3.1.15 All known permanent SWM facility data tracked under Section II B 5 b (6) submitted in database format to be prescribed by the department. Upon filing of this list, subsequent reports shall only include those new SWM facilities that have been brought online during the reporting period.

Refer to Appendix J for a list of permanent stormwater management facilities.

3.1.16 A list of new or terminated signed agreements between the operator and any applicable third parties where the operator has entered into an agreement in order to implement minimum control measures or portions of minimum control measures.

There are no new or terminated agreements with third parties.

3.1.17 Copies of any written comments received during a public comment period regarding the MS4 Program Plan or any modifications.

No written comments were received by the public concerning the MS4.

IV. APPENDICIES

Appendix A:
Minimum Control Measures

Minimum Control Measure No. 1: Public Education and Outreach on Stormwater Impacts							
BMP CATEGORY	**PROPOSED BMP**	**PROGRAM**	**MEASURABLE GOAL**	**RESPONSIBLE PERSON/ DEPARTMENT**	**CURRENT PROGRAM IN PLACE**	**ESTIMATED DATE OF IMPLEMENTATION**	**ANNUAL OBJECTIVES ACHIEVED/**
1.a - 2008-2013 Program	1.a.1 - Implement Old Program	Continue to implement the public education and outreach program until the program is updated to meet the conditions of this state permit.	Comply with the 2008-2013 General Permit.	FM/ Mason LD	-	Complete	Information on the old program is available at the Facilities Management website http://facilities.gmu.edu/ProjMgmtConst/LandDevelopment/ms4.cfm.
1.b - Public Awareness Program	1.b.1 - Pollution Concerns	Increase target audience on how to reduce stormwater pollution, placing priority on reducing impacts to impaired waters and other local water concerns.	Increase target audience knowledge about the steps that can be taken to reduce stormwater pollution, placing priority on reducing impacts to impaired waters and other local water concerns.	Mason LD	YES	Complete	During freshman and transfer orientation, Mason LD handed out brochures, flyers, and dog bags from the Clean Water Partners (CWP) to raise awareness to passing faculty and staff, current and future students, and their guardians.
	1.b.2 - Hazards Associated	Increase target audience knowledge of hazards associated with illegal discharges and improper disposal of waste, including pertinent legal implications.	Increase target audience knowledge about the steps that can be taken to reduce hazards associated with illicit discharges and improper disposal of waste.	Mason LD	YES	Complete	During freshman and transfer orientation, Mason LD handed out brochures, flyers, and dog bags from the Clean Water Partners (CWP) to raise awareness to passing faculty and staff, current and future students, and their guardians.

	1.b.3 - Diverse Program	Implementing a diverse program with strategies that are targeted towards audiences most likely to have significant stormwater impacts.	Implementing a diverse program with strategies that are targeted towards audiences most likely to have significant stormwater impacts.	Mason LD/OoS	NO	2015	A diverse program with strategies that are targeted towards audiences is currently under development. Mason LD plans to have this implemented by the end of 2015.
1.c - Program Design	1.c.1 - Water Quality Issues	Identify high-priority water quality issues, and a rationale for the selection of these issues.	Indicate three high-priority water quality issues on campus and how we treat them.	Mason LD	YES	Complete	Refer to Appendix B for George Mason University's Water Quality Monitoring Manual. Mason LD test for many contaminants including phosphorus, nitrogen, and total suspended solids.

	1.c.2 - Population Size	Identify and estimate the population size of the target audience or audiences.	20% of all on campus students, faculty, and staff.	Mason LD	YES	Complete	The Office of Institutional Research and Reporting (IRR) does an annual count of the faculity (both full and part time), staff, and students for Fairfax and Prince William Campuses. The headcount for Fall 2013 for both full and part time students was 33, 917 (http://irr.gmu.edu/10YrEnrollTrends.pdf). A report for all faculty and staff members is compiled ever October. In October 2013, Fairfax campus had 3,318 full-time faculty/staff; 986 part-time faculty/staff and Prince William campus had 211 full-time faculty/staff; 39 part-time faculty/staff.

	1.c.3 - Messages	Develop relevant message or messages and associated educational and outreach materials.	Use educational materials for public outreach.	Mason LD	YES	Complete	Mason LD has developed and handed out brochures around campus through this year. These brochures are attached in Appendix C. Mason also uses the Clean Water Partners, Mason TV station, and stream clean-ups around campus.
	1.c.4 - Public Participation	Provide for public participation during public education and outreach program development.	Reach out to students and campus life on the importance of stormwater management.	Mason LD	YES	Complete	During freshman and transfer orientation, Mason LD handed out brochures, flyers, and dog bags from the Clean Water Partners (CWP) to raise awareness to passing faculty and staff, current and future students, and their guardians. Mason LD also host stream clean-ups around campus twice a year to promote public involvement and participation.

	1.c.5 - Target Audience	Annual conduct sufficient education and outreach activities designed to reach 20% of each high-priority issue target audience.	Reach out to students and campus life on our high-priority stormwater issues.	Mason LD	YES	Complete	Mason LD has selected to target all students, faculty, and staff on campus. We also have signage and electronic flyers in commonly toured areas for visitors to read when on campus. We have also partners with the Clean Water Partners (CWP) to raise awareness through a contract with Comcast.
	1.c.6 - Adjusting Target Audience	Provide for the adjustment of target audiences and messages including educational materials and delivery mechanisms.	Campus life changes every year, and campus is growing exponentially. Mason LD must plan to adjust target audience based on the amount of students, faculty, and staff.	Mason LD	YES	Complete	Every year Mason LD gets the number of students, faculty, and staff from admissions and HR. During freshman and transfer orientation, Mason LD will hand out brochures, flyers, and dog bags from the Clean Water Partners (CWP) to raise awareness to passing faculty and staff, current and future students, and their guardians. Mason LD has hosted and intends on hosting stream clean-ups around campus twice a year to promote public involvement and participation.

1.d - Other Operators	1.d.1 - Public Outreach and Outreach Efforts	Coordination between other MS4 operators on public education and outreach efforts.	Coordination between other MS4 operators on public education and outreach efforts.	Mason LD	YES	Complete	Mason has an agreement with Northern Virginia Clean Water Partners.
1.e - Evaluation	1.e.1 - Stormwater Issues	High-priority stormwater issues.	Before continuing state permit coverage, the operator shall evaluate stormwater issues.	Mason LD	YES	Complete	The high-priority stormwater issues for the 2014 Annual Report include phosphorus, nitrogen, and total suspended solids.
	1.e.2 - Targeted Audience	Selected targeted audiences for each high-priority stormwater issue.	Before continuing state permit coverage, the operator shall evaluate stormwater issues.	Mason LD	YES	Complete	Mason LD has selected to target all students, faculty, and staff on campus. We also have signage and electronic flyers in commonly toured areas for visitors to read when on campus.
	1.e.3 - Messages	Message or messages being delivered.	Before continuing state permit coverage, the operator shall evaluate messages.	Mason LD	YES	Complete	Mason LD uses brochures, flyers, and dog bags from the Clean Water Partners (CWP) to raise awareness to faculty and staff, current and future students, and their guardians. Refer to Appendix C, Figure 1 for a copy of the brochure.

	1.e.4 - Mechanisms	Mechanism or mechanisms of delivery employed in reaching the target audiences.	Before continuing state permit coverage, the operator shall evaluate targeted audience.	Mason LD	YES	Complete	Every year Mason LD gets the number of students, faculty, and staff from admissions and HR. During freshman and transfer orientation, Mason LD will hand out brochures, flyers, and dog bags from the Clean Water Partners (CWP) to raise awareness to passing faculty and staff, current and future students, and their guardians. Mason LD has hosted and intends on hosting stream clean-ups around campus twice a year to promote public involvement and participation.
1.f - MS4 Program Plan Updates	1.f.1 - Table 1	Describe how the conditions of this permit shall be updated in accordance with Table 1.		Mason LD	NO	2018	Refer to Appendix D for an updated Schedule of MS4 Program Plan Updates for the 2013-2018 Permit.

1.g - Annual Reporting	1.g.1 - Education and Outreach Activities- Current Reporting Period	Maintain a list of education and outreach activities for each high-priority water quality issue.	A list of education and outreach activities conducted during the reporting period for each high-priority water quality issue, the estimated number of people reached, and an estimated percentage of the target audience or audiences that will be reached.	Mason LD	YES	Complete	The list of activities includes: bi-annual stream clean-ups, escorting class of 50+ students, and freshman and transfer orientation. Refer to Appendix C for a complete list of activities.
	1.g.2 - Education and Outreach Activities- Next Reporting Period	Maintain a list of future education and outreach activities for each high-priority water quality issue.	A list of education and outreach activities that will be conducted during the next reporting period for each high-priority water quality issue, the estimated number of people reached, and an estimated percentage of the target audience or audiences that will be reached.	Mason LD	YES	Complete	Refer to Appendix C for a list of current and future education and outreach activities.

Minimum Control Measure No. 2: Public Involvement/ Participation							
BMP CATEGORY	**PROPOSED BMP**	**PROGRAM**	**MEASURABLE GOAL**	**RESPONSIBLE PERSON/ DEPARTMENT**	**CURRENT PROGRAM IN PLACE**	**ESTIMATED DATE OF IMPLEMENTATION**	**ANNUAL OBJECTIVES ACHIEVED/ INTENDED**
2.a - Public Involvement	2.a.1 - Compliance	The operator must comply with any applicable federal, state, and local public notice requirements.	The maintain an updated MS4 Program Plan. Copies of each MS4 program plan shall be posted on its website at a minimum of once a year and within 30 days of submittal of the annual report to the department.	Mason LD	YES	Complete	All previous MS4 Annual Reports are on our website at http://facilities.gmu.edu/ProjMgmtConst/LandDevelopment/ms4.cfm
2.b - Public Participation	2.b.1 - Participation	The operator shall participate in a minimum of four local activities annually.	Involve campus life in a minimum of four activities around campus yearly.	Mason LD	YES	Complete	Every year, Mason LD participates in two stream clean ups (one in spring and one in fall), orientation for freshman and transfer students, and Northern Virginia Regional Commission (NVRC) meetings.
2.c. - Procedures for Implementation	2.c.1 - Written Procedures	The MS4 Program Plan shall include written procedures for implementing this program.	Address how GMU considered the comments received in the development of its MS4 Program Plan.	Mason LD	YES	Complete	Water Quality testing occurs bi-annually, with a goal of quarter-annually testing, in order to determine the total output of nutrients. Records will be kept and analyzed against the different factors that effect the data.

2.d - Annual Report	2.d.1 - Website	A web link to the MS4 Program Plan and annual report.	Keep the website up to date and reset the counter every permit cycle.	Mason LD	YES	Complete	The web counter for our Mason Land Development page can be found at http://facilities.gmu.edu/ProjMgmtConst/LandDevelopment/index.cfm All previous MS4 Annual Reports are on our website at http://facilities.gmu.edu/ProjMgmtConst/LandDevelopment/ms4.cfm
	2.d.2 - Proof of Compliance	Documentation of compliance with the public participation requirements of this section.	Document how many activities Mason LD organizes and the number of participants per event.	Mason LD	YES	Complete	Mason LD keeps records of how many volunteers participate in the stream clean-ups. Compliance and safety forms are filled out for every volunteer before being allowed to participate.

Minimum Control Measure No. 3: Illicit Discharge Detection and Elimination							
BMP CATEGORY	**PROPOSED BMP**	**PROGRAM**	**MEASURABLE GOAL**	**RESPONSIBLE PERSON/ DEPARTMENT**	**CURRENT PROGRAM IN PLACE**	**ESTIMATED DATE OF IMPLEMENTATION**	**ANNUAL OBJECTIVES ACHIEVED/ INTENDED ACHIEVEMENT**
3.a - Storm Sewer System Map	3.a.1 - Location	Maintain the storm sewer system map annually.	The storm sewer system map should show at least the locations of all MS4 outfalls and the name and location of all waters receiving discharges from the MS4 outfalls and the associated HUC	Mason LD	YES	Complete	An outfall reconnaissance is conducted every year. Refer to Appendix E for both Fairfax and Prince William campuses.
	3.a.2 - Associated Information	Maintain information on every outfall located on the storm sewer system map annually.	For each outfall, the associated information table shall include a unique identifier, estimated MS4 acreage served, the name of the receiving surface water and indication, and the name of any applicable TMDL or TMDLs.	Mason LD	NO	2015	Data has been collected for all MS4 outfalls including unique identifier, receiving surface water, and any TMDLs. Mason LD is still in the process of compiling a usable database to store this information. We are expected to have this complete in 2015.

	3.a.3-5 - Completed Map	The operator shall have a completed and updated storm sewer system map and information table. The operator shall maintain a copy of this information, and continue to identify other points of discharge.	Maintain mapping and information table annually.	Mason LD	NO	2015	Data has been collected for all MS4 outfalls including unique identifier, receiving surface water, and any TMDLs. Mason LD is still in the process of compiling a usable database to store this information. We are expected to have this complete in 2015.

3.b - Prohibited Discharge	3.b.1 - Prohibit nonstormwater Discharge	The operator shall effectively prohibit, through ordinance or other legal mechanism, nonstormwater discharges into the storm sewer system to the extent allowable under federal, state, or local law, regulation, or ordinance.	Adopt a policy to effectively prohibit nonstormwater discharges into the storm sewer system.	Mason LD/EHS	YES	2015 Revisions	George Mason University's Illicit Discharge Detection and Elimination (IDDE) Policy prohibits non-stormwater discharges into the University's MS4. The policy educates and instructs the public on what illicit discharges are and how to notify Mason LD and/or EHS of a spill. The policy also establishes enforcement procedures for violators. Refer to Appendix E for Mason's IDDE Policy implemented 2013. The University is currently revising this policy. During this reporting period there was nothing written in the policy about individual residential car washing. This is expected to be added and implemented in 2015.

3.c - IDDE Procedures	3.c.1 - Written dry weather field screening	Dry Weather Screenings are to detect and eliminate illicit discharges to the MS4.	Include a prioritized schedule of field screening activities, the minimum number of field screening activities the operator shall complete annually, a time frame of the last rain, and when to conduct an investigation.	Mason LD/EHS	YES	Complete	Mason LD conducts field screenings of all outfalls at least twice a year during the outfall reconnaissance. Documentation is collected on the conditions of all outfalls during this time. If any violations are found between screenings, Mason LD has an understanding with EHS as to reporting any illicit discharge found on campus. Refer to Appendix E for Mason's IDDE policy and how to repot any violation.
3.d - Inspections	3.d.1 - Promote, publicize, and facilitate public reporting of illicit discharges into or from MS4	The operator shall conduct inspections in response to complaints and follow-up inspections as needed to ensure that corrective measures have been implemented by the responsible party.	Maintain MS4 inspections the include all stormwater outfalls. Inspection reports are based on odor, visual observation, and other indicators to identify illicit discharges.	Mason LD/FM	YES	Complete	A detailed inspection of the MS4 system is performed at least twice a year to ensure proper functioning of facilities and monitoring illicit discharges. Inadequate structures are to be tracked and prioritized for corrective maintenance.

3.e - Development Procedures	3.e.1 - Nonstormwater Discharges	The MS4 Program plan shall include all procedures developed by the operator to detect, identify, and address nonstormwater discharges to the MS4 in accordance with the schedule given in Appendix D.	Follow procedures for reporting and tracing all illicit discharges. Appropriate staff will be instructed with these procedures.	Mason LD/EHS	YES	Complete	Standard procedures shall be followed for reporting and tracing all illicit discharges.

3.f - Annual Reporting	3.f.1-3 - Requirements	Each annual report shall include a list of any written notifications of physical interconnection, the total number of outfalls screened during the reporting period, the screening results, details of any follow-up actions necessitated by the screening results, and a summery of each investigation.	Maintain written notifications with outside stormwater systems and complete an inventory form for all MS4 outfalls.	Mason LD/EHS	YES	Complete	All stormwater interconnections with outside stormwater systems are currently depicted on the MS4 maps in Appendix E, Maps A.1 and A.2 for both Fairfax and Prince William Campuses. Letters are sent to all protection interconnected MS4s which can be found in Appendix G. Mason LD completes an inventory form as part of the yearly outfalls reconnaissance. Refer to Appendix F, Maps B.1 and B.2. There were no reportable 2 incidents this calendar year with no potential to impact the environment. EHS did not need to notify any authority for either of the incidents occurring in calendar year 2014.

Minimum Control Measure No. 4: Construction Site Stormwater Runoff Control							
BMP CATEGORY	**PROPOSED BMP**	**PROGRAM**	**MEASURABLE GOAL**	**RESPONSIBLE PERSON/ DEPARTMENT**	**CURRENT PROGRAM IN PLACE**	**ESTIMATED DATE OF IMPLEMENTATION**	**ANNUAL OBJECTIVES ACHIEVED/ INTENDED ACHIEVEMENT**
4.a - Oversight Requirements	4.a.1-4 - Land Disturbing Activities	The operator shall utilize its legal authority to address discharges entering the MS4.	The operator shall utilize its legal authority to address discharges entering the MS4.	Mason LD	YES	Complete	Mason LD is the VESCP authority under the Annual Standards and Specifications for Erosion and Sediment Control and Stormwater Management approved by DEQ. This document can be found on our website at .http://facilities.gmu.edu/ProjMgmtConst/LandDevelopment/erosion1.cfm. All construction plans are approved and permitted prior to land disturbance by George Mason University.

4.b - Required Plan Approval	4.b.1 - Land Disturbing Activities	The operator shall require that land disturbance not begin until an erosion and sediment control plan or an agreement in lieu of a plan is approved by a VESCP authority.	The plan shall be either compliant with the minimum standards on the Erosion and Sediment Control Regulations, or compliant with department-approved annual standards and specifications.	Mason LD	YES	Complete	Mason LD is the VESCP authority under the Annual Standards and Specifications for Erosion and Sediment Control and Stormwater Management approved by DEQ. This document can be found on our website at .http://facilities.gmu.edu/ProjMgmtConst/LandDevelopment/erosion1.cfm. All construction plans are approved and permitted prior to land disturbance by George Mason University.
4.c - Compliance and Enforcement	4.c.1 - Inspections	The operator shall inspect land-disturbing activities for compliance with an approved erosion and sediment control plan or agreement in lieu of a plan in accordance with the minimum standards.	Maintain an inspection schedule that includes inspections upon installation, every four business days, within 48 hours of a 10-year storm, and at completion of the project.	Mason LD	YES	Complete	Mason LD inspects land disturbing activities upon installation, every four business days, within 48 hours of a 10-year storm, and at completion of the project.

4.d - Regulatory Coordination		The operator shall implement enforceable procedures to require small and large construction activities secure necessary state permit authorization from the department to discharge stormwater.	Implement procedures to require all construction activities on campus state permit authorization.	Mason LD	YES	Complete	Mason LD requires that all construction entities abide the Annual Standards and Specifications for Erosion and Sediment Control and Stormwater Management approved by DEQ. In addition, all construction entities must complete the DEQ checklist provided in George Mason University's Land Development How-To Manual. For general site plan review, Mason follows procedures for all stages of design given in the Construction and Professional Services Manual (CPSM), 2013 edition.
4.e - MS4 Program Requirements	4.e.1 - Requirements	The operator's MS4 Program must include a description of a legal authorities utilized to ensure compliance with the minimum control measures related to construction site stormwater runoff control.	Maintain compliance with the minimum control measures.	Mason LD/EHS	YES	Complete	Mason LD has an understanding with EHS as to reporting any illicit discharge found on campus. Refer to Appendix E for Mason's IDDE policy and how to repot any violation.

	4.e.2 - Written Plan Review Procedures	The operator's MS4 Program must include a description of a legal authorities utilized to ensure compliance with the minimum control measures related to construction site stormwater runoff control.	Maintain compliance with the minimum control measures.	Mason LD/ EHS	YES	Complete	Plan Reviewers use DEQ checklist provided in George Mason University's Land Development How-To Manual.
	4.e.3 - Approved Standards and Specifications	The operator's MS4 Program must include a description of a legal authorities utilized to ensure compliance with the minimum control measures related to construction site stormwater runoff control.	Maintain compliance with the minimum control measures.	Mason LD	YES	Complete	Mason LD is the VESCP authority under the Annual Standards and Specifications for Erosion and Sediment Control and Stormwater Management approved by DEQ.
	4.e.4 - Written Inspection Procedures	The operator's MS4 Program must include a description of a legal authorities utilized to ensure compliance with the minimum control measures related to construction site stormwater runoff control.	Maintain compliance with the minimum control measures.	Mason LD	YES	Complete	Report sent to the contractor as well as the project manager and inspector with inspection procedures and schedules attached.

	4.e.5 - Written Procedures for Compliance and Enforcement	The operator's MS4 Program must include a description of a legal authorities utilized to ensure compliance with the minimum control measures related to construction site stormwater runoff control.	Maintain compliance with the minimum control measures.	Mason LD	YES	Complete	Mason LD requires that all construction entities abide the Annual Standards and Specifications for Erosion and Sediment Control and Stormwater Management approved by DEQ. In addition, all construction entities must complete the DEQ checklist provided in George Mason University's Land Development How-To Manual.
	4.e.6 - Roles and Responsibilities	The operator's MS4 Program must include a description of a legal authorities utilized to ensure compliance with the minimum control measures related to construction site stormwater runoff control.	Maintain compliance with the minimum control measures.	Mason LD	YES	Complete	Mason LD implements all potions of the MS4 Program Plan.
4.f - Reporting Requirements	4.f.1 - Track regulated land-disturbing activities	Report the total number of regulated land-disturbing activities, total acreage disturbed, total number of inspections, and a summary of the actions taken during the reporting period.	Maintain an up-to-date file of all current and future land disturbing activities.	Mason LD	YES	Complete	Refer to Appendix H for a complete list of all current and future land disturbing activities. Refer to Appendix I for any notices of corrective action.

Minimum Control Measure No. 5: Post-Construction Stormwater Management in New Development and Redevelopment							
BMP CATEGORY	**PROPOSED BMP**	**PROGRAM**	**MEASURABLE GOAL**	**RESPONSIBLE PERSON/ DEPARTMENT**	**CURRENT PROGRAM IN PLACE**	**ESTIMATED DATE OF IMPLEMENTATION**	**ANNUAL OBJECTIVES ACHIEVED/ INTENDED ACHIEVEMENT**
5.a - Oversight Requirements	5.a.1-3 - New and Old Development	The operator shall address post-construction stormwater runoff that enters the MS4.	Any land disturbing activities for new or prior developed lands must be addressed.	Mason LD	YES	Complete	Mason LD inspects land disturbing activities upon installation, every four business days, within 48 hours of a 10-year storm, and at completion of the project.
5.b - Design Criteria	5.b.1-3 - Legal Authority	The operator shall utilize legal authority to address stormwater runoff.	Require a design and installation of all stormwater runoff controls compliant with the water quality criteria, design criteria, and department-approved annual standards and specifications for land disturbing activities.	Mason LD	YES	Complete	Mason LD is the VESCP authority under the Annual Standards and Specifications for Erosion and Sediment Control and Stormwater Management approved by DEQ. This document can be found on our website at http://facilities.gmu.edu/ProjMgmtConst/LandDevelopment/erosion1.cfm. All construction plans are approved and permitted prior to land disturbance by George Mason University.

5.c - Inspection, Operation, and Maintenance	5.c.1-2 - Stormwater Management Facilities	Provide for adequate long-term operation and management of its stormwater management facilities.	Long term operations and management procedures for all stormwater management facilities. An inspection must be completed annually.	Mason LD	YES	Complete	Mason's MS4 is owned by the operator. Inspections are completed twice annually on all stormwater management facilities. Refer to Appendix J for a list of stormwater management facilities on campus.
5.d - Program Plan Requirements	5.d.1 - MS4 Program Plan Updates	A list of the applicable legal authorities the ensure compliance with the minimum control measures related to post-construction stormwater management in new development and development on prior developed lands.	The operator's MS4 Program Plan shall be updated in accordance with the table in Appendix D.	Mason LD	YES	Complete	George Mason University is the legal authority that ensures compliance with the minimum control measures related to post-construction stormwater management in new development and development on prior developed lands.
	5.d.2 - MS4 Program Plan Updates	Written policies and procedures utilized to ensure that stormwater management facilities are designed and installed in accordance with legal authority.	The operator's MS4 Program Plan shall be updated in accordance with the table in Appendix D.	Mason LD	YES	Complete	Mason LD's written policies and procedures are published in the George Mason University Annual Standards and Specifications for Erosion and Sediment Control and Stormwater Management, 2012 Amended

	5.d.3 - MS4 Program Plan Updates	Written inspection policies and procedures utilized in conducting inspections.	The operator's MS4 Program Plan shall be updated in accordance with the table in Appendix D.	Mason LD	YES	Complete	Mason LD's written policies and procedures are published in the George Mason University Annual Standards and Specifications for Erosion and Sediment Control and Stormwater Management, 2012 Amended. Mason LD employees receive certification through VA DEQ. George Mason University is currently developing and implementing strategies that include a combination of structural and/or nonstructural best management practices (BMPs) appropriate for our campuses. A list of our stormwater facilities can be found in Appendix J.

	5.d.4 - MS4 Program Plan Updates	Written procedures for inspection, compliance and enforcement to ensure maintenance is conducted on private stormwater facilities to ensure long-term operation in accordance with approved design.	The operator's MS4 Program Plan shall be updated in accordance with the table in Appendix D.	Mason LD	YES	Complete	All stormwater management facilities on both Fairfax and Prince William campuses are owned and operated by the University. Information regarding long-term maintenance can be found in the George Mason University Annual Standards and Specifications for Erosion and Sediment Control and Stormwater Management, 2012 Amended.

	5.d.5 - MS4 Program Plan Updates	Written procedures for inspection and maintenance of operator-owned stormwater management facilities.	The operator's MS4 Program Plan shall be updated in accordance with the table in Appendix D.	Mason LD	YES	Complete	All stormwater management facilities on both Fairfax and Prince William campuses are owned and operated by the University. The includes the few structural BMPs including vegetative swales, rain gardens, pervious pavers, and a green roof. Information regarding long-term maintenance can be found in the George Mason University Annual Standards and Specifications for Erosion and Sediment Control and Stormwater Management, 2012 Amended.
	5.d.6 - MS4 Program Plan Updates	The roles and responsibilities of each of the operator's departments, divisions, or subdivisions in implementing the minimum control measures related to post-construction stormwater management in new development and development on prior developed lands.	The operator's MS4 Program Plan shall be updated in accordance with the table in Appendix D.	Mason LD	YES	Complete	Mason LD is the sole division and holds all responsibility for implementing the minimum control measures related to post-construction stormwater management in new development and development on prior developed lands at the University.

5.e - Tracking and Reporting	5.e.1-9 - Electronic Database or Spreadsheet	The operator shall maintain an updated electronic database of all known operator-owned and privately-owned stormwater management facilities that discharge into the MS4.	Maintain a database with the stormwater facility type, general description of location, the acres treated, date brought online, HUC number, whether the facility is operator-owned or privately-owned and if maintenance agrees, and the date of the operator's most recent inspection.	Mason LD	YES	2015	Mason LD has all of this information documented in hard copy. It is expected to be in a database by 2015. Refer to Appendix J for Stormwater Management Facilities.

Minimum Control Measure No. 6: Pollution Prevention/ Good Housekeeping for Municipal Operations							
BMP CATEGORY	**PROPOSED BMP**	**PROGRAM**	**MEASURABLE GOAL**	**RESPONSIBLE PERSON/ DEPARTMENT**	**CURRENT PROGRAM IN PLACE**	**ESTIMATED DATE OF IMPLEMENTATION**	**ANNUAL OBJECTIVES ACHIEVED/ INTENDED ACHIEVEMENT**
6.a - Operations and Maintenance Activities	6.a.1-8 - Written Procedures	The operator shall develop and implement written procedures designed to minimize or prevent pollutant discharge.	At a minimum, the written procedures shall be designed to: prevent illicit discharge, ensure the proper disposal of waste, prevent the discharge of municipal vehicle wash water into MS4, prevent the discharge of wastewater into MS4, require implementation of BMPs, minimize the pollutants in stormwater runoff from bulk storage areas, prevent pollution discharge into the MS4, and ensure that the application of materials is conducted in accordance with the manufacturer's recommendations.	Mason LD/ EHS/ FM	NO	2015	Although George Mason University does minimize pollution discharge, a written list of procedures is currently being written. This list will be completed by 2015.

6.b - Municipal Facility	6.b.1 - Municipal high-priority facilities	Within 12 months of the state permit coverage, the operator shall identify all municipal high-priority facilities.	The high-priority facilities shall include composting facilities, equipment storage and maintenance facilities, materials storage yards, pesticide storage facilities, public works yards, recycling facilities, salt storage facilities, solid waste handling and transfer facilities, and vehicle storage and maintenance yards.	Mason LD/ EHS/ PM	YES	Complete	George Mason University has high-priority facilities including equipment storage and maintenance facilities, materials storage yards, public works yards, recycling facilities, and vehicle storage and maintenance yards.
	6.b.2 - High potential of discharging pollutants	Within 12 months of the state permit coverage, the operator shall identify which of the municipal high-priority facilities have a high potential of discharging pollutants.	The high-priority facilities shall include composting facilities, equipment storage and maintenance facilities, materials storage yards, pesticide storage facilities, public works yards, recycling facilities, salt storage facilities, solid waste handling and transfer facilities, and vehicle storage and maintenance yards.	Mason LD	YES	Complete	George Mason University has policies and procedures in place (refer to Appendix E) if there is a potential of pollutant discharge at any of the municipal high-priority facilities on campus.
	6.b.3 - Stormwater Pollution Prevention Plans	The operator shall complete SWPPP development and implementation shall be completed within 48 months of coverage under this state permit.	Develop and Implement Stormwater Pollution Prevention Plan.	Mason LD	NO	2017	Mason LD has a current Stormwater Pollution Prevention Plan in place. We are in the process of revising and reinstating the SWPPP by 2017.

6.c - Turf and Landscaping Management	6.c.1 (a)- Turf and Landscaping	The operator shall implement turf and landscape nutrient management plans that have been developed by a certified turf and landscape nutrient management planner.	The operator shall implement turf and landscape nutrient management plans. Implementation shall be within 12 months of state permit coverage, the operator shall identify all applicable lands where nutrients are applied to a contiguous area of more than one acre.	Mason LD/ FM	YES	Complete	George Mason University, in collaboration with Valley Crest Landscaping Companies, has a Nutrient Management Plan effective till May 2015. Refer to Appendix K, Maps C.1 and C.2 for the current land use map and landscape management zones.
	6.c.1 (b)- Turf and Landscaping	The operator shall implement turf and landscape nutrient management plans that have been developed by a certified turf and landscape nutrient management planner.	Implementation shall be within 60 months of state permit coverage, the operator shall implement turf and landscape nutrient management plans on all lands where nutrients are applied to a contiguous area of more than one acre.	Mason LD	NO	2018	Mason is currently redeveloping the landscaping plan and is expected to be complete in 2018.

	6.c.2 - Annual Tracking	Operators shall annually track nutrient management Plans	Track the total acreage of lands where turf and landscape nutrient management plans are required and the total acreage of lands upon which turf and landscape nutrient management plans have been implemented.	Mason LD/ FM	YES	Complete	Mason LD is currently tracking the total acreage of lands where turf and landscape nutrient management plans are required and the total acreage of lands upon which turf and landscape nutrient management plans have been implemented. Refer to Appendix K for the current land use map and landscape management zones.
	6.c.3 - Deicing	The operator shall not apply any deicing agent containing urea or other forms of nitrogen or phosphorus to parking lots, roadways, and sidewalks, or other paved areas.	The operator shall not apply any deicing agent.	Mason LD/ FM	YES	Complete	George Mason University uses Kissner Salts and Chemicals: Landscaper's Choice Ice Melter for all sidewalks on campus. For all parking lots and roadways, Facilities Management purchases the identical deicing agent as Virginia Department of Transportation (VDOT).

6.d - Training	6.d.1 - Field Personnel	The operator shall conduct training for employees, determine and document the applicable employees or positions to receive each type of training, and develop an annual written training plan.	The operator shall provide biennial training to applicable field personnel in the recognition and reporting of illicit discharges.	Mason LD/ EHS	YES	Complete	EHS has personnel and procedures in place for recognition and reporting of illicit discharges.
	6.d.2 - Road, Street, and Parking Lot Maintenance	The operator shall conduct training for employees, determine and document the applicable employees or positions to receive each type of training, and develop an annual written training plan.	The operator shall provide biennial training to applicable employees in good housekeeping and pollution and prevention practices that are to be employed during road, street, and parking lot maintenance.	Mason LD	YES	Complete	Employees working on maintenance of roads, streets, and parking lots receive training by an outside contractor.
	6.d.3 - Maintenance and Public Works Facilities	The operator shall conduct training for employees, determine and document the applicable employees or positions to receive each type of training, and develop an annual written training plan.	The operator shall provide biennial training to applicable employees in good housekeeping and pollution and prevention practices that are to be employed in and around maintenance and public works facilities.	Mason LD/ PM	YES	Complete	Employees working in and around maintenance and public works facilities receive training by an outside contractor.

	6.d.4 - Pesticides and Herbicides	The operator shall conduct training for employees, determine and document the applicable employees or positions to receive each type of training, and develop an annual written training plan.	The operator shall ensure that employees, and require that contractors, who apply pesticides and herbicides are properly trained or certified in accordance with the Virginia Pesticide Control Act.	Mason LD/ FM	YES	Complete	Employees applying pesticides and herbicides have completed their yearly certifications by Virginia. There are currently (2) employees who are certified and (1) that is currently receiving training.
	6.d.5 - Plan Reviewers, Inspectors, Program Administrators, and Construction Site Certifications	The operator shall conduct training for employees, determine and document the applicable employees or positions to receive each type of training, and develop an annual written training plan.	The operator shall ensure that employees and contractors serving as plan reviewers, inspectors, program administrators, and construction site operators obtain the appropriate certifications.	Mason LD	YES	Complete	George Mason University provides services in plan review, inspections, program administration, and construction site operations. Any employees working as one of the above has received the appropriate certifications.

	6.d.6 - ESC Certifications	The operator shall conduct training for employees, determine and document the applicable employees or positions to receive each type of training, and develop an annual written training plan.	The operator shall ensure that applicable employees obtain that appropriate certifications as required under the Virginia Erosion and Sediment Control Law (VESCL) and its attendant regulations.	Mason LD	YES	Complete	All Erosion and Sediment Control inspectors and plan reviewers in Mason LD have successfully completed DCR's training and have acquired Certification for Combined administration. Mason LD has also verified that there is a registered RLD for construction activity that exceeded 1 acre of disturbance. This year, (6) employee was certified by DEQ, and (4) employees attended DEQ's training and certification class planning on taking the certification exam later in 2014/early 2015.
	6.d.7 - In and Around Recreational Facilities	The operator shall conduct training for employees, determine and document the applicable employees or positions to receive each type of training, and develop an annual written training plan.	The operator shall provide biennial training to applicable employees in good housekeeping and pollution and prevention practices that are to be employed in and around recreational facilities.	Mason LD/ EHS	YES	Complete	George Mason University contracts all work in and around recreational facilities to Brickman and Game Day, Inc. Both companies provide their own trained employees.

	6.d.8 - Emergency Response	The operator shall conduct training for employees, determine and document the applicable employees or positions to receive each type of training, and develop an annual written training plan.	The appropriate emergency response employees shall have training in spill responses.	Mason LD/ EHS	YES	Complete	EHS has 10 staff members who have received 40 hour HAZWOPER training to act as emergency spill responders, and we maintain the training records for all these members.
	6.d.9 - Training Documentation	The operator shall conduct training for employees, determine and document the applicable employees or positions to receive each type of training, and develop an annual written training plan.	The operator shall keep documentation on each training event including the training date, the number of employees attending the training, and the objective of the training event for a period of three years after each training.	Mason LD/ EHS	YES	Complete	George Mason University keeps documentation on each training event including the training date, the number of employees attending the training, and the objective of the training event for a minimum period of three years after each training.
6.e - Control Measures and Procedures	6.e.1 - Stormwater Discharge Procedures	The operator shall require that municipal contractors use appropriate control measures and procedures for stormwater discharge to the MS4 system.	Oversight procedures shall be described in the MS4 Program Plan.	Mason LD	YES	Complete	Mason LD has (4) employees provisionally certified in Stormwater Management by DEQ this permit cycle. These employees inspect construction sites to ensure the control measures and procedures are being implemented correctly.

6.f - MS4 Program Plan		At a minimum, the MS4 Program Plan shall contain: written protocols being used to satisfy the daily operations and maintenance requirements, a list of all municipal high-priority facilities, a list of lands where nutrients are applied to a contiguous area of more than one acre, and the annual written training plan for the next reporting cycle.	Maintain protocols being used to satisfy the daily operations and maintenance requirements, a list of all municipal high-priority facilities, a list of lands where nutrients are applied, and the annual written training plan for the next reporting cycle.	Mason LD	NO	2016	George Mason University is currently establishing written protocols for daily operations and maintenance requirements. This document is expected to be completed by 2016. Refer to the above section 6.c.1 for all high-priority facilities. George Mason University has a Nutrient Management Plan for both Fairfax Campus and Prince William Campus. Refer to Appendix K for Nutrient Management maps.
6.g - Annual Reporting Requirements		Summaries on the development and implementation of daily operational procedures, required SWPPPs, turf and landscape required, and the required training information.	Compile summaries of all procedures, SWPPPs, turf and landscaping, and training information.	Mason LD	NO	2018	Mason LD currently has all training information completed. Once the SWPPPs and turf and landscaping information is compiled in 2017, the summaries are expected to be completed by 2018.

Appendix B:
Water Quality Monitoring

Water Quality Monitoring

In accordance with the MS4 Permit 2013-2018, George Mason University (GMU) has created a Water Quality Monitoring Procedure that includes the newly created Water Quality Monitoring Manual that provides detailed instruction and information about proper testing and reporting procedures. In order to ensure the University is properly discharging and treating the waters across the campuses, GMU Facilities requires testing on a bi-annual basis with a goal of quad-annual testing. George Mason University has identified the following pollutants/characteristics as top priority for monitoring.

1. Temperature
2. pH
3. Turbidity
4. Dissolved Oxygen
5. Nitrogen
6. Nitrate
7. Phosphorus
8. Total Suspended Solids

During this permitting period, written procedures and preliminary testing were completed. The University shall begin bi-annual testing starting in Fall 2014 for ten outfalls on Fairfax Campus and one outfall on Prince William Campus Future tests will be divided into two categories: Primary and Secondary. Below are the example spreadsheets that results are recorded on when conducting field tests. The Water Quality Monitoring Manual is available by request. To request a copy, or if there are any questions/concerns, please contact:

George Mason University Facilities Administration, Attn. Liz Anderson

4400 University Drive, MSN #1E4, 703-993-4323

Example Primary Results Spreadsheet + Checklist

George Mason University Land Development Water Quality Primary Testing Results				
Date: / /20	Time: : AM/PM	Location:		
Weather Conditions:				
Results				
Test	**Category**	**Trial 1**	**Trial 2**	**Trial 3**
Temperature [°C]	-			
pH	EcoTestr pH 2 Waterproof Pocket Tester Method			
Turbidity [FAU]	-			
Dissolved Oxygen	High Range, 0 to 1000 µg/L O2 Ammonia, 0 to 0.5 mg/L, NH_3-N			
Nitrogen	Ammonia, Low Range, Test 'N Tube, 0 to 2.5 mg/L, NH_3-N, Salicylate Method			
	Reactive, Using AccuVac Ampuls			
Nitrate	Low Range, 0 to 0.5 mg/L NO_3^--N, Cadmium Reduction Method, Using Powder Pillows			
Phosphorus	Reactive, Using Powder Pillows			
Total Suspended Solids [mg/L]	-			

Primary	**Temperature**	-	
	pH	pH Meter Method	
	Turbidity	-	
	Dissolved Oxygen	High Range, 0 to 15 mg/L O2	
	Nitrogen	Ammonia, 0 to 0.5 mg/L NH_3-N	
		Ammonia, Low Range, Test 'N Tube, 0 to 2.5 mg/L NH_3-N, Salicylate Method	
	Nitrate	Low Range, 0 to 0.5 mg/L NO_3^--N, Cadmium, Reduction Method, Using Powder Pillows	
	Phosphorus	Reactive, Using AccuVac Ampuls	
	Total Suspended Solids	-	

Notes:

Example Secondary Results Spreadsheet + Checklist

George Mason University Land Development Water Quality Secondary Testing Results				
Date: / /20	Time: : AM/PM	Location:		
Weather Conditions:				
Results				
Test	**Category**	**Trial 1**	**Trial 2**	**Trial 3**
pH	Test Strip Method			
	Colorimeter Method			
Dissolved Oxygen	Low Range, 0 to 1000 µg/L O2			
Nitrogen	Ammonia, High Range, Test 'N Tube, 0 to 50 mg/L NH_3-N, Salicylate Method			
Nitrate	Mid-Range, 0 to 5.0 mg/L NO_3^--N, Cadmium Reduction Method, Using Powder Pillows			
	Mid-Range, 0 to 5.0 mg/L NO_3^--N, Cadmium Reduction Method, Using AccuVac Ampuls			
	High Range, 0 to 30.0 mg/L NO_3^--N, Cadmium Reduction Method, Using Powder Pillows			
	High Range, 0 to 30.0 mg/L NO_3^--N, Cadmium Reduction Method, Using AccuVac Ampuls			
	High Range, Test 'N Tube, 0 to 30.0 mg/L, NO_3^--N, Chromotropic Acid Method			
Phosphorus	Reactive, 0.00 to 5.00 mg/L PO_4^{3-}, PhosVer 3 Method, Test 'N Tube Procedure			
	Reactive, 0 to 30.0 mg/L PO_4^{3-}, Amino Acid Method			
	Reactive, 0 to 2.5 mg/L PO_4^{3-}			
	Reactive, 0 to 45.0 mg/L PO_4^{5-}, Molybdovanadate Method, Using Reagent Solution			
	Reactive, 0 to 45.0 mg/L PO_4^{5-}, Molybdovanadate Method, Using AccuVac Ampuls			

Secondary	**pH**	Test Strip Method	
		Colorimeter Method	
	Dissolved Oxygen	Low Range, 0 to 1000 µg/L O2	
	Nitrogen	Ammonia, High Range, Test 'N Tube, 0 to 50 mg/L NH_3-N, Salicylate Method	
	Nitrate	Mid-Range, 0 to 5.0 mg/L NO_3^--N, Cadmium Reduction Method, Using Powder Pillows	
		Mid-Range, 0 to 5.0 mg/L NO_3^--N, Cadmium Reduction Method, Using AccuVac Ampuls	
		High Range, 0 to 30.0 mg/L NO_3^--N, Cadmium Reduction Method, Using Powder Pillows	
		High Range, 0 to 30.0 mg/L NO_3^--N, Cadmium Reduction Method, Using AccuVac Ampuls	
		High Range, Test 'N Tube, 0 to 30.0 mg/L, NO_3^--N, Chromotropic Acid Method	
	Phosphorus	Reactive, 0.00 to 5.00 mg/L PO_4^{3-}, PhosVer 3 Method, Test 'N Tube Procedure	
		Reactive, 0 to 30.0 mg/L PO_4^{3-}, Amino Acid Method	
		Reactive, 0 to 2.5 mg/L PO_4^{3-}	
		Reactive, 0 to 45.0 mg/L PO_4^{5-}, Molybdovanadate Method, Using Reagent Solution	
		Reactive, 0 to 45.0 mg/L PO_4^{5-}, Molybdovanadate Method, Using AccuVac Ampuls	

Notes:

Appendix C:
Public Education and Outreach Campaigns and Activities

Education and Outreach Activities- July 1, 2013-June 30, 2014		
Date	**Activity**	**Notes**
August 28, 2013	Class presentation and tour	Explained BMPs to class of 50+ students
October 5, 2013	Stream Clean Up	Collected 75 pounds of garbage and 46 pounds of recyclables
April 12, 2014	Stream Clean Up	Collected 210.45 pounds of garbage and 114.91 pounds of recyclables
July 21, 2014	Kiosk	Hand out Mason LD brochures with facts about stormwater to students, faculty, and staff on campus.
July 22, 2014	Kiosk	Hand out Mason LD brochures with facts about stormwater to students, faculty, and staff on campus.
July 24, 2014	Kiosk	Hand out Mason LD brochures with facts about stormwater to students, faculty, and staff on campus.
July 29, 2014	Kiosk	Hand out Mason LD brochures with facts about stormwater to students, faculty, and staff on campus.

Figure 1

The Land Development Team at George Mason University seeks to alert homeowners, students, and staff on the impacts of stormwater runoff on water quality through free training sessions, workshops and distributions of educational materials. The public outreach program at Mason also provides guidance on how the community can help in minimizing adverse impacts of urban runoff in waterways.

George Mason University marks all inlets around all three main campuses with this drainage marker.

George Mason University
4400 University Drive, MS 1E4
Fairfax, Virginia 22030

CONTACT
MasonLD@gmu.edu
http://facilities.gmu.edu

GEORGE MASON UNIVERSITY Land Development

STORMWATER MANAGEMENT

STORMWATER MANAGEMENT

Stormwater runoff is rainwater that doesn't soak into the ground. The rain that runs off is often washed pollutants from impervious surfaces like parking lots, streets, and gutters into the storm drain system, which then flows into our streams, ponds, and bays. Stormwater can flow into a storm sewer system or directly to a stream, wetland, river, or pond. Anything that enters a storm sewer system is discharged untreated into these bodies.

EROSION AND SEDIMENT CONTROL

Erosion and Sediment Control and Stormwater Management Programs are integral components of GMU's design, construction, maintenance, and management of the university's facilities and campuses.

Masonvale Rain Garden

HOW DOES STORMWATER MANAGEMENT WORK?

Under natural conditions, rainwater is dissipated through the processes of transpiration, evaporations and percolation. Through transpiration, a large quantity of water is intercepted by plant foliage and evaporates back into the atmosphere. The remaining water that reaches the surface of ground infiltrates into the soils and through percolation, continues to travel underground until it slowly makes its way into the streams and aquifers.

As water seeps into the ground the process of percolation also allows for the removal of pollutants present in stormwater. The ability of water to seep into the ground, as well as, the amount of water that can be retained depends on soil properties such as porosity and permeability. A high porosity soil can hold large amounts of water and usually allows for rapid infiltration. When precipitation reaches the soil surface faster than it can be infiltrated into the ground, water collects at the surface and travels downhill.

WHY IS STORMWATER MANAGEMENT NECESSARY?

As more land cover is replaced with impervious surfaces, less rain can be naturally absorbed and treated by the environment. After development, stormwater discharges can increase by more that twice the amount under natural conditions. If not controlled, large quantities of water can cause flooding in our communities and stream channel erosion. Stormwater Management's policies are necessary in order to address impacts of urbanization on water resources, minimize flood damage, and significant erosion of channel bed and banks.

stormwater graphic courtesy John David Hardee

Proposed Education and Outreach Activities 2014-2018	
Activity	**Goal**
Bi-annual Stream Clean Up	Clean every stream on campus.
Information Stations around Campus	Increase awareness and public education on high-priority water quality issues by using kiosks in commonly occupied buildings on campus.
Guest Lecture	Attend more classes to teach students the importance on high-priority water quality issues and reducing waste on campus.

Appendix D:
Schedule of MS4 Program Plan Updates Required

Schedule of MS4 Program Plan Updates Required			
Program Update Requirement	**Permit Reference**	**Update Completed By**	**Where added in Appendix A**
Public Education Outreach Plan (MCM 1)	Section II B 1	12 months after permit coverage	MCM 1.b-g Pages 9-15 Also in Appendix C
Illicit Discharge Procedures (MCM 3)	Section II B 3		MCM 3.e Page 22 Also in Appendix E
Individual Residential Lot Special Criteria (MCM 5)	Section II B 5 c (1) (d)		MCM 5.c.1-2 Page25 Also in Appendix H
Operator-Owned Stormwater Management Inspection Procedures (MCM 5)	Section II B 5		MCM 5.d Pages 25-28 Also in Appendix H
Identification of Locations Requiring SWPPPs (MCM 6)	Section II B 6 b		MCM 6.b.1-2 Page 36
Nutrient Management Plan (NMP) Locations (MCM 6)	Section II B 6 c (1) (a)		MCM 6.c.1 (a) Page 37 Appendix K
Training Schedule and Program (MCM 6)	Section II B 6		MCM 6.c.1 (b) Page 37

Updated TMDL Action Plans	Section I B	24 months after permit coverage	Not added in Appendix A. Will be complete in 2015.
Chesapeake Bay TMDL Action Plan	Section I C		Not added in Appendix A. Will be complete in 2015.
Stormwater Management Progressive Compliance and Enforcement (MCM 4)	Section II B 5		MCM 5 Pages 24-28
Daily Good housekeeping Procedures (MCM 6)	Section II B 6 a		MCM 6.a.1-8 Page 35
Other TMDL Action Plans for applicable TMDLs approved between June 2008 and June 2013	Section I B	36 months after permit coverage	Not added in Appendix A. Will be complete in 2015.
Outfall Map Completed (MCM 3)	Section II B 3 a (3)	48 months after permit coverage	MCM 3.a.3-5 Page 19
SWPPP Implementation (MCM 6)	Section II B 6 b (3)		MCM 6.b.3 Page 36
NMP Implementation (MCM 6)	Section II B 6 c (1) (b)	60 months after permit coverage	MCM 6.c.1 (b) Page 37

Appendix E:
Illicit Discharge Detection and Elimination Program

universitypolicy.gmu.edu http://universitypolicy.gmu.edu/policies/illicit-discharge-detection-and-elimination/

Illicit Discharge Detection and Elimination

University Policy Number 1409

Categorized: General Policies

Responsible Office: Environmental Health and Safety

Policy Procedure:

- George Mason University MS4 Program Plan

Related Law & Policy:

- Virginia Stormwater Management Program (VSMP) Permit Regulations 4VAC50-60-10 et seq.
- Clean Water Act 33 U.S.C. §1251 et seq.
- Policy 1406: Environmental Health and Safety
- Policy 1408: Environmental Management and Sustainability System

I. PURPOSE AND SCOPE

The purpose of this policy is to provide for the health, safety, and general welfare of the students, staff and visitors of George Mason University through the regulation of non-storm water discharges to the storm drainage system to the maximum extent practicable as required by federal and state law. This policy establishes methods for controlling the introduction of pollutants into the municipal separate storm sewer system (MS4) in order to comply with requirements of Virginia Stormwater Management Program permit for George Mason University.

II. DEFINITIONS

"Best Management Practices" (BMPs) means schedules of activities, prohibitions of practices, general good housekeeping practices, pollution prevention and educational practices, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants directly or indirectly to storm water, receiving waters, or storm water conveyance systems. BMPs also include treatment practices, operating procedures, and practices to control site runoff, spillage or leaks, sludge or water disposal, or drainage from raw materials storage.

"De Minimis" means small, minor, or insignificant spills of materials that occur during normal material handling operations (e.g., spills from unloading or transfer of materials, leaks from pipes or valves, minor leaks of process equipment, etc.).

"Hazardous Materials" means any material, including any substance, waste, or combination thereof, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may cause, or significantly contribute to, a substantial present or potential hazard to human health, safety, property, or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.

"Illegal Discharge" means any direct or indirect non-storm water discharge to the storm drain system, except as exempted in Section III of this policy.

"Municipal Separate Storm Sewer System" (MS4) means the system of conveyances (including, roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains) owned and operated by George Mason University and designed or used for collecting or conveying storm water, and that is not used for collecting or conveying sewage.

"Non-Storm Water Discharge" means any discharge to the storm drain system that is not composed entirely of storm water.

"Pollutant" means anything which causes or contributes to pollution. Pollutants may include, but are not limited to: paints, varnishes, and solvents; oil and other automotive fluids; non-hazardous liquid and solid wastes and yard wastes; refuse, rubbish, garbage, litter, or other discarded or abandoned objects, polices, and accumulations, so that same may cause or contribute to pollution; floatables; pesticides, herbicides, and fertilizers; hazardous substances and wastes; sewage, fecal coliform and pathogens; dissolved and particulate metals; animal wastes; wasteland residues that result from constructing a building or structure; and noxious or offensive matter of any kind.

"Storm Drainage System" means publicly-owned facilities by which storm water is collected and/or conveyed, including but not limited to any roads with drainage systems, municipal streets, gutters, curbs, inlets, piped storm drains, pumping facilities, retention and detention basins, natural and human-made or altered drainage channels, reservoirs, and other drainage structures.

"Storm Water" means any surface flow, runoff, and drainage consisting entirely of water from any form of natural precipitation, and resulting from such precipitation.

"Wastewater" means any water or other liquid, other than uncontaminated storm water, discharged from a facility.

III. PROHIBITION OF ILLICIT DISCHARGES

No university employee, student, visitor or contractor shall throw, drain, or otherwise discharge, cause, or allow others under its control to throw, drain, or otherwise discharge into the university's storm water drainage system any pollutants or waters containing any pollutants, other than storm water. It is the responsibility of the Offices of Environmental Health and Safety (EHS), Facilities Management and Facilities Project Management and Construction Management to train employees to recognize the hazards associated with illicit discharges and to identify illicit discharge sources. Additionally, Facilities Land Development ("Mason LD") is responsible for performing outfall inspections and surveys, including observation, documentation, and sampling (if deemed necessary).

The commencement, conduct, or continuance of any illegal discharge to the storm drain system is prohibited except as described as follows:

1. The following discharges are exempt as they are considered to be not significant contributors of pollutants to the MS4: water line flushing, landscape irrigation, diverted stream flows, rising ground waters, uncontaminated ground water infiltration, uncontaminated pumped ground water, discharges from potable water sources, foundation drains, air conditioning condensation, irrigation water, springs, water from crawl space pumps, footing drains, lawn watering, flows from riparian habitats and wetlands, de-chlorinated swimming pool discharges, street wash water and flows that have been identified in writing by Virginia's Department of Environmental Quality as de minimis discharges that are not significant sources of pollutants to state waters and not requiring a VPDES permit.

2. Discharges or flow from firefighting, and other discharges specified in writing by Mason LD as being necessary to protect public health and safety.

3. Discharges associated with dye testing; however, this activity requires notification to Mason LD prior to the time of the test.

4. The prohibition shall not apply to any non-storm water discharge permitted under an NPDES permit, waiver, or waste discharge order issued to the discharger and administered under the authority of the United States Environmental Protection Agency (EPA), provided that the discharger is in full compliance with all requirements of the permit, waiver, or order and other applicable laws and regulations, and provided that written approval has been granted for the permitted discharge to the storm drain system.

IV. NOTIFICATION OF SPILLS

Notwithstanding other requirements of law, as soon as any person responsible for a facility or operation, or responsible for emergency response for a facility or operation has information of any known or suspected release of materials, which are resulting or may result in illegal discharges or pollutants discharging into storm water, the storm drain system, or waters of the United States, said person shall take all necessary steps to ensure the discovery, containment, mitigation, and proper reporting of such release.

In the event of a release of non-hazardous materials; said person shall notify EHS within 24 hours via email (safety@gmu.edu), phone (703-993-8448), or by calling University Police, who in turn will contact EHS. If hazardous material of any amount enters a storm sewer; said person shall immediately notify University Police, who will then notify EHS. Failure to provide notification of a release as provided above is a violation of this Policy.

V. COMPLIANCE

A. The university may suspend or cease activities and operations that are not in full compliance with this policy.

B. Whenever George Mason University finds that a violation of this Policy has occurred, EHS may order compliance by written notice to the responsible person. Such notice may require, without limitation:

1. The performance of monitoring, analyses, and reporting;
2. The elimination of prohibited discharges or connections;
3. Cessation of any violating discharges, practices, or operations;
4. The abatement or remediation of storm water pollution or contamination hazards and the restoration of any affected property;
5. Payment of any fee, penalty, or fine assessed against the university to cover remediation cost;
6. The implementation of new storm water management practices; and
7. Disciplinary action up to and including dismissal, where appropriate.

C. Such notification shall set forth the nature of the violation(s) and establish a time limit for correction of these violation(s). Said notice may further advise that, if applicable, should the violator fail to take the required action within the established deadline. EHS will then initiate work orders for the appropriate corrective actions and the violator or university department will be charged for the cost.

D. The remedies listed in this Policy are not exclusive of any other remedies available under any applicable federal, state, or local law.

VI. EFFECTIVE DATE, REVIEW, AND APPROVAL:

This policy will become effective upon the date of approval by the Senior Vice President and Provost. This Policy, and any related procedures, shall be reviewed annually.

Approved:

__/S_____ ___1/22/2013_____
Senior Vice President Date

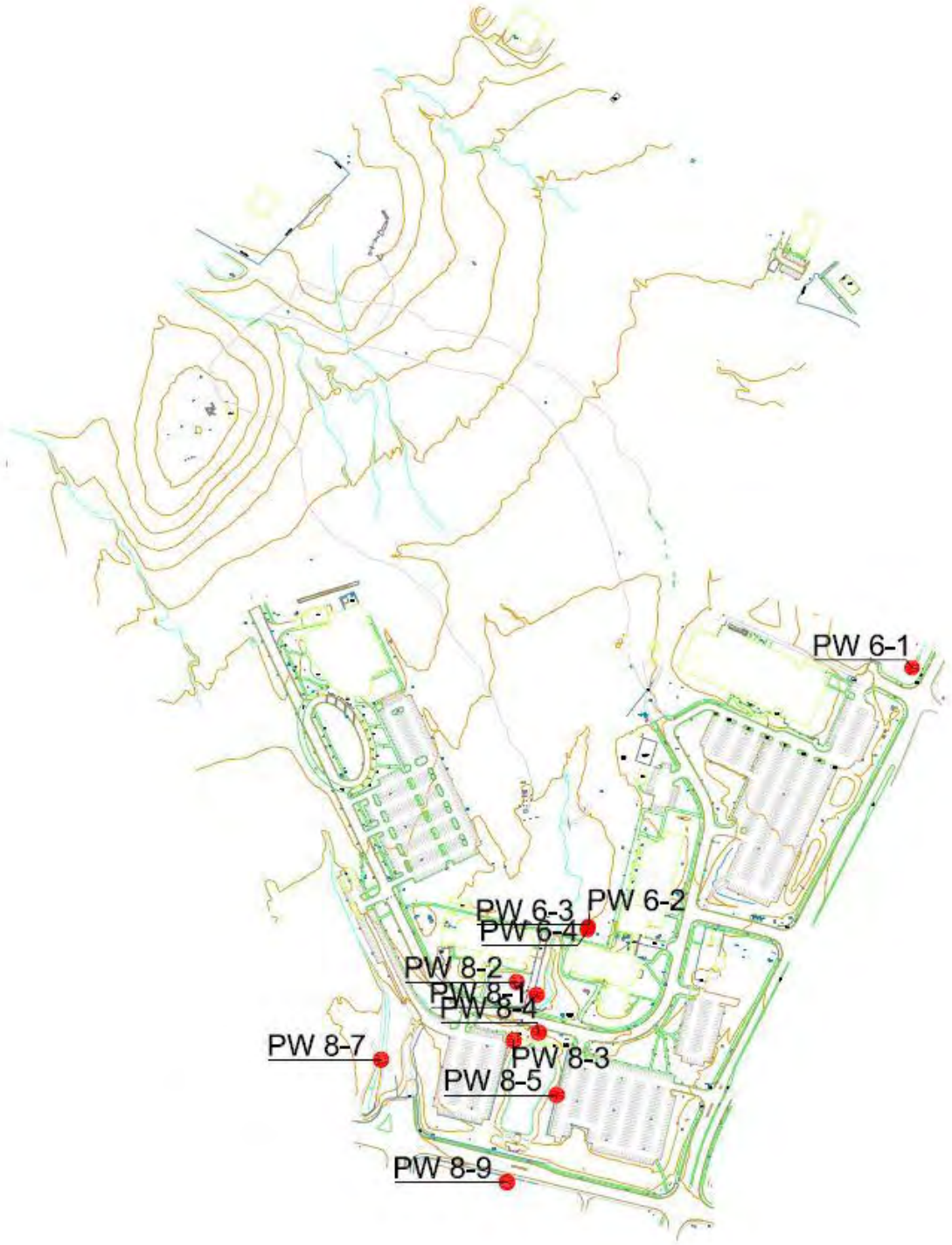
Approved:

__/S_____ ___1/22/2013_____
Provost Date

Appendix F:
MS4 Internal Outfalls

Map B.1: Internal Outfalls –Fairfax Campus

Map B.2: Internal Outfalls –Prince William Campus



Appendix G:
Notice of Potential Interconnected MS4

GEORGE MASON UNIVERSITY

Facilities Project Management & Construction
4400 University Drive - MSN 2A9
Fairfax, VA 22030-4444

703-993-2513
Fax: 703-993-2521
e-mail: shamil13@gmu.edu

August 27, 2014

Fairfax County
DPWES Director's Office
12055 Government Center Pkwy
Fairfax, VA 22035

Subject: MS4 Permit; Notice of Potential Interconnected Stormwater System

Attention: James Patteson, Appointed Director of DPWES

George Mason University (Mason) is a Phase II small MS4 and is covered under the Virginia Stormwater Management Program (VSMP) General Permit for Discharges of Stormwater from Small Municipal Separate Storm Sewer Systems (Registration Number VAR040106).

The purpose of this letter is to notify you of the potential for interconnections between the stormwater system operated by Mason and the stormwater systems that you operate. The MS4 permit requires that Mason notify in writing, any downstream regulated MS4 to which Mason is physically interconnected. We have identified several points where Mason discharges stormwater into your regulated MS4 stormwater system. Please see attached Figure 1: Map of MS4 Interconnectivity. There is no action required on your part at this time, as this letter is for notification purposes only. Please keep this for your records.

If you have any questions or desire additional information related to this subject, please contact me:

S. Keith Hamilton, PE
Director, Project Management & Construction
(703) 993-2513
Email: shamil13@gmu.edu

Sincerely,

S. Keith Hamilton, PE
Director, Project Management & Construction

Attachment(s):
(1) Figure 1: Map of MS4 Interconnectivity

Copy to:

- Tom Calhoun, Mason, Vice President of Facilities
- Leah Maslov, Mason, Land Development
- Elizabeth Anderson, Mason, Land Development

POST

GEORGE MASON UNIVERSITY

Facilities Project Management & Construction
4400 University Drive - MSN 2A9
Fairfax, VA 22030-4444

703-993-2513
Fax: 703-993-2521
e-mail: shamil13@gmu.edu

August 27, 2014

Prince William County
Watershed Management Branch
5 County Complex Suite 170
Prince William, VA 22192

Subject: MS4 Permit; Notice of Potential Interconnected Stormwater System

Attention: Benjamin Eib, Assistant Branch Chief of Watershed Management

George Mason University (Mason) is a Phase II small MS4 and is covered under the Virginia Stormwater Management Program (VSMP) General Permit for Discharges of Stormwater from Small Municipal Separate Storm Sewer Systems (Registration Number VAR040106).

The purpose of this letter is to notify you of the potential for interconnections between the stormwater system operated by Mason and the stormwater systems that you operate. The MS4 permit requires that Mason notify in writing, any downstream regulated MS4 to which Mason is physically interconnected. We have identified several points where Mason discharges stormwater into your regulated MS4 stormwater system. Please see attached Figure 1: Map of MS4 Interconnectivity. There is no action required on your part at this time, as this letter is for notification purposes only. Please keep this for your records.

If you have any questions or desire additional information related to this subject, please contact me:

S. Keith Hamilton, PE
Director, Project Management & Construction
(703) 993-2513
Email: shamil13@gmu.edu

Sincerely,

S. Keith Hamilton, PE
Director, Project Management & Construction

Attachment(s):
(1) Figure 1: Map of MS4 Interconnectivity

Copy to:

- Tom Calhoun, Mason, Vice President of Facilities
- Leah Maslov, Mason, Land Development
- Elizabeth Anderson, Mason, Land Development

POST

GEORGE MASON UNIVERSITY

Facilities Project Management & Construction
4400 University Drive - MSN 2A9
Fairfax, VA 22030-4444

703-993-2513
Fax: 703-993-2521
e-mail: shamil13@gmu.edu

August 27, 2014

Department of Transportation
Location and Design Division
1401 East Broad Street
Richmond, VA 23219-2000

Subject: MS4 Permit; Notice of Potential Interconnected Stormwater System

Attention: Roy T. Mills, State Stormwater Program Administrator

George Mason University (Mason) is a Phase II small MS4 and is covered under the Virginia Stormwater Management Program (VSMP) General Permit for Discharges of Stormwater from Small Municipal Separate Storm Sewer Systems (Registration Number VAR040106).

The purpose of this letter is to notify you of the potential for interconnections between the stormwater system operated by Mason and the stormwater systems that you operate. The MS4 permit requires that Mason notify in writing, any downstream regulated MS4 to which Mason is physically interconnected. We have identified several points where Mason discharges stormwater into your regulated MS4 stormwater system. Please see attached Figure 1: Map of MS4 Interconnectivity- Fairfax Campus and Figure 2: Map of MS4 Interconnectivity- Prince William Campus. There is no action required on your part at this time, as this letter is for notification purposes only. Please keep this for your records.

If you have any questions or desire additional information related to this subject, please contact me:

S. Keith Hamilton, PE
Director, Project Management & Construction
(703) 993-2513
Email: shamil13@gmu.edu

Sincerely,

S. Keith Hamilton, PE
Director, Project Management & Construction

Attachment(s):
(1) Figure 1: Map of MS4 Interconnectivity- Fairfax Campus
(2) Figure 2: Map of MS4 Interconnectivity- Prince William Campus

Copy to:

- Tracey Harmon, VDOT, Environmental Quality Division
- Christine Watlington, VDOT, Senior Policy Analyst
- Tom Calhoun, Mason, Vice President of Facilities
- Leah Maslov, Mason, Land Development
- Elizabeth Anderson, Mason, Land Development

POST

GEORGE MASON UNIVERSITY

Facilities Project Management & Construction
4400 University Drive - MSN 2A9
Fairfax, VA 22030-4444

703-993-2513
Fax: 703-993-2521
e-mail: shamil13@gmu.edu

August 27, 2014

City of Fairfax
City Hall Room 316
10455 Armstrong Street
Fairfax, VA 22030

Subject: MS4 Permit: Notice of Potential Interconnected Stormwater System

Attention: Robert Sisson, City Manager

George Mason University (Mason) is a Phase II small MS4 and is covered under the Virginia Stormwater Management Program (VSMP) General Permit for Discharges of Stormwater from Small Municipal Separate Storm Sewer Systems (Registration Number VAR040106).

The purpose of this letter is to notify you of the potential for interconnections between the stormwater system operated by Mason and the stormwater systems that you operate. The MS4 permit requires that Mason notify in writing, any downstream regulated MS4 to which Mason is physically interconnected. We have identified several points where Mason discharges stormwater into your regulated MS4 stormwater system. Please see attached Figure 1: Map of MS4 Interconnectivity. There is no action required on your part at this time, as this letter is for notification purposes only. Please keep this for your records.

If you have any questions or desire additional information related to this subject, please contact me:

S. Keith Hamilton, PE
Director, Project Management & Construction
(703) 993-2513
Email: shamil13@gmu.edu

Sincerely,

S. Keith Hamilton, PE
Director, Project Management & Construction

Attachment(s):
(1) Figure 1: Map of MS4 Interconnectivity

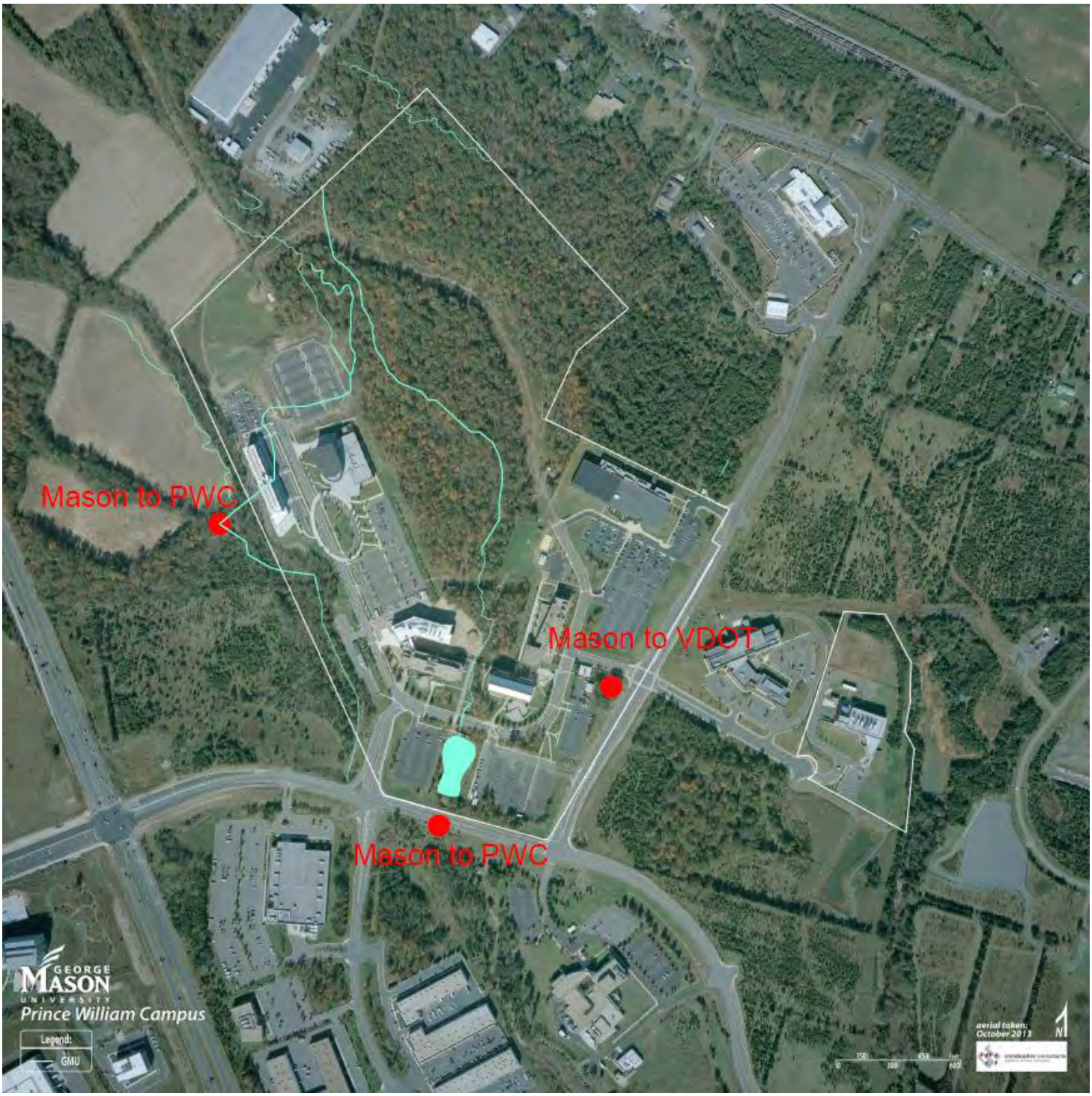
Copy to:

- Tom Calhoun, Mason, Vice President of Facilities
- Leah Maslov, Mason, Land Development
- Elizabeth Anderson, Mason, Land Development

POST

Map A.1: Connectivity Map –Fairfax Campus

Map A.2: Connectivity Map –Prince William Campus



Appendix H:

Current and Future Land Disturbing Projects

Current and Future Land Disturbing Projects							
Project Name	**Total Disturbed Area (ac)**	**Projected Timeline**		**Location**	**On-Site Project Manager**	**Project Description**	**Number of Inspections**
		Start	**Finish**				
Projects Currently Under Construction							
Roanoke River Road	1.9	Aug-12	Nov- 14	Fairfax	Christy Hogan (571) 226-6485	Campus Entrance	25
Life Science Lab Building	5.2	July-12	Jan-15	Prince William	Micky Boeckl (703) 993-3726	Academic Laboratory Building	5
Fenwick Library	2.3 (?)	Dec-12	Sep-15	Fairfax	Alex Iszard (703) 993-9220	Academic Library	49
West Campus Connector Road	15 (?)	Dec-12	Dec-14	Fairfax	Christy Hogan (571) 226-6485	Road and Grade Separated Crossing	55
Shenandoah Dining	0.5	Aug-13	Sep-14	Fairfax	Nancy Pickens (571) 296-1137	Dining Building	29
Shenandoah Housing	1.5	May-13	Nov-14	Fairfax	Nancy Pickens (571) 296-1137	Student Housing	39
Field House	1.3	Nov-13	Nov-14	Fairfax	Johnny Trejos (571) 480-3124	Athletic Facility	0

2013/2014 Proposed/Potential Future Construction Projects							
Project Name	**Approximate Total Disturbed Area (ac)**	**Projected Timeline**		**Location**	**On-Site Project Manager**	**Project Description**	**Stormwater Management Component**
		Start	**Finish**				
Academic VII	5.54	April-15	May-17	Fairfax	Micky Boeckl (703) 993-3726	Academic Building	This project is still in the planning stage.
Rappahannock Housing	1	May-16	Sep-18	Fairfax	Nancy Pickens (571) 296-1137	Student Housing	This project is still in the planning stage.
Plant Expansion	0.25	Sep-13	Jun-15	Fairfax	Mike Herman (703) 993-2242	Facilities Building	Stormwater from this expansion will be treated with the rest of the existing plan.
Bull Run Hall	Conceptual 3.5	Jan- 16	Nov-18	Prince William	Micky Boeckl (703) 993-3726	Academic and Research Building	This project is still in the planning stage.
Hilton Performing Arts Addition	2	June-15	June-16	Prince William	Mike Herman (703) 993-2242	Concert Hall	Stormwater from this addition will be treated with the rest of the existing building.

Appendix I:
Notice of Corrective Action

GEORGE MASON UNIVERSITY
Facilities Construction Office
4400 University Drive – Mail Stop 2C1
Fairfax, Virginia 22030-4444

(p): 703-993-4051
(c): 571-265-1977
Fax:703-993-2521

August 19, 2013

Bright Construction Group
2812 Old Lee Hwy, STE 200A
Fairfax, VA 22031
Attn: Juan Padilla, Project Manager

Re: Sub II Presidents Park Pedestrian Path [PC: 247-145784]
VESCL Notice of Corrective Action (NOCA)

Dear Mr. Padilla:

On August 13, 2013 George Mason University staff inspected the Sub II Presidents Park Pedestrian Path site (permit #ES-145784) for compliance with the Virginia Erosion and Sediment Control Law (VESCL). A copy of the resulting report is attached to this letter.

At the August 8, 2013 progress meeting for the above referenced project, the following issues regarding E&S closeout items were also discussed:

- Need for permanent shady seed mix
- Removal of super silt fence contingent upon full stabilization
- Need for stabilization underneath the bridge (plantings per Addendum #1)

Bright Masonry proceeded to disregard all direction provided by Mason with respect to the remaining E&S site issues. Instead:

- Bright Masonry failed to submit a shady seed mix for approval.
- Bright Masonry prematurely removed the super silt fence before approval by Mason LD
- Bright Masonry failed to submit a shade tolerant ground cover for approval. Instead, English ivy (a non-native planting) was planted in undesirable locations

This letter shall serve as your official Notice to Comply. As such, you have 72 hours to stabilize your site in accordance with the VESCL and GMU Annual Standards and Specifications.

If the discrepancies described above cannot be resolved to the satisfaction of Mason LD within the time allotted or continue to be issues in the future, Mason LD has the authority to immediately pursue formal enforcement action. Mason has contacted the Department of Environmental Quality to inform them of this matter. Failure to provide corrective action by 22 August 2013 may result in additional enforcement action through the Department of Environmental Quality.

Sincerely,

Robbie Houser
Erosion and Sediment Control and Stormwater Administrator

Attachment:
(1) E&S Reports dated 13 August 2013

Copy to:
- Robert Endebrock, Mason
- Brad Glatfelter, Mason
- Christy Hogan, Mason
- Andrew Harms, Mason
- Troy Smith, DEQ

Appendix J:
Permanent Stormwater Management Facilities

Inventory of Permanent Stormwater Management Facilities

Facility Name	Type	Location	HUC 12 Code	Virginia Code	Discharging Surface Waters	Drainage area (acres)	Facility size (acres)	BMP Efficiency (%)	TMDL	WQ Treatment Area (acres)	Geographic Coordinates
Braddock Road Pond	Wet Pond	East Fairfax Campus	020700100401	PL29	Pohick Creek	315	~1.40 ac-ft	40	N/A	159.9	38.825243, -77.303450
Mason Pond	Wet Pond	East Fairfax Campus	020700100401	PL29	Pohick Creek	137	~9.79 ac-ft	50	N/A	163.02	38.828948, -77.310392
Rivanna Basin	Dry Pond	East Fairfax Campus	020700100401	PL29	Pohick Creek	28.12	28.12	N/A	N/A	Quantity Only	38.832147, -77.303623
Krasnow Pond	Dry Pond	East Fairfax Campus	020700100401	PL29	Pohick Creek	8.5	3.06	44.08	N/A	8.52	38.831.439, -77.299742
Masonvale Pond	Dry Pond	East Fairfax Campus	020700100401	PL29	Pohick Creek	17.4	8.83	35	N/A	6.99	38.832049, -77.299455
West Campus Pond	Dry Pond	West Campus	020700100705	PL46	Lower Bull Run	46.98		40	N/A		38.831387, -77.324588
PW Pond	Wet Pond	Prince William Campus	020700100504	PL34	Broad Run-Rocky Branch	70.53		50	N/A		38.755797, -77.522198
Roanoke SWM pond	Dry Pond	East Fairfax Campus	020700100401	PL29	Pohick Creek	4.98	0.37	40	N/A	0.92	38.826520, -77.311293
MHI Rain Garden #1	Rain Garden	Masonvale Ph. 2	020700100401	PL29	Pohick Creek	0.12	0.002	50	N/A	0.9	38.834585, -77.299988
MHI Rain Garden #2	Rain Garden	Masonvale Ph. 2	020700100401	PL29	Pohick Creek	0.08	0.002	50	N/A	0.6	38.833592, -77.299156
MHI Rain Garden #3	Rain Garden	Masonvale Ph. 2	020700100401	PL29	Pohick Creek	0.2	0.002	50	N/A	0.16	38.834441, -77.298927
Piedmont Rain Garden #1	Rain Garden	East Fairfax Campus	020700100401	PL29	Pohick Creek	0.04	0.01	50	N/A	0.02	38.832089, -77.306059
Piedmont Rain Garden #2	Rain Garden	East Fairfax Campus	020700100401	PL29	Pohick Creek	0.045	0.006	50	N/A	0.04	38.832404, -77.306244
Permeable Pavers	Permeable Surface	Masonvale Ph. 1 & 2	020700100401	PL29	Pohick Creek	4.6	.09	40	N/A	4.6	38.833084, -77.301103
Eastern Shore bike rack	Pervious Surface	East Fairfax Campus	020700100401	PL29	Pohick Creek	0.01011	0.01011	45	N/A	0	38.833318, -77.304331
Hampton Roads bike rack	Pervious Surface	East Fairfax Campus	020700100401	PL29	Pohick Creek	0.00984	0.00984	45	N/A	0	38.834022, -77.305071
Piedmont infiltration trench	Infiltration Trench	East Fairfax Campus	020700100401	PL29	Pohick Creek	0.05	0.006	50	N/A	0.03	38.832406, -77.306177
Bio-Swale #1	Bio-Swale	ACAD V X-Walk	020700100401	PL29	Pohick Creek	0.6	0.04	35	N/A	0.15	38.827410, -77.306680

Bio-Swale #2	Bio-Swale	Prince William Campus	020700100504	PL34	Broad Run-Rocky Branch	1.52	0.13237	40	N/A	0	38.758298, -77.523085
Potomac Heights infiltration trench	Infiltration Trench	East Fairfax Campus	020700100401	PL29	Pohick Creek	0.100069	0.00846	50	N/A	0.024313	38.826544, -77.302922
Research Hall Green Roof	Green Roof	East Fairfax Campus	020700100401	PL29	Pohick Creek	0.0149	0.019	50	N/A	0	38.828800, -77.305494

Appendix K:
Nutrient Management Plan

George Mason University's Nutrient Management Plan is a low impact lawn program designed to achieve a minimum impact on the watershed environment and at the same time maintain a nice lawn. Valley Crest is Currently contrated to apply fertilizer four times a year providing a total minimum of four pounds of actual nitrogen applied per 1000 ft^2 turf.

Area needing Fertilizer	**Break down of Fertilizer (Nitrogen – Phosphoras – Potassium)**
Fertilizer for Turf	18 – 6 – 12
Broad Leaf Evergreens	0 – 10 – 10
Tree and Flowering Ordimentals	Fertilized by deep root feeding
Shrubs and Ground Cover	10 – 10 – 10

Nitrogen content should be from a control release source to avoid runoff. Pre emergent herbisides are to be applied once in mid April. Post emergent herbisides are applied twice- once in early May and a second time in either September or October. Post emergent applications of Round Up are applied as needed. In an effort to minimumze the amount of surface runoff, the contractor has developed and implements an IPM (Integrated Pest Management) program for the control of all insects and diseses for all turf, ordimental trees, shrubs, and ground covers. All testing is done by A & L Eastern Laboratories.

Map C.1: Nutrient Management Plan –Land Use

Map C.2: Nutrient Management Plan –Landscape Management Zones